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A Geno Technology, Inc. (USA) brand name

Safety Data Sheet

Proteomic Grade Detergent Variety Pack,
10% Aqueous Solutions

Cat. # DG521



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TWEEN 80, conc=10%, aqueous solution

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations
Date of issue: 1/4/2016 Revision date: 1/17/2025 Supersedes: 1/14/2025 Version: 9.0

SECTION 1 Identification

1.1. Product identifier

Product form : Mixture
Product name : TWEEN 80, conc=10%, aqueous solution
CAS-No. : 9005-65-6
Product code : 366T
Formula : (C64H123O26)_n
BIG No : 28671

1.2. Other means of identification

No additional information available

1.3. Recommended use of the chemical and restrictions on use

Use of the substance/mixture : Detergent according to Regulation (EC) No 648/2004

1.4. Supplier's details

G-Biosciences/ Geno Technology, Inc.
9800 Page Avenue
St. Louis, MO 63132-1429, USA
Tel.1-800-628-7730
www.GBiosciences.com

1.5. Emergency phone number

Emergency number : Chemtrec **1-800-424-9300** (USA/Canada), **+1-703-527-3887** (Intl)

SECTION 2 Hazard Identification

2.1. Classification of the substance or mixture

GHS US classification

Not classified

2.2. Label elements

GHS US labeling

No labeling applicable

2.3. Hazards associated with known or reasonably anticipated uses

No additional information available

2.4. Hazards not otherwise classified

No additional information available

2.5. Unknown acute toxicity

No additional information available

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SECTION 3 Composition/information on ingredients

3.1. Substances

Not applicable

3.2. Mixtures

This mixture does not contain any substances to be mentioned according to the criteria for section 3.2 of HCS

SECTION 4 First aid measures

4.1. Description of necessary first-aid measures

First-aid measures general	: If you feel unwell, seek medical advice.
First-aid measures after inhalation	: Remove the victim into fresh air. Respiratory problems: consult a doctor/medical service.
First-aid measures after skin contact	: Rinse with water. Soap may be used. Take victim to a doctor if irritation persists.
First-aid measures after eye contact	: Rinse with water. Remove contact lenses, if present and easy to do. Continue rinsing. Take victim to an ophthalmologist if irritation persists.
First-aid measures after ingestion	: Rinse mouth with water. Immediately after ingestion: give lots of water to drink. Call Poison Information Centre (www.big.be/antigif.html). Consult a doctor/medical service if you feel unwell.
Self protection of the first-aiders	: First aid workers will be equipped with suitable personal protective equipment.

4.2. Most important symptoms/effects, acute and delayed

Potential Adverse human health effects and symptoms	: Based on available data, the classification criteria are not met.
Symptoms/effects	: Unlikely to cause harmful effects.
Symptoms/effects after inhalation	: None under normal conditions.
Symptoms/effects after skin contact	: None under normal conditions.
Symptoms/effects after eye contact	: None under normal conditions.
Symptoms/effects after ingestion	: None under normal conditions.

4.3. Indication of immediate medical attention and special treatment needed, if necessary

Other medical advice or treatment	: Treat symptomatically.
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SECTION 5: Fire-fighting measures

5.1. Suitable (and unsuitable) extinguishing media

Suitable extinguishing media	: Quick-acting ABC powder extinguisher. Quick-acting BC powder extinguisher. Quick-acting class B foam extinguisher. Quick-acting CO2 extinguisher. Class B foam (alcohol-resistant). Water spray if puddle cannot expand.
Unsuitable extinguishing media	: Water (quick-acting extinguisher, reel); risk of puddle expansion. Water; risk of puddle expansion.

5.2. Specific hazards arising from the chemical

Fire hazard	: No fire hazard.
Explosion hazard	: No direct explosion hazard.
Hazardous decomposition products in case of fire	: Toxic fumes may be released.

5.3. Special protective equipment and precautions for fire-fighters

Precautionary measures fire	: Exposure to fire/heat: keep upwind. Exposure to fire/heat: have neighbourhood close doors and windows.
Firefighting instructions	: No specific fire-fighting instructions required.
Protection during firefighting	: Heat/fire exposure: compressed air/oxygen apparatus.

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SECTION 6 Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

General measures : Stop leak if safe to do so. Notify authorities if product enters sewers or public waters. Absorb spillage to prevent material-damage.

For non-emergency personnel

Protective equipment : Gloves. Protective clothing.
Emergency procedures : Mark the danger area. No naked flames. Wash contaminated clothes.

For emergency responders

Protective equipment : Do not attempt to take action without suitable protective equipment. Equip cleanup crew with proper protection. For further information refer to section 8: "Exposure controls/personal protection".

Emergency procedures : Ventilate area. Evacuate unnecessary personnel. Stop leak if safe to do so.

Environmental precautions : Avoid release to the environment. Prevent entry to sewers and public waters. Notify authorities if liquid enters sewers or public waters.

6.2. Methods and materials for containment and cleaning up

For containment : Contain released product, collect/pump into suitable containers. Plug the leak, cut off the supply.

Methods for cleaning up : Take up liquid spill into inert absorbent material, e.g.: sand or vermiculite. Scoop absorbed substance into closing containers. Clean contaminated surfaces with an excess of water. Wash clothing and equipment after handling.

Other information : Dispose of materials or solid residues at an authorized site.

See Heading 8. Exposure controls and personal protection. For further information refer to section 13.

SECTION 7 Handling and storage

7.1. Precautions for safe handling

Precautions for safe handling : Keep away from naked flames/heat. Carry operations in the open/under local exhaust/ventilation or with respiratory protection. Comply with the legal requirements. Keep container tightly closed.

Hygiene measures : Do not eat, drink or smoke when using this product. Always wash hands after handling the product.

Additional hazards when processed : Not expected to present a significant hazard under anticipated conditions of normal use.

7.2. Conditions for safe storage, including incompatibilities

Technical measures : Keep in a cool, well-ventilated place away from heat.

Storage conditions : Store in a well-ventilated place. Keep cool. Keep only in the original container in a cool, well ventilated place away from : Keep container closed when not in use.

Storage area : Meet the legal requirements.

Incompatible products : Strong bases. Strong acids.

Incompatible materials : Sources of ignition. Direct sunlight.

Information on mixed storage : KEEP SUBSTANCE AWAY FROM: oxidizing agents. (strong) bases. metals.

Heat-ignition : KEEP SUBSTANCE AWAY FROM: heat sources.

Special rules on packaging : SPECIAL REQUIREMENTS: closing, correctly labelled. meet the legal requirements. Secure fragile packagings in solid containers.

Packaging materials : Store always product in container of same material as original container.

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SECTION 8 Exposure controls/personal protection

8.1. Control parameters

No additional information available

8.2. Appropriate engineering controls

Appropriate engineering controls : Ensure good ventilation of the work station.
Environmental exposure controls : Avoid release to the environment.

8.3. Individual protection measures, such as personal protective equipment

Personal protective equipment:

Avoid all unnecessary exposure.

Hand protection:
Gloves
Eye protection:
Chemical goggles or safety glasses. Safety glasses
Skin and body protection:
Protective clothing
Respiratory protection:
Respiratory protection not required in normal conditions

Personal protective equipment symbol(s):



Other information:

Do not eat, drink or smoke during use.

SECTION 9 Physical and chemical properties

9.1. Basic physical and chemical properties

Physical state	: Liquid
Appearance	: Liquid.
Color	: Colourless
Odor	: characteristic
Odor threshold	: No data available
pH	: 5 – 7 (5 %)
Melting point	: Not applicable
Freezing point	: No data available
Boiling point	: No data available
Flash point	: > 230 °C
Flammability (solid, gas)	: Not applicable. Non flammable.
Vapor pressure	: No data available
Relative vapor density at 20°C	: No data available
Relative density	: No data available
Solubility	: Soluble in water. Soluble in ethanol. Soluble in acetone. Insoluble in oils/fats. Soluble in methanol. Water: > 10 g/100ml
Partition coefficient n-octanol/water (Log Pow)	: No data available

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Auto-ignition temperature	: No data available
Decomposition temperature	: No data available
Viscosity, kinematic	: No data available
Explosion limits	: No data available
Particle characteristics	: No data available

9.2. Data relevant with regard to physical hazard classes (supplemental)

Other properties : Clear. Neutral reaction.

SECTION 10 Stability and reactivity

10.1. Reactivity

The product is non-reactive under normal conditions of use, storage and transport.

10.2. Chemical stability

Stable under normal conditions.

10.3. Possibility of hazardous reactions

No dangerous reactions known under normal conditions of use. Not established.

10.4. Conditions to avoid

None under recommended storage and handling conditions (see section 7). Direct sunlight. Extremely high or low temperatures.

10.5. Incompatible materials

Strong acids. Strong bases.

10.6. Hazardous decomposition products

Hazardous decomposition products. fume. Carbon monoxide. Carbon dioxide.

SECTION 11 Toxicological information

11.1. Information on toxicological effects

Acute toxicity (oral)	: Not classified
Acute toxicity (dermal)	: Not classified
Acute toxicity (inhalation)	: Not classified

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LD50 oral rat	34500 mg/kg (Rat, Oral)
ATE US (oral)	34500 mg/kg body weight

Skin corrosion/irritation	: Not classified pH: 5 – 7 (5 %)
Serious eye damage/irritation	: Not classified pH: 5 – 7 (5 %)
Respiratory or skin sensitization	: Not classified
Germ cell mutagenicity	: Not classified
Carcinogenicity	: Not classified
Reproductive toxicity	: Not classified
STOT-single exposure	: Not classified
STOT-repeated exposure	: Not classified
Aspiration hazard	: Not classified

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Potential Adverse human health effects and symptoms	: Based on available data, the classification criteria are not met.
Symptoms/effects	: Unlikely to cause harmful effects.
Symptoms/effects after inhalation	: None under normal conditions.
Symptoms/effects after skin contact	: None under normal conditions.
Symptoms/effects after eye contact	: None under normal conditions.
Symptoms/effects after ingestion	: None under normal conditions.

SECTION 12 Ecological information

12.1. Ecotoxicity

Ecology - general	: The product is not considered harmful to aquatic organisms or to cause long-term adverse effects in the environment.
Ecology - air	: Not classified as dangerous for the ozone layer (Regulation (EC) No 1005/2009).
Ecology - water	: Not harmful to aquatic organisms. Contains ground water contaminating component(s). Mild water pollutant (surface water).
Hazardous to the aquatic environment, short-term (acute)	: Not classified
Hazardous to the aquatic environment, long-term (chronic)	: Not classified

12.2. Persistence and degradability

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Persistence and degradability	Biodegradability in water: no data available.
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12.3. Bioaccumulative potential

TWEEN 80, conc=10%, aqueous solution (9005-65-6)

Bioaccumulative potential	No bioaccumulation data available.
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12.4. Mobility in soil

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Ecology - soil	No (test) data on mobility of the component(s) available.
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12.5. Other adverse effects

Ozone	: Not classified
Fluorinated greenhouse gases	: No
Other information	: Avoid release to the environment.

SECTION 13 Disposal considerations

Regional legislation (waste)	: Disposal must be done according to official regulations.
Waste treatment methods	: Waste treatment methods.
Sewage disposal recommendations	: Disposal must be done according to official regulations.
Product/Packaging disposal recommendations	: Do not discharge into drains or the environment. Dispose of at authorized waste collection point.
Additional information	: Can be considered as non hazardous waste according to Directive 2008/98/EC, as amended by Regulation (EU) No 1357/2014 and Regulation (EU) No 2017/997.
Ecological waste information	: Avoid release to the environment.

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SECTION 14 Transport information

In accordance with DOT / TDG / IATA

14.1. UN number

Not regulated for transport

14.2. UN Proper Shipping Name

Proper Shipping Name (DOT)	: Not applicable
Proper Shipping Name (TDG)	: Not applicable
Proper Shipping Name (IATA)	: Not regulated

14.3. Transport hazard class(es)

DOT
Transport hazard class(es) (DOT) : Not applicable

TDG
Transport hazard class(es) (TDG) : Not applicable

IATA
Transport hazard class(es) (IATA) : Not regulated

14.4. Packing group

Packing group (DOT)	: Not applicable
Packing group (TDG)	: Not applicable
Packing group (IATA)	: Not regulated

14.5. Environmental hazards

Other information : No supplementary information available.

14.6. Transport in bulk

Not applicable

14.7. Special precautions for user

DOT
No data available

TDG
No data available

IATA
Not regulated

SECTION 15 Regulatory information

15.1. Federal regulations

Commercial status of components according to the United States Environmental Protection Agency's Toxic Substances Control Act (TSCA):
No data available

15.2. International regulations

CANADA

No additional information available

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EU-Regulations

No additional information available

National regulations

No additional information available

15.3. State regulations

No additional information available

SECTION 16 Other information

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Other information : None.

Abbreviations and acronyms	
ACGIH	American Conference of Government Industrial Hygienists
ADN	European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways
ADR	European Agreement concerning the International Carriage of Dangerous Goods by Road
ATE	Acute Toxicity Estimate
BCF	Bioconcentration factor
BLV	Biological limit value
BOD	Biochemical oxygen demand (BOD)
CAS-No.	Chemical Abstract Service number
CLP	Classification Labelling Packaging Regulation; Regulation (EC) No 1272/2008
COD	Chemical oxygen demand (COD)
CSA	Chemical safety assessment
DMEL	Derived Minimal Effect level
DNEL	Derived-No Effect Level
EC-No.	European Community number
EC50	Median effective concentration
ED	Endocrine disruptor
EN	European Standard
EWC	European waste catalogue
IARC	International Agency for Research on Cancer
IATA	International Air Transport Association
IMDG	International Maritime Dangerous Goods
LC50	Median lethal concentration
LD50	Median lethal dose
LOAEL	Lowest Observed Adverse Effect Level
Log Kow	Partition coefficient n-octanol/water (Log Kow)

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Abbreviations and acronyms	
Log Pow	Partition coefficient n-octanol/water (Log Pow)
MAK	maximum workplace concentration
NOAEC	No-Observed Adverse Effect Concentration
NOAEL	No-Observed Adverse Effect Level
NOEC	No-Observed Effect Concentration
N.O.S.	Not Otherwise Specified
OECD	Organisation for Economic Co-operation and Development
OEL	Occupational Exposure Limit
OSHA	Occupational Safety & Health Administration
PBT	Persistent Bioaccumulative Toxic
PNEC	Predicted No-Effect Concentration
PPE	Personal protection equipment
RID	Regulations concerning the International Carriage of Dangerous Goods by Rail
SDS	Safety Data Sheet
STP	Sewage treatment plant
TF	Technical function
ThOD	Theoretical oxygen demand (ThOD)
TLM	Median Tolerance Limit
TWA	Time Weighted Average
VOC	Volatile Organic Compounds
vPvB	Very Persistent and Very Bioaccumulative
UFI	Unique Formula Identifier

Safety Data Sheet (SDS), USA

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.



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Date of issue: 8/27/2015 Revision date: 10/6/2025 Supersedes: 10/6/2025 Version: 12.0

SECTION 1 Identification

1.1. Product identifier

Product form : Mixture
Product name : TWEEN 20, conc=10%, aqueous solution
Product code : 359T_T118
Formula : C58H114O26
BIG No : 25479

1.2. Other means of identification

Synonyms : ethoxylated sorbitan monolaurate (=TWEEN 20) / polyoxyethylene (20)sorbitan monolaurate / polysorbate 20 / sorbitan, monododecanoate, poly(oxy-1,2-ethanediyl) derivatives

1.3. Recommended use of the chemical and restrictions on use

Restrictions on use : Scientific research and development

1.4. Supplier's details

G-Biosciences/ Geno Technology, Inc.
9800 Page Avenue
St. Louis, MO 63132-1429, USA
Tel.1-800-628-7730
www.GBiosciences.com

1.5. Emergency phone number

Emergency number : Chemtrec **1-800-424-9300** (USA/Canada), **+1-703-527-3887** (Intl)

SECTION 2 Hazard Identification

2.1. Classification of the substance or mixture

GHS US classification

Not classified

2.2. Label elements

GHS US labeling

No labeling applicable

2.3. Hazards associated with known or reasonably anticipated uses

No additional information available

2.4. Hazards not otherwise classified

No additional information available

2.5. Unknown acute toxicity

No additional information available

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SECTION 3 Composition/information on ingredients

3.1. Substances

Not applicable

3.2. Mixtures

This mixture does not contain any substances to be mentioned according to the criteria for section 3.2 of HCS

SECTION 4 First aid measures

4.1. Description of necessary first-aid measures

First-aid measures general	: Check the vital functions. Unconscious: maintain adequate airway and respiration. Respiratory arrest: artificial respiration or oxygen. Cardiac arrest: perform resuscitation. Victim conscious with laboured breathing: half-seated. Victim in shock: on his back with legs slightly raised. Vomiting: prevent asphyxia/aspiration pneumonia. Prevent cooling by covering the victim (no warming up). Keep watching the victim. Give psychological aid. Keep the victim calm, avoid physical strain. Depending on the victim's condition: doctor/hospital.
First-aid measures after inhalation	: Remove person to fresh air and keep comfortable for breathing. Remove the victim into fresh air. Respiratory problems: consult a doctor/medical service.
First-aid measures after skin contact	: Rinse with water. Soap may be used. Take victim to a doctor if irritation persists. Wash skin with plenty of water.
First-aid measures after eye contact	: Rinse with water. Remove contact lenses, if present and easy to do. Continue rinsing. Take victim to an ophthalmologist if irritation persists. Rinse eyes with water as a precaution.
First-aid measures after ingestion	: Rinse mouth with water. Immediately after ingestion: give lots of water to drink. Do not induce vomiting. Call Poison Information Centre (www.big.be/antigif.html). Ingestion of large quantities: immediately to hospital. Consult a doctor/medical service if you feel unwell. Call a poison center/doctor/physician if you feel unwell.
Self protection of the first-aider	: First aid workers will be equipped with suitable personal protective equipment.

4.2. Most important symptoms/effects, acute and delayed

Potential Adverse human health effects and symptoms	: Slightly harmful by inhalation.
Symptoms/effects	: Not expected to present a significant hazard under anticipated conditions of normal use.
Symptoms/effects after inhalation	: None under normal conditions.
Symptoms/effects after skin contact	: Slight irritation.
Symptoms/effects after eye contact	: Slight irritation.
Symptoms/effects after ingestion	: None under normal conditions.

4.3. Indication of immediate medical attention and special treatment needed, if necessary

Other medical advice or treatment	: Treat symptomatically.
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SECTION 5: Fire-fighting measures

5.1. Suitable (and unsuitable) extinguishing media

Suitable extinguishing media	: Quick-acting ABC powder extinguisher. Quick-acting BC powder extinguisher. Quick-acting class B foam extinguisher. Quick-acting CO2 extinguisher. Class B foam (alcohol-resistant). Water spray if puddle cannot expand. Water spray. Dry powder. Foam. Carbon dioxide.
Unsuitable extinguishing media	: Water (quick-acting extinguisher, reel); risk of puddle expansion. Water; risk of puddle expansion.

5.2. Specific hazards arising from the chemical

Fire hazard	: No fire hazard.
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Explosion hazard : No direct explosion hazard.
Hazardous decomposition products in case of fire : Toxic fumes may be released.

5.3. Special protective equipment and precautions for fire-fighters

Precautionary measures fire : Exposure to fire/heat: keep upwind. Exposure to fire/heat: seal off low-lying areas. Exposure to fire/heat: have neighbourhood close doors and windows.
Firefighting instructions : Cool tanks/drums with water spray/remove them into safety. Do not enter fire area without proper protective equipment, including respiratory protection.
Protection during firefighting : Heat/fire exposure: self-contained breathing apparatus (EN 136 + EN 137). Do not attempt to take action without suitable protective equipment. Self-contained breathing apparatus. Complete protective clothing.

SECTION 6 Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

General measures : Stop leak if safe to do so. Notify authorities if product enters sewers or public waters. Absorb spillage to prevent material-damage.

For non-emergency personnel

Protective equipment : Gloves (EN 374). Protective clothing (EN 14605 or EN 13034).
Emergency procedures : Ventilate spillage area. Mark the danger area. No naked flames. Wash contaminated clothes.

For emergency responders

Protective equipment : Do not attempt to take action without suitable protective equipment. Equip cleanup crew with proper protection. For further information refer to section 8: "Exposure controls/personal protection".
Emergency procedures : Ventilate area. Evacuate unnecessary personnel. Stop leak if safe to do so.

Environmental precautions : Avoid release to the environment. Prevent entry to sewers and public waters. Notify authorities if liquid enters sewers or public waters.

6.2. Methods and materials for containment and cleaning up

For containment : Contain released product, collect/pump into suitable containers. Plug the leak, cut off the supply. Contain any spills with dikes or absorbents to prevent migration and entry into sewers or streams. Stop leak, if possible without risk.
Methods for cleaning up : Take up liquid spill into absorbent material. Take up liquid spill into absorbent material, e.g.: sand, earth, vermiculite. Scoop absorbed substance into closing containers. Wash down leftovers with plenty of water. Clean contaminated surfaces with an excess of water. Wash clothing and equipment after handling.
Other information : Dispose of materials or solid residues at an authorized site.

See Heading 8. Exposure controls and personal protection. For further information refer to section 13.

SECTION 7 Handling and storage

7.1. Precautions for safe handling

Precautions for safe handling : Ensure good ventilation of the work station. Wear personal protective equipment. Keep away from naked flames/heat. In finely divided state: use spark-/explosionproof appliances. Finely divided: keep away from ignition sources/sparks. Carry operations in the open/under local exhaust/ventilation or with respiratory protection. Comply with the legal requirements. Clean contaminated clothing. Keep container tightly closed.
Hygiene measures : Do not eat, drink or smoke when using this product. Always wash hands after handling the product.

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Additional hazards when processed : Not expected to present a significant hazard under anticipated conditions of normal use.

7.2. Conditions for safe storage, including incompatibilities

Technical measures	: Keep in a cool, well-ventilated place away from heat.
Storage conditions	: Keep only in the original container in a cool, well ventilated place away from : Keep container closed when not in use.
Storage area	: Store in a dry area. Ventilation at floor level. Protect against frost. Meet the legal requirements.
Incompatible products	: Strong bases. Strong acids.
Incompatible materials	: Sources of ignition. Direct sunlight.
Information on mixed storage	: KEEP SUBSTANCE AWAY FROM: oxidizing agents.
Storage temperature	: 20 °C
Heat-ignition	: KEEP SUBSTANCE AWAY FROM: heat sources.
Special rules on packaging	: SPECIAL REQUIREMENTS: closing, correctly labelled. meet the legal requirements. Secure fragile packagings in solid containers.
Packaging materials	: SUITABLE MATERIAL: glass. Store always product in container of same material as original container.

SECTION 8 Exposure controls/personal protection

8.1. Control parameters

No additional information available

8.2. Appropriate engineering controls

Appropriate engineering controls	: Ensure good ventilation of the work station.
Environmental exposure controls	: Avoid release to the environment.

8.3. Individual protection measures, such as personal protective equipment

Personal protective equipment:

Avoid all unnecessary exposure.

Hand protection:
Gloves
Eye protection:
Safety glasses (EN 166). Safety glasses
Skin and body protection:
Protective clothing (EN 14605 or EN 13034)
Respiratory protection:
Respiratory protection not required in normal conditions

Personal protective equipment symbol(s):



Other information:

Do not eat, drink or smoke during use.

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SECTION 9 Physical and chemical properties

9.1. Basic physical and chemical properties

Physical state	: Liquid
Appearance	: Liquid.
Color	: Colorless
Odor	: Odourless
Odor threshold	: No data available
pH	: 6 (10 %)
Melting point	: Not applicable
Freezing point	: No data available
Boiling point	: No data available
Flash point	: 148 °C
Flammability (solid, gas)	: Not applicable. Non flammable.
Vapor pressure	: < 1.3 hPa (20 °C)
Relative vapor density at 20°C	: No data available
Relative density	: 1.1 (25 °C)
Density	: 1100 kg/m ³
Molecular mass	: 1227.52 g/mol
Solubility	: Soluble in water. Soluble in ethanol. Soluble in methanol. Soluble in propyleneglycol. Soluble in isopropanol. Soluble in ethyleneglycol. Water: complete
Partition coefficient n-octanol/water (Log Pow)	: No data available
Auto-ignition temperature	: No data available
Decomposition temperature	: No data available
Viscosity, kinematic	: 363.636 mm ² /s
Viscosity, dynamic	: 400 mPa·s (25 °C)
Explosion limits	: No data available
Particle characteristics	: Particle size : Not applicable (liquid)

9.2. Data relevant with regard to physical hazard classes (supplemental)

Other properties : Gas/vapour heavier than air at 20°C. Slightly volatile. Neutral reaction.

SECTION 10 Stability and reactivity

10.1. Reactivity

The product is non-reactive under normal conditions of use, storage and transport.

10.2. Chemical stability

Stable under normal conditions.

10.3. Possibility of hazardous reactions

No dangerous reactions known under normal conditions of use. Not established.

10.4. Conditions to avoid

None under recommended storage and handling conditions (see section 7). Direct sunlight. Extremely high or low temperatures.

10.5. Incompatible materials

Strong acids. Strong bases.

10.6. Hazardous decomposition products

Hazardous decomposition products. fume. Carbon monoxide. Carbon dioxide.

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SECTION 11 Toxicological information

11.1. Information on toxicological effects

Acute toxicity (oral)	: Not classified
Acute toxicity (dermal)	: Not classified
Acute toxicity (inhalation)	: Not classified
Skin corrosion/irritation	: Not classified pH: 6 (10 %)
Serious eye damage/irritation	: Not classified pH: 6 (10 %)
Respiratory or skin sensitization	: Not classified
Germ cell mutagenicity	: Not classified
Carcinogenicity	: Not classified
Reproductive toxicity	: Not classified
STOT-single exposure	: Not classified
STOT-repeated exposure	: Not classified
Aspiration hazard	: Not classified

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Viscosity, kinematic	363.636 mm ² /s

Potential Adverse human health effects and symptoms	: Slightly harmful by inhalation.
Symptoms/effects	: Not expected to present a significant hazard under anticipated conditions of normal use.
Symptoms/effects after inhalation	: None under normal conditions.
Symptoms/effects after skin contact	: Slight irritation.
Symptoms/effects after eye contact	: Slight irritation.
Symptoms/effects after ingestion	: None under normal conditions.

SECTION 12 Ecological information

12.1. Ecotoxicity

Ecology - general	: The product is not considered harmful to aquatic organisms or to cause long-term adverse effects in the environment.
Ecology - air	: Not included in the list of substances which may contribute to the greenhouse effect (IPCC). Not included in the list of fluorinated greenhouse gases (Regulation (EU) No 2024/573). Not classified as dangerous for the ozone layer (Regulation (EC) No 2024/590).
Ecology - water	: Slightly harmful to fishes. Mild water pollutant (surface water). Not harmful to bacteria. Insufficient data available on ecotoxicity.
Hazardous to the aquatic environment, short-term (acute)	: Not classified
Hazardous to the aquatic environment, long-term (chronic)	: Not classified

12.2. Persistence and degradability

TWEEN 20, conc=10%, aqueous solution	
Persistence and degradability	Readily biodegradable in water.

12.3. Bioaccumulative potential

TWEEN 20, conc=10%, aqueous solution	
Bioaccumulative potential	No bioaccumulation data available.

TWEEN 20, conc=10%, aqueous solution

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

12.4. Mobility in soil

No additional information available

12.5. Other adverse effects

Ozone : Not classified
Fluorinated greenhouse gases : No
Other information : Avoid release to the environment.

SECTION 13 Disposal considerations

Regional legislation (waste) : Disposal must be done according to official regulations.
Waste treatment methods : Waste treatment methods.
Sewage disposal recommendations : Disposal must be done according to official regulations.
Product/Packaging disposal recommendations : Remove waste in accordance with local and/or national regulations. Obtain the consent of pollution control authorities before discharging to wastewater treatment plants. Disposal must be done according to official regulations.
Additional information : Can be considered as non hazardous waste according to Directive 2008/98/EC, as amended by Regulation (EU) No 1357/2014 and Regulation (EU) No 2017/997. Do not re-use empty containers.
Ecological waste information : Avoid release to the environment.

SECTION 14 Transport information

In accordance with DOT / TDG / IATA

14.1. UN number

Not regulated for transport

14.2. UN Proper Shipping Name

Proper Shipping Name (DOT) : Not regulated
Proper Shipping Name (TDG) : Not applicable
Proper Shipping Name (IATA) : Not regulated

14.3. Transport hazard class(es)

DOT
Transport hazard class(es) (DOT) : Not regulated
TDG
Transport hazard class(es) (TDG) : Not applicable
IATA
Transport hazard class(es) (IATA) : Not regulated

14.4. Packing group

Packing group (DOT) : Not regulated
Packing group (TDG) : Not applicable
Packing group (IATA) : Not regulated

14.5. Environmental hazards

Other information : No supplementary information available.

TWEEN 20, conc=10%, aqueous solution

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

14.6. Transport in bulk

Not applicable

14.7. Special precautions for user

DOT

Not regulated

TDG

No data available

IATA

Not regulated

SECTION 15 Regulatory information

15.1. Federal regulations

Commercial status of components according to the United States Environmental Protection Agency's Toxic Substances Control Act (TSCA):

No data available

15.2. International regulations

CANADA

No additional information available

EU-Regulations

No additional information available

National regulations

No additional information available

15.3. State regulations

No additional information available

SECTION 16 Other information

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Revision date : 10/6/2025

Date of issue : 8/27/2015

Other information : None.

Abbreviations and acronyms	
ACGIH	American Conference of Government Industrial Hygienists
ADN	European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways
ADR	European Agreement concerning the International Carriage of Dangerous Goods by Road
ATE	Acute Toxicity Estimate
BCF	Bioconcentration factor
BLV	Biological limit value
BOD	Biochemical oxygen demand (BOD)
CAS-No.	Chemical Abstract Service number

TWEEN 20, conc=10%, aqueous solution

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Abbreviations and acronyms	
CLP	Classification Labelling Packaging Regulation; Regulation (EC) No 1272/2008
COD	Chemical oxygen demand (COD)
CSA	Chemical safety assessment
DMEL	Derived Minimal Effect level
DNEL	Derived-No Effect Level
EC-No.	European Community number
EC50	Median effective concentration
ED	Endocrine disruptor
EN	European Standard
EWC	European waste catalogue
IARC	International Agency for Research on Cancer
IATA	International Air Transport Association
IMDG	International Maritime Dangerous Goods
LC50	Median lethal concentration
LD50	Median lethal dose
LOAEL	Lowest Observed Adverse Effect Level
Log Kow	Partition coefficient n-octanol/water (Log Kow)
Log Pow	Partition coefficient n-octanol/water (Log Pow)
MAK	maximum workplace concentration
NOAEC	No-Observed Adverse Effect Concentration
NOAEL	No-Observed Adverse Effect Level
NOEC	No-Observed Effect Concentration
N.O.S.	Not Otherwise Specified
OECD	Organisation for Economic Co-operation and Development
OEL	Occupational Exposure Limit
OSHA	Occupational Safety & Health Administration
PBT	Persistent Bioaccumulative Toxic
PNEC	Predicted No-Effect Concentration
PPE	Personal protection equipment
RID	Regulations concerning the International Carriage of Dangerous Goods by Rail
SDS	Safety Data Sheet
STP	Sewage treatment plant
TF	Technical function
ThOD	Theoretical oxygen demand (ThOD)
TLM	Median Tolerance Limit
TWA	Time Weighted Average

TWEEN 20, conc=10%, aqueous solution

Safety Data Sheet

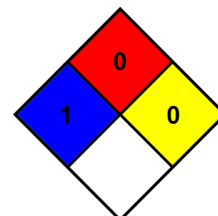
according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Abbreviations and acronyms	
VOC	Volatile Organic Compounds
vPvB	Very Persistent and Very Bioaccumulative
UFI	Unique Formula Identifier

NFPA health hazard : 1 - Materials that, under emergency conditions, can cause significant irritation.

NFPA fire hazard : 0 - Materials that will not burn under typical fire conditions, including intrinsically noncombustible materials such as concrete, stone, and sand.

NFPA reactivity : 0 - Material that in themselves are normally stable, even under fire conditions.



Safety Data Sheet (SDS), USA

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.



tertiary-octylphenoxypoly(ethoxyethanol)

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations
Date of issue: 6/15/2012 Revision date: 10/31/2025 Supersedes: 1/17/2025 Version: 11.0

SECTION 1 Identification

1.1. Product identifier

Product form : Substance
Substance name : tertiary-octylphenoxypoly(ethoxyethanol)
CAS-No. : 9036-19-5
Product code : 211T_210T
Formula : (C₂H₄O)_n.C₁₄H₂₂O
BIG No : 13845

1.2. Other means of identification

Synonyms : 2-methyl-2-propenoic acid, polymer with 2-propenoic acid and N-octyl-2-propenamide / alpha-((1,1,3,3-tetramethylbutyl)phenyl)omega-hydroxypoly(oxy-1,2-ethanediyl) / charger E / ethoxylated octylphenol / ethylan CP / glycols, polyethylene, mono((1,1,3,3-tetramethylbutyl)phenyl)ether / igepal CA / igepal CA210 / igepal CA520 / neutronyx 622 / neutronyx 675 / nonidet P40 / nonion HS206 / nonion HS208 / NP-40 / octoxylol-9 / octyl phenol condensed with 16 moles ethylene oxide / octyl phenol condensed with 20 moles ethylene oxide / octyl phenol condensed with 3 moles ethylene oxide / octyl phenol EO (16) / octyl phenol EO (3) / octylphenol polyethoxylate / octylphenoxypoly(ethoxyethanol) / octylphenoxypoly(ethyleneoxy)ethanol / OP 1062 / OPE-3 / poly(ethylene oxide)octylphenyl ether / poly(ethylene oxide)tertiary-octylphenyl ether / poly(oxy-1,2-ethanediyl), alpha-((1,1,3,3-tetramethylbutyl)phenyl)-omega-hydroxy- / poly(oxyethylene)octylphenol ether / poly(oxyethylene)tertiary-octylphenol ether / poly(oxyethylene)tertiary-octylphenyl ether / polyethyleneglycol octylphenyl ether / polyethyleneglycol tertiary-octylphenyl ether / polyethyleneglycolmono((1,1,3,3-tetramethylbutyl)phenyl)ether / polyethyleneglycolmono(octylphenyl)ether / polyoxyethylenemono-tertiary-octylphenyl ether / secopal OP 20 / synperonic OP / synperonic OP 10 / T 45 / T 45,polyglycol / tertiary-octylphenoxypoly(ethyleneoxy)ethanol / tertiary-octylphenoxypoly(oxyethylene)ethanol / tertiary-octylphenoxypolyethoxyethanol,nonionic,surfactant / tert-octylphenoxypoly(ethoxyethanol) / triton X 114 / triton X 15 / triton X 207

1.3. Recommended use of the chemical and restrictions on use

Use of the substance/mixture : Emulsifier,Detergent according to Regulation (EC) No 648/2004

1.4. Supplier's details

G-Biosciences/ Geno Technology, Inc.
9800 Page Avenue
St. Louis, MO 63132-1429, USA
Tel.1-800-628-7730
www.GBiosciences.com

1.5. Emergency phone number

Emergency number : Chemtrec **1-800-424-9300** (USA/Canada), **+1-703-527-3887** (Intl)

SECTION 2 Hazard Identification

2.1. Classification of the substance or mixture

GHS US classification

Not classified

tertiary-octylphenoxypoly(ethoxyethanol)

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2.2. Label elements

GHS US labeling

No labeling applicable

2.3. Hazards associated with known or reasonably anticipated uses

No additional information available

2.4. Hazards not otherwise classified

No additional information available

2.5. Unknown acute toxicity

No additional information available

tertiary-octylphenoxypoly(ethoxyethanol)

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SECTION 3 Composition/information on ingredients

3.1. Substances

tertiary-octylphenoxypoly(ethoxyethanol)

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Name	Common Name (Synonyms)	Product identifier	%	GHS US classification
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tertiary-octylphenoxypoly(ethoxyethanol)

Safety Data Sheet

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tertiary-octylphenoxypoly(ethoxyethanol) (Main constituent)	2-methyl-2-propenoic acid, polymer with 2-propenoic acid and N-octyl-2-propenamide / alpha((1,1,3,3-tetramethylbutyl)phenyl)omega-hydroxypoly(oxy-1,2-ethanediyl) / charger E / ethoxylated octylphenol / ethylan CP / glycols, polyethylene, mono((1,1,3,3-tetramethylbutyl)phenyl)ether / igePAL CA / igePAL CA210 / igePAL CA520 / neutronyx 622 / neutronyx 675 / nonidet P40 / nonion HS206 / nonion HS208 / NP-40 / octoxylol-9 / octyl phenol condensed with 16 moles ethylene oxide / octyl phenol condensed with 20 moles ethylene oxide / octyl phenol condensed with 3 moles ethylene oxide / octyl phenol EO (16) / octyl phenol EO (3) / octylphenol polyethoxylate / octylphenoxypoly(ethoxyethanol) / octylphenoxypoly(ethyleneoxy)ethanol) / OP 1062 / OPE-3 / poly(ethylene oxide)octylphenyl ether / poly(ethylene oxide)tertiary-octylphenyl ether /	CAS-No.: 9036-19-5	> 99	Not classified
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tertiary-octylphenoxypoly(ethoxyethanol)

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Name	Common Name (Synonyms)	Product identifier	%	GHS US classification
	poly(oxy-1,2-ethanediyl), alpha-((1,1,3,3-tetramethylbutyl)phenyl)-omega-hydroxy- / poly(oxyethylene) octylphenol ether / / poly(oxyethylene) tertiary-octylphenol ether / / poly(oxyethylene) tertiary-octylphenyl ether / polyethyleneglycol octylphenyl ether / / polyethyleneglycol tertiary-octylphenyl ether / polyethyleneglycol mono((1,1,3,3-tetramethylbutyl)phenyl)ether / polyethyleneglycol mono(octylphenyl) ether / polyoxyethylenemono-tertiary-octylphenyl ether / secopal OP 20 / synperonic OP / synperonic OP 10 / T 45 / T 45, polyglycol / tertiary-octylphenoxypoly(ethyleneoxy)ethanol / tertiary-octylphenoxypoly(oxyethylene)ethanol / tertiary-octylphenoxypolyethoxyethanol, nonionic, surfactant / tert-octylphenoxypoly(ethoxyethanol) / triton X 114 / triton X 15 / triton X 207			

Full text of hazard classes and H-statements : see section 16

tertiary-octylphenoxypoly(ethoxyethanol)

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3.2. Mixtures

Not applicable

SECTION 4 First aid measures

4.1. Description of necessary first-aid measures

First-aid measures general	: If you feel unwell, seek medical advice.
First-aid measures after inhalation	: Remove person to fresh air and keep comfortable for breathing. Allow affected person to breathe fresh air. Allow the victim to rest.
First-aid measures after skin contact	: Remove affected clothing and wash all exposed skin area with mild soap and water, followed by warm water rinse. Wash skin with plenty of water. Take off contaminated clothing. If skin irritation occurs: Get medical advice/attention.
First-aid measures after eye contact	: Rinse immediately with plenty of water. Obtain medical attention if pain, blinking or redness persists. Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.
First-aid measures after ingestion	: Rinse mouth. Do NOT induce vomiting. Obtain emergency medical attention. Call a poison center/doctor/physician if you feel unwell.
Self protection of the first-aider	: First aid workers will be equipped with suitable personal protective equipment.

4.2. Most important symptoms/effects, acute and delayed

Potential Adverse human health effects and symptoms	: Practically non-toxic if swallowed (LD50 oral, rat > 2000 mg/kg). Practically non-toxic in contact with skin (LD50 skin > 2000 mg/kg).
Symptoms/effects	: Not expected to present a significant hazard under anticipated conditions of normal use.
Symptoms/effects after inhalation	: No effects known.
Symptoms/effects after skin contact	: Irritation.
Symptoms/effects after eye contact	: No effects known.
Symptoms/effects after ingestion	: No effects known.
Chronic symptoms	: No effects known.

4.3. Indication of immediate medical attention and special treatment needed, if necessary

Other medical advice or treatment	: Treat symptomatically.
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SECTION 5: Fire-fighting measures

5.1. Suitable (and unsuitable) extinguishing media

Suitable extinguishing media	: Foam. Dry powder. Carbon dioxide. Water spray. Sand.
Unsuitable extinguishing media	: Water (quick-acting extinguisher, reel); risk of puddle expansion. Water; risk of puddle expansion.

5.2. Specific hazards arising from the chemical

Fire hazard	: DIRECT FIRE HAZARD: Not classified as flammable. INDIRECT FIRE HAZARD: Heating increases the fire hazard.
Explosion hazard	: No direct explosion hazard.
Hazardous decomposition products in case of fire	: Toxic fumes may be released.

5.3. Special protective equipment and precautions for fire-fighters

Precautionary measures fire	: Exposure to fire/heat: keep upwind. Exposure to fire/heat: seal off low-lying areas. Exposure to fire/heat: have neighbourhood close doors and windows.
Firefighting instructions	: Cool tanks/drums with water spray/remove them into safety.
Protection during firefighting	: Do not enter fire area without proper protective equipment, including respiratory protection. Do not attempt to take action without suitable protective equipment. Self-contained breathing apparatus. Complete protective clothing.

tertiary-octylphenoxypoly(ethoxyethanol)

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

SECTION 6 Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

General measures : Stop leak if safe to do so. Notify authorities if product enters sewers or public waters. Absorb spillage to prevent material-damage.

For non-emergency personnel

Protective equipment : Gloves (EN 374). Protective clothing (EN 14605 or EN 13034).
Emergency procedures : Ventilate spillage area. Evacuate unnecessary personnel. Avoid contact with skin and eyes.

For emergency responders

Protective equipment : Do not attempt to take action without suitable protective equipment. Equip cleanup crew with proper protection. For further information refer to section 8: "Exposure controls/personal protection".

Emergency procedures : Ventilate area. Evacuate unnecessary personnel. Stop leak if safe to do so.

Environmental precautions : Avoid release to the environment. Prevent entry to sewers and public waters. Notify authorities if liquid enters sewers or public waters.

6.2. Methods and materials for containment and cleaning up

For containment : Contain released product, collect/pump into suitable containers. Plug the leak, cut off the supply.

Methods for cleaning up : Take up liquid spill into absorbent material. Soak up spills with inert solids, such as clay or diatomaceous earth as soon as possible. Collect spillage. Store away from other materials.

Other information : Dispose of materials or solid residues at an authorized site.

See Heading 8. Exposure controls and personal protection. For further information refer to section 13.

SECTION 7 Handling and storage

7.1. Precautions for safe handling

Precautions for safe handling : Ensure good ventilation of the work station. Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work. Provide good ventilation in process area to prevent formation of vapor. Avoid contact with skin and eyes. Wear personal protective equipment.

Hygiene measures : Wash contaminated clothing before reuse. Do not eat, drink or smoke when using this product. Always wash hands after handling the product.

Additional hazards when processed : Not expected to present a significant hazard under anticipated conditions of normal use.

7.2. Conditions for safe storage, including incompatibilities

Technical measures : Keep in a cool, well-ventilated place away from heat.

Storage conditions : Store in a well-ventilated place. Keep cool. Keep only in the original container in a cool, well ventilated place away from : Keep container closed when not in use.

Storage area : Store in a cool area. Store in a dry area. Store in a dark area. Ventilation at floor level. May be stored under argon. Meet the legal requirements.

Incompatible products : Strong bases. Strong acids.

Incompatible materials : Sources of ignition. Direct sunlight.

Information on mixed storage : KEEP SUBSTANCE AWAY FROM: oxidizing agents. reducing agents. (strong) bases. water/moisture.

Heat-ignition : KEEP SUBSTANCE AWAY FROM: heat sources.

Special rules on packaging : SPECIAL REQUIREMENTS: closing. dry. correctly labelled. meet the legal requirements. Secure fragile packagings in solid containers.

Packaging materials : SUITABLE MATERIAL: steel with plastic inner lining.

tertiary-octylphenoxypoly(ethoxyethanol)

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according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

SECTION 8 Exposure controls/personal protection

8.1. Control parameters

No additional information available

8.2. Appropriate engineering controls

Appropriate engineering controls : Ensure good ventilation of the work station.
Environmental exposure controls : Avoid release to the environment.

8.3. Individual protection measures, such as personal protective equipment

Personal protective equipment:

Avoid all unnecessary exposure.

Materials for protective clothing:

Good resistance: rubber, plastics

Hand protection:

Gloves. Wear protective gloves.

Eye protection:

Chemical goggles or safety glasses. Safety glasses

Skin and body protection:

Protective clothing

Respiratory protection:

Mist formation: aerosol mask. Wear appropriate mask

Personal protective equipment symbol(s):



Other information:

Do not eat, drink or smoke during use.

SECTION 9 Physical and chemical properties

9.1. Basic physical and chemical properties

Physical state : Liquid
Appearance : Liquid.
Color : Light yellow
Odor : Almost odourless
Odor threshold : No data available
pH : 6 – 7.5 (1 %)
Melting point : Not applicable
Freezing point : No data available
Boiling point : > 177 °C
Flash point : > 110 °C
Relative evaporation rate (butyl acetate=1) : < 1
Flammability (solid, gas) : Not applicable. Non flammable.
Vapor pressure : No data available
Relative vapor density at 20°C : > 2

tertiary-octylphenoxypoly(ethoxyethanol)

Safety Data Sheet

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Relative density	: 1.05
Density	: 1050 kg/m ³
Solubility	: Soluble in water. Water: complete
Partition coefficient n-octanol/water (Log Pow)	: No data available
Auto-ignition temperature	: No data available
Decomposition temperature	: No data available
Viscosity, kinematic	: 371.429 mm ² /s
Viscosity, dynamic	: 390 mPa·s (20 °C)
Explosion limits	: No data available
Particle characteristics	: Particle size : Not applicable (liquid)

9.2. Data relevant with regard to physical hazard classes (supplemental)

VOC content	: 100 %
Other properties	: Gas/vapour heavier than air at 20°C. Clear. Hygroscopic. Slightly volatile.

SECTION 10 Stability and reactivity

10.1. Reactivity

The product is non-reactive under normal conditions of use, storage and transport.

10.2. Chemical stability

Hygroscopic.

10.3. Possibility of hazardous reactions

No dangerous reactions known under normal conditions of use. Not established.

10.4. Conditions to avoid

None under recommended storage and handling conditions (see section 7). Direct sunlight. Extremely high or low temperatures.

10.5. Incompatible materials

Strong acids. Strong bases.

10.6. Hazardous decomposition products

Hazardous decomposition products. fume. Carbon monoxide. Carbon dioxide.

SECTION 11 Toxicological information

11.1. Information on toxicological effects

Acute toxicity (oral)	: Not classified
Acute toxicity (dermal)	: Not classified
Acute toxicity (inhalation)	: Not classified

tertiary-octylphenoxypoly(ethoxyethanol) (9036-19-5)

LD50 oral rat	4190 mg/kg (Rat, Oral)
LD50 dermal rabbit	> 3000 mg/kg (Rabbit, Dermal)
ATE US (oral)	4190 mg/kg body weight
Skin corrosion/irritation	: Not classified pH: 6 – 7.5 (1 %)
Serious eye damage/irritation	: Not classified pH: 6 – 7.5 (1 %)

tertiary-octylphenoxypoly(ethoxyethanol)

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Respiratory or skin sensitization	: Not classified
Germ cell mutagenicity	: Not classified
Carcinogenicity	: Not classified
Reproductive toxicity	: Not classified
STOT-single exposure	: Not classified
STOT-repeated exposure	: Not classified
Aspiration hazard	: Not classified

tertiary-octylphenoxypoly(ethoxyethanol) (9036-19-5)

Viscosity, kinematic	371.429 mm ² /s
Potential Adverse human health effects and symptoms	: Practically non-toxic if swallowed (LD50 oral, rat > 2000 mg/kg). Practically non-toxic in contact with skin (LD50 skin > 2000 mg/kg).
Symptoms/effects	: Not expected to present a significant hazard under anticipated conditions of normal use.
Symptoms/effects after inhalation	: No effects known.
Symptoms/effects after skin contact	: Irritation.
Symptoms/effects after eye contact	: No effects known.
Symptoms/effects after ingestion	: No effects known.
Chronic symptoms	: No effects known.

SECTION 12 Ecological information

12.1. Ecotoxicity

Ecology - general	: The product is not considered harmful to aquatic organisms or to cause long-term adverse effects in the environment.
Ecology - air	: Not included in the list of substances which may contribute to the greenhouse effect (IPCC). Not included in the list of fluorinated greenhouse gases (Regulation (EU) No 2024/573). Not classified as dangerous for the ozone layer (Regulation (EC) No 2024/590).
Ecology - water	: Mild water pollutant (surface water). Insufficient data available on ecotoxicity.
Hazardous to the aquatic environment, short-term (acute)	: Not classified
Hazardous to the aquatic environment, long-term (chronic)	: Not classified

tertiary-octylphenoxypoly(ethoxyethanol) (9036-19-5)

LC50 - Fish [1]	7.2 mg/l
EC50 96h - Algae [1]	0.21 mg/l

12.2. Persistence and degradability

tertiary-octylphenoxypoly(ethoxyethanol) (9036-19-5)

Persistence and degradability	Biodegradability in water: no data available.
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12.3. Bioaccumulative potential

tertiary-octylphenoxypoly(ethoxyethanol) (9036-19-5)

Bioaccumulative potential	No bioaccumulation data available.
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12.4. Mobility in soil

No additional information available

12.5. Other adverse effects

Ozone	: Not classified
Fluorinated greenhouse gases	: No

tertiary-octylphenoxypoly(ethoxyethanol)

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Other information : Avoid release to the environment.

SECTION 13 Disposal considerations

Regional legislation (waste) : Disposal must be done according to official regulations.
Waste treatment methods : Waste treatment methods.
Sewage disposal recommendations : Disposal must be done according to official regulations.
Product/Packaging disposal recommendations : Remove waste in accordance with local and/or national regulations. Hazardous waste shall not be mixed together with other waste. Different types of hazardous waste shall not be mixed together if this may entail a risk of pollution or create problems for the further management of the waste. Hazardous waste shall be managed responsibly. All entities that store, transport or handle hazardous waste shall take the necessary measures to prevent risks of pollution or damage to people or animals. Remove to an authorized incinerator equipped with an afterburner and a flue gas scrubber with energy recovery.
Additional information : Hazardous waste according to Directive 2008/98/EC, as amended by Regulation (EU) No 1357/2014 and Regulation (EU) No 2017/997.
Ecological waste information : Avoid release to the environment.

SECTION 14 Transport information

In accordance with DOT / TDG / IATA

14.1. UN number

UN-No. (DOT) : Not applicable
UN-No. (TDG) : Not applicable
UN-No. (IATA) : Not regulated

14.2. UN Proper Shipping Name

Proper Shipping Name (DOT) : Not applicable
Proper Shipping Name (TDG) : Not applicable
Proper Shipping Name (IATA) : Not regulated

14.3. Transport hazard class(es)

DOT
Transport hazard class(es) (DOT) : Not applicable

TDG
Transport hazard class(es) (TDG) : Not applicable

IATA
Transport hazard class(es) (IATA) : Not regulated

14.4. Packing group

Packing group (DOT) : Not applicable
Packing group (TDG) : Not applicable
Packing group (IATA) : Not regulated

14.5. Environmental hazards

Other information : No supplementary information available.

14.6. Transport in bulk

Not applicable

tertiary-octylphenoxypoly(ethoxyethanol)

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

14.7. Special precautions for user

DOT

Not applicable

TDG

No data available

IATA

Not regulated

SECTION 15 Regulatory information

15.1. Federal regulations

Commercial status of components according to the United States Environmental Protection Agency's Toxic Substances Control Act (TSCA):

Name	CAS-No.	Listing	Commercial status	Flags
tertiary-octylphenoxypoly(ethoxyethanol)	9036-19-5	Not present	-	

15.2. International regulations

CANADA

No additional information available

EU-Regulations

No additional information available

National regulations

No additional information available

15.3. State regulations

No additional information available

SECTION 16 Other information

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Revision date : 10/31/2025

Date of issue : 6/15/2012

Other information : None.

Abbreviations and acronyms

ACGIH	American Conference of Government Industrial Hygienists
ADN	European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways
ADR	European Agreement concerning the International Carriage of Dangerous Goods by Road
ATE	Acute Toxicity Estimate
BCF	Bioconcentration factor
BLV	Biological limit value
BOD	Biochemical oxygen demand (BOD)
CAS-No.	Chemical Abstract Service number
CLP	Classification Labelling Packaging Regulation; Regulation (EC) No 1272/2008

tertiary-octylphenoxypoly(ethoxyethanol)

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Abbreviations and acronyms	
COD	Chemical oxygen demand (COD)
CSA	Chemical safety assessment
DMEL	Derived Minimal Effect level
DNEL	Derived-No Effect Level
EC-No.	European Community number
EC50	Median effective concentration
ED	Endocrine disruptor
EN	European Standard
EWC	European waste catalogue
IARC	International Agency for Research on Cancer
IATA	International Air Transport Association
IMDG	International Maritime Dangerous Goods
LC50	Median lethal concentration
LD50	Median lethal dose
LOAEL	Lowest Observed Adverse Effect Level
Log Kow	Partition coefficient n-octanol/water (Log Kow)
Log Pow	Partition coefficient n-octanol/water (Log Pow)
MAK	maximum workplace concentration
NOAEC	No-Observed Adverse Effect Concentration
NOAEL	No-Observed Adverse Effect Level
NOEC	No-Observed Effect Concentration
N.O.S.	Not Otherwise Specified
OECD	Organisation for Economic Co-operation and Development
OEL	Occupational Exposure Limit
OSHA	Occupational Safety & Health Administration
PBT	Persistent Bioaccumulative Toxic
PNEC	Predicted No-Effect Concentration
PPE	Personal protection equipment
RID	Regulations concerning the International Carriage of Dangerous Goods by Rail
SDS	Safety Data Sheet
STP	Sewage treatment plant
TF	Technical function
ThOD	Theoretical oxygen demand (ThOD)
TLM	Median Tolerance Limit
TWA	Time Weighted Average
VOC	Volatile Organic Compounds

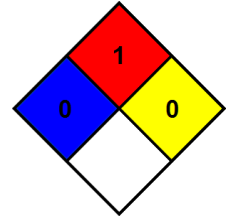
tertiary-octylphenoxypoly(ethoxyethanol)

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Abbreviations and acronyms	
vPvB	Very Persistent and Very Bioaccumulative
UFI	Unique Formula Identifier

NFPA health hazard : 0 - Materials that, under emergency conditions, would offer no hazard beyond that of ordinary combustible materials.
NFPA fire hazard : 1 - Materials that must be preheated before ignition can occur.
NFPA reactivity : 0 - Material that in themselves are normally stable, even under fire conditions.



Safety Data Sheet (SDS), USA

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.



Brij 58 (10% purified solution)

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations
Date of issue: 1/1/2017 Revision date: 10/31/2025 Supersedes: 1/17/2025 Version: 10.0

SECTION 1 Identification

1.1. Product identifier

Product form : Mixture
Product name : Brij 58 (10% purified solution)
CAS-No. : 9004-95-9
Product code : 206B
Formula : (C18H38O2)_n
BIG No : 19868

1.2. Other means of identification

Synonyms : brij 58 / polyoxyethylene(20)cetyl ether
EC-No. : 500-014-1

1.3. Recommended use of the chemical and restrictions on use

Use of the substance/mixture : Non-ionic surfactant

1.4. Supplier's details

G-Biosciences/ Geno Technology, Inc.
9800 Page Avenue
St. Louis, MO 63132-1429, USA
Tel.1-800-628-7730
www.GBiosciences.com

1.5. Emergency phone number

Emergency number : Chemtrec **1-800-424-9300** (USA/Canada), **+1-703-527-3887** (Intl)

SECTION 2 Hazard Identification

2.1. Classification of the substance or mixture

GHS US classification

Serious eye damage/eye irritation, Category 1 H318 Causes serious eye damage.
Full text of H statements : see section 16

2.2. Label elements

GHS US labeling

Hazard pictograms (GHS US) :



Signal word (GHS US) : Danger
Hazard statements (GHS US) : H318 - Causes serious eye damage
Precautionary statements (GHS US) : P280 - Wear protective gloves, protective clothing, eye protection, face protection, and hearing protection.
P305+P351+P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P310 - Immediately call a poison center or doctor.

Brij 58 (10% purified solution)

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

2.3. Hazards associated with known or reasonably anticipated uses

No additional information available

2.4. Hazards not otherwise classified

No additional information available

2.5. Unknown acute toxicity

No additional information available

SECTION 3 Composition/information on ingredients

3.1. Substances

Not applicable

3.2. Mixtures

Name	Common Name (Synonyms)	Product identifier	%	GHS US classification
Brij 58	brij 58 / polyoxyethylene(20)cetyl ether	CAS-No.: 9004-95-9	10 – 50	Eye Dam. 1, H318

Full text of hazard classes and H-statements : see section 16

SECTION 4 First aid measures

4.1. Description of necessary first-aid measures

First-aid measures general	: Never give anything by mouth to an unconscious person. If you feel unwell, seek medical advice (show the label where possible).
First-aid measures after inhalation	: Remove person to fresh air and keep comfortable for breathing. Allow affected person to breathe fresh air. Allow the victim to rest.
First-aid measures after skin contact	: Remove affected clothing and wash all exposed skin area with mild soap and water, followed by warm water rinse. Wash skin with plenty of water.
First-aid measures after eye contact	: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a poison center or doctor/physician. Call a physician immediately.
First-aid measures after ingestion	: Rinse mouth. Do NOT induce vomiting. Obtain emergency medical attention. Call a poison center/doctor/physician if you feel unwell.
Self protection of the first-aider	: First aid workers will be equipped with suitable personal protective equipment.

4.2. Most important symptoms/effects, acute and delayed

Potential Adverse human health effects and symptoms	: Based on available data, the classification criteria are not met.
Symptoms/effects after inhalation	: None under normal conditions.
Symptoms/effects after skin contact	: None under normal conditions.
Symptoms/effects after eye contact	: Causes serious eye damage. Serious damage to eyes.
Symptoms/effects after ingestion	: None under normal conditions.
Chronic symptoms	: No effects known.

4.3. Indication of immediate medical attention and special treatment needed, if necessary

Other medical advice or treatment	: Treat symptomatically.
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Brij 58 (10% purified solution)

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

SECTION 5: Fire-fighting measures

5.1. Suitable (and unsuitable) extinguishing media

Suitable extinguishing media : Foam. Dry powder. Carbon dioxide. Water spray. Sand.
Unsuitable extinguishing media : Do not use a heavy water stream.

5.2. Specific hazards arising from the chemical

Fire hazard : No fire hazard.
Explosion hazard : No direct explosion hazard.
Hazardous decomposition products in case of fire : Toxic fumes may be released.

5.3. Special protective equipment and precautions for fire-fighters

Precautionary measures fire : Exposure to fire/heat: keep upwind. Exposure to fire/heat: have neighbourhood close doors and windows.
Firefighting instructions : Use water spray or fog for cooling exposed containers. Exercise caution when fighting any chemical fire. Prevent fire-fighting water from entering environment. Do not enter fire area without proper protective equipment, including respiratory protection.
Protection during firefighting : Do not enter fire area without proper protective equipment, including respiratory protection. Do not attempt to take action without suitable protective equipment. Self-contained breathing apparatus. Complete protective clothing.

SECTION 6 Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

General measures : Stop leak if safe to do so. Notify authorities if product enters sewers or public waters. Absorb spillage to prevent material-damage.

For non-emergency personnel

Protective equipment : Wear recommended personal protective equipment.
Emergency procedures : Ventilate spillage area. Evacuate unnecessary personnel. Avoid contact with skin and eyes.
Measures in case of dust release : In case of dust production: keep upwind. Dust production: have neighbourhood close doors and windows.

For emergency responders

Protective equipment : Do not attempt to take action without suitable protective equipment. Equip cleanup crew with proper protection. For further information refer to section 8: "Exposure controls/personal protection".
Emergency procedures : Ventilate area. Evacuate unnecessary personnel. Stop leak if safe to do so.
Environmental precautions : Avoid release to the environment. Prevent entry to sewers and public waters. Notify authorities if liquid enters sewers or public waters.

6.2. Methods and materials for containment and cleaning up

For containment : Absorb spilled material with sand or earth. Contain any spills with dikes or absorbents to prevent migration and entry into sewers or streams. Stop leak, if possible without risk.
Methods for cleaning up : Take up liquid spill into absorbent material. Soak up spills with inert solids, such as clay or diatomaceous earth as soon as possible. Collect spillage. Store away from other materials.
Other information : Dispose of materials or solid residues at an authorized site.

See Heading 8. Exposure controls and personal protection. For further information refer to section 13.

Brij 58 (10% purified solution)

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

SECTION 7 Handling and storage

7.1. Precautions for safe handling

Precautions for safe handling	: Ensure good ventilation of the work station. Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work. Provide good ventilation in process area to prevent formation of vapor. Avoid contact with skin and eyes. Wear personal protective equipment.
Hygiene measures	: Wash hands, forearms and face thoroughly after handling. Do not eat, drink or smoke when using this product. Always wash hands after handling the product.
Additional hazards when processed	: Not expected to present a significant hazard under anticipated conditions of normal use.

7.2. Conditions for safe storage, including incompatibilities

Technical measures	: Keep in a cool, well-ventilated place away from heat.
Storage conditions	: Store in a well-ventilated place. Keep cool. Keep only in the original container in a cool, well ventilated place away from : Keep container closed when not in use.
Storage area	: Meet the legal requirements. Store in a dry area.
Incompatible products	: Strong bases. Strong acids.
Incompatible materials	: Sources of ignition. Direct sunlight.
Information on mixed storage	: KEEP SUBSTANCE AWAY FROM: oxidizing agents. (strong) bases.
Heat-ignition	: KEEP SUBSTANCE AWAY FROM: heat sources. ignition sources.
Special rules on packaging	: SPECIAL REQUIREMENTS: closing, correctly labelled. meet the legal requirements. Secure fragile packagings in solid containers.
Packaging materials	: Store always product in container of same material as original container.

SECTION 8 Exposure controls/personal protection

8.1. Control parameters

No additional information available

8.2. Appropriate engineering controls

Appropriate engineering controls	: Ensure good ventilation of the work station.
Environmental exposure controls	: Avoid release to the environment.

8.3. Individual protection measures, such as personal protective equipment

Personal protective equipment:

Avoid all unnecessary exposure.

Materials for protective clothing:
Good resistance: rubber
Hand protection:
Protective gloves. Wear protective gloves.
Eye protection:
Chemical goggles or safety glasses. Safety glasses
Skin and body protection:
Wear suitable protective clothing
Respiratory protection:
In case of insufficient ventilation, wear suitable respiratory equipment. Wear appropriate mask

Brij 58 (10% purified solution)

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according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Personal protective equipment symbol(s):



Other information:

Do not eat, drink or smoke during use.

SECTION 9 Physical and chemical properties

9.1. Basic physical and chemical properties

Physical state	: Liquid
Appearance	: Solid.
Color	: Colorless
Odor	: characteristic
Odor threshold	: No data available
pH	: No data available
Melting point	: Not applicable
Freezing point	: No data available
Boiling point	: > 346 °C Atm. press.: 1013 mBar Decomposition: 'yes' Decomp. temp.: 346 °C
Flash point	: 150 °C (Closed cup)
Flammability (solid, gas)	: Not applicable. Non flammable.
Vapor pressure	: 0.00028 hPa (20 °C, Test data, EU Method A.4: Vapour Pressure)
Relative vapor density at 20°C	: Not applicable
Relative density	: 1
Density	: 1018 kg/m ³
Molecular mass	: 1123.5 g/mol Source: The Chemical Database, The Department of Chemistry at the University of Akron
Solubility	: Soluble in water. Soluble in ethanol. Soluble in ether. Water: soluble, Literature
Partition coefficient n-octanol/water (Log Pow)	: 7.7 (Calculated, 20 °C)
Auto-ignition temperature	: No data available
Decomposition temperature	: No data available
Viscosity, kinematic	: No data available
Explosion limits	: No data available
Particle characteristics	: No data available

9.2. Data relevant with regard to physical hazard classes (supplemental)

VOC content : 0 %

SECTION 10 Stability and reactivity

10.1. Reactivity

The product is non-reactive under normal conditions of use, storage and transport.

10.2. Chemical stability

Stable under normal conditions. Not established.

10.3. Possibility of hazardous reactions

No dangerous reactions known under normal conditions of use. Not established.

Brij 58 (10% purified solution)

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

10.4. Conditions to avoid

None under recommended storage and handling conditions (see section 7). Direct sunlight. Extremely high or low temperatures.

10.5. Incompatible materials

Strong acids. Strong bases.

10.6. Hazardous decomposition products

Hazardous decomposition products. fume. Carbon monoxide. Carbon dioxide.

SECTION 11 Toxicological information

11.1. Information on toxicological effects

Acute toxicity (oral) : Not classified

Acute toxicity (dermal) : Not classified

Acute toxicity (inhalation) : Not classified

Brij 58 (10% purified solution) (9004-95-9)

LD50 oral rat	2500 mg/kg Source: Corporate Solution From Thomson Micromedex
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ATE US (oral)	2500 mg/kg body weight
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Brij 58 (9004-95-9)

LD50 oral rat	2500 mg/kg Source: Corporate Solution From Thomson Micromedex
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LD50 oral	> 2000 mg/kg body weight Animal:
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Skin corrosion/irritation : Not classified

Serious eye damage/irritation : Causes serious eye damage.

Respiratory or skin sensitization : Not classified

Germ cell mutagenicity : Not classified

Carcinogenicity : Not classified

Reproductive toxicity : Not classified

STOT-single exposure : Not classified

STOT-repeated exposure : Not classified

Brij 58 (10% purified solution) (9004-95-9)

LOAEL (oral,rat,90 days)	1000 mg/kg body weight Animal: rat, Guideline: OECD Guideline 422 (Combined Repeated Dose Toxicity Study with the Reproduction / Developmental Toxicity Screening Test)
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Brij 58 (9004-95-9)

LOAEL (oral,rat,90 days)	1000 mg/kg body weight Animal: rat, Guideline: OECD Guideline 422 (Combined Repeated Dose Toxicity Study with the Reproduction / Developmental Toxicity Screening Test)
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Aspiration hazard : Not classified

Brij 58 (9004-95-9)

Viscosity, kinematic	Not applicable
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Potential Adverse human health effects and symptoms : Based on available data, the classification criteria are not met.

Symptoms/effects after inhalation : None under normal conditions.

Symptoms/effects after skin contact : None under normal conditions.

Symptoms/effects after eye contact : Causes serious eye damage. Serious damage to eyes.

Symptoms/effects after ingestion : None under normal conditions.

Chronic symptoms : No effects known.

Brij 58 (10% purified solution)

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

SECTION 12 Ecological information

12.1. Ecotoxicity

Ecology - general	: The product is not considered harmful to aquatic organisms or to cause long-term adverse effects in the environment.
Ecology - air	: Not included in the list of substances which may contribute to the greenhouse effect (IPCC). Not included in the list of fluorinated greenhouse gases (Regulation (EU) No 2024/573). Photooxidation in the air. Not classified as dangerous for the ozone layer (Regulation (EC) No 2024/590).
Ecology - water	: Harmful to crustacea (Daphnia). Slightly harmful to fishes. Slightly harmful to algae.
Hazardous to the aquatic environment, short-term (acute)	: Not classified
Hazardous to the aquatic environment, long-term (chronic)	: Not classified

Brij 58 (10% purified solution) (9004-95-9)	
LC50 - Fish [1]	108 mg/l (Equivalent or similar to OECD 203, 96 h, Danio rerio, Semi-static system, Fresh water, Experimental value, Nominal concentration)
EC50 - Other aquatic organisms [1]	0.125 – 40 mg/l Test organisms (species):
ErC50 algae	> 100 mg/l (EU Method C.3, 72 h, Desmodesmus subspicatus, Static system, Fresh water, Experimental value, Nominal concentration)

Brij 58 (9004-95-9)	
LC50 - Fish [1]	108 mg/l (Equivalent or similar to OECD 203, 96 h, Danio rerio, Semi-static system, Fresh water, Experimental value, Nominal concentration)
EC50 - Other aquatic organisms [1]	0.125 – 40 mg/l Test organisms (species):
ErC50 algae	> 100 mg/l (EU Method C.3, 72 h, Desmodesmus subspicatus, Static system, Fresh water, Experimental value, Nominal concentration)

12.2. Persistence and degradability

Brij 58 (10% purified solution) (9004-95-9)	
Persistence and degradability	Not established.

Brij 58 (9004-95-9)	
Persistence and degradability	Not established.

12.3. Bioaccumulative potential

Brij 58 (10% purified solution) (9004-95-9)	
BCF - Fish [1]	387.5 l/kg (72 h, Pimephales promelas, Flow-through system, Fresh water, Experimental value)
Partition coefficient n-octanol/water (Log Pow)	7.7 (Calculated, 20 °C)
Bioaccumulative potential	Not established.

Brij 58 (9004-95-9)	
BCF - Fish [1]	387.5 l/kg (72 h, Pimephales promelas, Flow-through system, Fresh water, Experimental value)
Partition coefficient n-octanol/water (Log Pow)	7.7 (Calculated, 20 °C)
Bioaccumulative potential	Not established.

Brij 58 (10% purified solution)

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12.4. Mobility in soil

Brij 58 (10% purified solution) (9004-95-9)

Organic Carbon Normalized Adsorption Coefficient (Log Koc)	3.4 – 5.1 (log Koc, SRC PCKOCWIN v2.0, QSAR)
Ecology - soil	Low potential for mobility in soil.

Brij 58 (9004-95-9)

Organic Carbon Normalized Adsorption Coefficient (Log Koc)	3.4 – 5.1 (log Koc, SRC PCKOCWIN v2.0, QSAR)
Ecology - soil	Low potential for mobility in soil.

12.5. Other adverse effects

Ozone	: Not classified
Fluorinated greenhouse gases	: No
Other information	: Avoid release to the environment.

SECTION 13 Disposal considerations

Regional legislation (waste)	: Disposal must be done according to official regulations.
Waste treatment methods	: Waste treatment methods.
Sewage disposal recommendations	: Disposal must be done according to official regulations.
Product/Packaging disposal recommendations	: Dispose in a safe manner in accordance with local/national regulations. Disposal must be done according to official regulations.
Additional information	: Do not re-use empty containers.
Ecological waste information	: Avoid release to the environment.

SECTION 14 Transport information

In accordance with DOT / TDG / IATA

14.1. UN number

Not regulated for transport

14.2. UN Proper Shipping Name

Proper Shipping Name (DOT)	: Not regulated
Proper Shipping Name (TDG)	: Not applicable
Proper Shipping Name (IATA)	: Not regulated

14.3. Transport hazard class(es)

DOT Transport hazard class(es) (DOT)	: Not regulated
TDG Transport hazard class(es) (TDG)	: Not applicable
IATA Transport hazard class(es) (IATA)	: Not regulated

14.4. Packing group

Packing group (DOT)	: Not regulated
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Brij 58 (10% purified solution)

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Packing group (TDG) : Not applicable
Packing group (IATA) : Not regulated

14.5. Environmental hazards

Other information : No supplementary information available.

14.6. Transport in bulk

Not applicable

14.7. Special precautions for user

DOT

Not regulated

TDG

No data available

IATA

Not regulated

SECTION 15 Regulatory information

15.1. Federal regulations

Commercial status of components according to the United States Environmental Protection Agency's Toxic Substances Control Act (TSCA):

Name	CAS-No.	Listing	Commercial status	Flags
Brij 58	9004-95-9	Not present	-	

15.2. International regulations

CANADA

No additional information available

EU-Regulations

No additional information available

National regulations

No additional information available

15.3. State regulations

No additional information available

SECTION 16 Other information

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Revision date : 10/31/2025
Date of issue : 1/1/2017
Other information : None.

Full text of hazard classes and H-statements

H318	Causes serious eye damage
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Brij 58 (10% purified solution)

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Abbreviations and acronyms	
ACGIH	American Conference of Government Industrial Hygienists
ADN	European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways
ADR	European Agreement concerning the International Carriage of Dangerous Goods by Road
ATE	Acute Toxicity Estimate
BCF	Bioconcentration factor
BLV	Biological limit value
BOD	Biochemical oxygen demand (BOD)
CAS-No.	Chemical Abstract Service number
CLP	Classification Labelling Packaging Regulation; Regulation (EC) No 1272/2008
COD	Chemical oxygen demand (COD)
CSA	Chemical safety assessment
DMEL	Derived Minimal Effect level
DNEL	Derived-No Effect Level
EC-No.	European Community number
EC50	Median effective concentration
ED	Endocrine disruptor
EN	European Standard
EWC	European waste catalogue
IARC	International Agency for Research on Cancer
IATA	International Air Transport Association
IMDG	International Maritime Dangerous Goods
LC50	Median lethal concentration
LD50	Median lethal dose
LOAEL	Lowest Observed Adverse Effect Level
Log Kow	Partition coefficient n-octanol/water (Log Kow)
Log Pow	Partition coefficient n-octanol/water (Log Pow)
MAK	maximum workplace concentration
NOAEC	No-Observed Adverse Effect Concentration
NOAEL	No-Observed Adverse Effect Level
NOEC	No-Observed Effect Concentration
N.O.S.	Not Otherwise Specified
OECD	Organisation for Economic Co-operation and Development
OEL	Occupational Exposure Limit
OSHA	Occupational Safety & Health Administration
PBT	Persistent Bioaccumulative Toxic
PNEC	Predicted No-Effect Concentration

Brij 58 (10% purified solution)

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Abbreviations and acronyms	
PPE	Personal protection equipment
RID	Regulations concerning the International Carriage of Dangerous Goods by Rail
SDS	Safety Data Sheet
STP	Sewage treatment plant
TF	Technical function
ThOD	Theoretical oxygen demand (ThOD)
TLM	Median Tolerance Limit
TWA	Time Weighted Average
VOC	Volatile Organic Compounds
vPvB	Very Persistent and Very Bioaccumulative
UFI	Unique Formula Identifier

NFPA health hazard

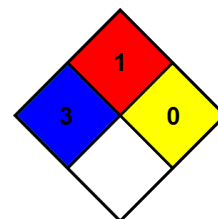
: 3 - Materials that, under emergency conditions, can cause serious or permanent injury.

NFPA fire hazard

: 1 - Materials that must be preheated before ignition can occur.

NFPA reactivity

: 0 - Material that in themselves are normally stable, even under fire conditions.



Safety Data Sheet (SDS), USA

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.



Triton X-100 Substitute (10% purified solution)

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations
Date of issue: 11/10/2015 Revision date: 11/13/2025 Supersedes: 10/31/2025 Version: 13.0

SECTION 1 Identification

1.1. Product identifier

Product form : Substance
Substance name : Triton X-100 Substitute (10% purified solution)
Product code : 203T
Formula : C34H62O12
BIG No : 18801

1.2. Other means of identification

Synonyms : 2-[4-(2,4,4-trimethylpentan-2-yl)phenoxy]ethanol / 4(1,1,3,3-tetramethylbutyl)phenyl polyethylene glycol / poly(oxy-1,2-ethanediyl), alpha-(4-(1,1,3,3-tetramethylbutyl)phenyl)-omega-hydroxy- / polyethylene glycol tert-octylphenyl ether / tert-octylphenoxy polyethoxyethanol / TRITON X-100

1.3. Recommended use of the chemical and restrictions on use

Use of the substance/mixture : Surfactant

1.4. Supplier's details

G-Biosciences/ Geno Technology, Inc.
9800 Page Avenue
St. Louis, MO 63132-1429, USA
Tel.1-800-628-7730
www.GBiosciences.com

1.5. Emergency phone number

Emergency number : Chemtrec **1-800-424-9300** (USA/Canada), **+1-703-527-3887** (Intl)

SECTION 2 Hazard Identification

2.1. Classification of the substance or mixture

GHS US classification

Acute toxicity (oral), Category 4	H302	Harmful if swallowed.
Serious eye damage/eye irritation, Category 2	H319	Causes serious eye irritation.
Hazardous to the aquatic environment — Chronic Hazard, Category 3	H412	Harmful to aquatic life with long lasting effects.

Full text of H statements : see section 16

2.2. Label elements

GHS US labeling

Hazard pictograms (GHS US) :



Signal word (GHS US) :

Warning

Hazard statements (GHS US) :

H302 - Harmful if swallowed
H319 - Causes serious eye irritation
H412 - Harmful to aquatic life with long lasting effects

Precautionary statements (GHS US) :

P264 - Wash hands, forearms and face thoroughly after handling.
P270 - Do not eat, drink or smoke when using this product.
P273 - Avoid release to the environment.
P280 - Wear protective gloves, protective clothing, eye protection, face protection, and hearing

Triton X-100 Substitute (10% purified solution)

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

protection.

P301+P312 - If swallowed: Call a poison center or doctor if you feel unwell.

P305+P351+P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P330 - Rinse mouth.

P337+P313 - If eye irritation persists: Get medical advice or attention.

P501 - Dispose of contents and/or container to hazardous or special waste collection point, in accordance with local, regional, national and/or international regulations.

2.3. Hazards associated with known or reasonably anticipated uses

No additional information available

2.4. Hazards not otherwise classified

No additional information available

2.5. Unknown acute toxicity

No additional information available

SECTION 3 Composition/information on ingredients

3.1. Substances

Substance type : Polymer
Name : Triton X-100 Substitute (10% purified solution)

Name	Common Name (Synonyms)	Product identifier	%	GHS US classification
AQUA		CAS-No.: 7732-18-5	≥ 80	Not classified
polyethyleneglycol para-(1,1,3,3-tetramethylbutyl)phenyl ether	2-[4-(2,4,4-trimethylpentan-2-yl)phenoxy]ethanol / 4(1,1,3,3-tetramethylbutyl)phenyl polyethylene glycol / poly(oxy-1,2-ethanediyl), alpha-(4-(1,1,3,3-tetramethylbutyl)phenyl)-omega-hydroxy- / polyethylene glycol tert-octylphenyl ether / tert-octylphenoxy polyethoxyethanol / TRITON X-100	CAS-No.: 9002-93-1	10 – 50	Acute Tox. 4 (Oral), H302 Eye Irrit. 2, H319 Aquatic Chronic 2, H411

Full text of hazard classes and H-statements : see section 16

3.2. Mixtures

Not applicable

Triton X-100 Substitute (10% purified solution)

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

SECTION 4 First aid measures

4.1. Description of necessary first-aid measures

First-aid measures general	: Never give anything by mouth to an unconscious person. If you feel unwell, seek medical advice (show the label where possible). Call a poison center/doctor/physician if you feel unwell.
First-aid measures after inhalation	: Remove person to fresh air and keep comfortable for breathing. Allow affected person to breathe fresh air. Allow the victim to rest.
First-aid measures after skin contact	: Remove affected clothing and wash all exposed skin area with mild soap and water, followed by warm water rinse. Wash skin with plenty of water.
First-aid measures after eye contact	: Rinse immediately with plenty of water. Obtain medical attention if pain, blinking or redness persists. Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.
First-aid measures after ingestion	: Do NOT induce vomiting. Obtain emergency medical attention. Call a POISON CENTER or doctor/physician if you feel unwell. Rinse mouth. Call a poison center/doctor/physician if you feel unwell.
Self protection of the first-aider	: First aid workers will be equipped with suitable personal protective equipment.

4.2. Most important symptoms/effects, acute and delayed

Potential Adverse human health effects and symptoms	: Harmful if swallowed. Non-toxic in contact with skin (LD50 skin > 5000 mg/kg). Causes serious eye irritation.
Symptoms/effects after inhalation	: No effects known.
Symptoms/effects after skin contact	: No effects known.
Symptoms/effects after eye contact	: Eye irritation.
Symptoms/effects after ingestion	: Harmful if swallowed.
Chronic symptoms	: No effects known.

4.3. Indication of immediate medical attention and special treatment needed, if necessary

Other medical advice or treatment	: Treat symptomatically.
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SECTION 5: Fire-fighting measures

5.1. Suitable (and unsuitable) extinguishing media

Suitable extinguishing media	: Sand. Water spray. Dry powder. Foam. Carbon dioxide.
Unsuitable extinguishing media	: Water (quick-acting extinguisher, reel); risk of puddle expansion. Water; risk of puddle expansion.

5.2. Specific hazards arising from the chemical

Fire hazard	: DIRECT FIRE HAZARD: Not classified as flammable. INDIRECT FIRE HAZARD: Heating increases the fire hazard.
Explosion hazard	: No direct explosion hazard.
Hazardous decomposition products in case of fire	: Toxic fumes may be released.

5.3. Special protective equipment and precautions for fire-fighters

Precautionary measures fire	: Exposure to fire/heat: keep upwind. Exposure to fire/heat: seal off low-lying areas. Exposure to fire/heat: have neighbourhood close doors and windows.
Firefighting instructions	: Fight fire from safe distance and protected location. Do not enter fire area without proper protective equipment, including respiratory protection.
Protection during firefighting	: Do not enter fire area without proper protective equipment, including respiratory protection. Do not attempt to take action without suitable protective equipment. Self-contained breathing apparatus. Complete protective clothing.

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SECTION 6 Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

General measures : Stop leak if safe to do so. Notify authorities if product enters sewers or public waters. Absorb spillage to prevent material-damage.

For non-emergency personnel

Protective equipment : Gloves (EN 374). Safety glasses (EN 166). Protective clothing (EN 14605 or EN 13034).
Emergency procedures : Ventilate spillage area. Evacuate unnecessary personnel. Avoid contact with skin and eyes.

For emergency responders

Protective equipment : Do not attempt to take action without suitable protective equipment. Equip cleanup crew with proper protection. For further information refer to section 8: "Exposure controls/personal protection".

Emergency procedures : Ventilate area. Evacuate unnecessary personnel. Stop leak if safe to do so.

Environmental precautions : Avoid release to the environment. Prevent entry to sewers and public waters. Notify authorities if liquid enters sewers or public waters.

6.2. Methods and materials for containment and cleaning up

For containment : Absorb spilled material with sand or earth. Contain any spills with dikes or absorbents to prevent migration and entry into sewers or streams. Stop leak, if possible without risk. Collect spillage.

Methods for cleaning up : Take up liquid spill into absorbent material. Soak up spills with inert solids, such as clay or diatomaceous earth as soon as possible. Collect spillage. Store away from other materials.

Other information : Dispose of materials or solid residues at an authorized site.

See Heading 8. Exposure controls and personal protection. For further information refer to section 13.

SECTION 7 Handling and storage

7.1. Precautions for safe handling

Precautions for safe handling : Ensure good ventilation of the work station. Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work. Provide good ventilation in process area to prevent formation of vapor. Avoid contact with skin and eyes. Wear personal protective equipment.

Hygiene measures : Wash hands, forearms and face thoroughly after handling. Do not eat, drink or smoke when using this product. Always wash hands after handling the product.

Additional hazards when processed : Not expected to present a significant hazard under anticipated conditions of normal use.

7.2. Conditions for safe storage, including incompatibilities

Technical measures : Keep in a cool, well-ventilated place away from heat.

Storage conditions : Keep only in the original container in a cool, well ventilated place away from : Keep container closed when not in use.

Storage area : Meet the legal requirements. Provide for a tub to collect spills.

Incompatible products : Strong bases. Strong acids.

Incompatible materials : Sources of ignition. Direct sunlight.

Information on mixed storage : KEEP SUBSTANCE AWAY FROM: oxidizing agents. reducing agents. (strong) acids. (strong) bases.

Storage temperature : 2 – 8 °C

Heat-ignition : KEEP SUBSTANCE AWAY FROM: heat sources.

Special rules on packaging : SPECIAL REQUIREMENTS: closing, correctly labelled. meet the legal requirements. Secure fragile packagings in solid containers.

Packaging materials : Store always product in container of same material as original container.

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SECTION 8 Exposure controls/personal protection

8.1. Control parameters

No additional information available

8.2. Appropriate engineering controls

Appropriate engineering controls : Ensure good ventilation of the work station.
Environmental exposure controls : Avoid release to the environment.

8.3. Individual protection measures, such as personal protective equipment

Personal protective equipment:

Avoid all unnecessary exposure.

Materials for protective clothing:
Excellent resistance: Nitrile rubber
Hand protection:
Wear protective gloves.
Eye protection:
Chemical goggles or safety glasses. Safety glasses
Skin and body protection:
Wear suitable protective clothing
Respiratory protection:
Wear appropriate mask

Personal protective equipment symbol(s):



Other information:

Do not eat, drink or smoke during use.

SECTION 9 Physical and chemical properties

9.1. Basic physical and chemical properties

Physical state	: Liquid
Appearance	: Liquid.
Color	: Light yellow
Odor	: Mild odour
Odor threshold	: No data available
pH	: 9.7
Melting point	: Not applicable
Freezing point	: No data available
Boiling point	: > 200 °C
Flash point	: 251 °C (Closed cup)
Relative evaporation rate (butyl acetate=1)	: < 1
Flammability (solid, gas)	: Not applicable. Non flammable.
Vapor pressure	: < 1.33 hPa (20 °C)
Relative vapor density at 20°C	: > 1

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Relative density	: 1.007
Density	: 1007 kg/m ³
Molecular mass	: 646.37 g/mol
Solubility	: Soluble in water. Soluble in ethanol. Soluble in acetone. Soluble in aromatic hydrocarbons. Water: complete
Partition coefficient n-octanol/water (Log Pow)	: 4.86 (Estimated value, KOWWIN)
Auto-ignition temperature	: No data available in the literature
Decomposition temperature	: No data available in the literature
Viscosity, kinematic	: No data available in the literature
Viscosity, dynamic	: No data available in the literature
Explosion limits	: No data available
Explosive properties	: Not classified.
Oxidizing properties	: Not classified.
Particle characteristics	: Particle size : Not applicable (liquid)

9.2. Data relevant with regard to physical hazard classes (supplemental)

VOC content	: 100 %
Other properties	: Gas/vapour heavier than air at 20°C. Clear. Slightly volatile. Basic reaction.

SECTION 10 Stability and reactivity

10.1. Reactivity

Reacts with (strong) oxidizers and with (strong) reducers.

10.2. Chemical stability

Stable under normal conditions.

10.3. Possibility of hazardous reactions

No dangerous reactions known under normal conditions of use. Not established.

10.4. Conditions to avoid

None under recommended storage and handling conditions (see section 7). Direct sunlight. Extremely high or low temperatures.

10.5. Incompatible materials

Strong acids. Strong bases.

10.6. Hazardous decomposition products

Hazardous decomposition products. fume. Carbon monoxide. Carbon dioxide.

SECTION 11 Toxicological information

11.1. Information on toxicological effects

Acute toxicity (oral)	: Harmful if swallowed.
Acute toxicity (dermal)	: Not classified
Acute toxicity (inhalation)	: Not classified

Triton X-100 Substitute (10% purified solution)	
LD50 oral rat	1800 mg/kg (Rat, Literature study, Oral)
LD50 dermal rabbit	8000 mg/kg (Rabbit, Literature study, Dermal)
ATE US (oral)	500 mg/kg body weight

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polyethyleneglycol para-(1,1,3,3-tetramethylbutyl)phenyl ether (9002-93-1)	
LD50 oral rat	1800 mg/kg (Rat, Literature study, Oral)
LD50 dermal rabbit	8000 mg/kg (Rabbit, Literature study, Dermal)
ATE US (oral)	1800 mg/kg body weight
ATE US (dermal)	8000 mg/kg body weight

Skin corrosion/irritation : Not classified
pH: 9.7

polyethyleneglycol para-(1,1,3,3-tetramethylbutyl)phenyl ether (9002-93-1)	
pH	9.7

Serious eye damage/irritation : Causes serious eye irritation.
pH: 9.7

polyethyleneglycol para-(1,1,3,3-tetramethylbutyl)phenyl ether (9002-93-1)	
pH	9.7

Respiratory or skin sensitization : Not classified
Germ cell mutagenicity : Not classified
Carcinogenicity : Not classified
Reproductive toxicity : Not classified
STOT-single exposure : Not classified
STOT-repeated exposure : Not classified
Aspiration hazard : Not classified

Triton X-100 Substitute (10% purified solution)	
Viscosity, kinematic	No data available in the literature

polyethyleneglycol para-(1,1,3,3-tetramethylbutyl)phenyl ether (9002-93-1)	
Viscosity, kinematic	No data available in the literature

Potential Adverse human health effects and symptoms : Harmful if swallowed. Non-toxic in contact with skin (LD50 skin > 5000 mg/kg). Causes serious eye irritation.
Symptoms/effects after inhalation : No effects known.
Symptoms/effects after skin contact : No effects known.
Symptoms/effects after eye contact : Eye irritation.
Symptoms/effects after ingestion : Harmful if swallowed.
Chronic symptoms : No effects known.

SECTION 12 Ecological information

12.1. Ecotoxicity

Ecology - general : The product is not considered harmful to aquatic organisms or to cause long-term adverse effects in the environment. Harmful to aquatic life with long lasting effects. Toxic to aquatic life with long lasting effects.

Ecology - air : Not included in the list of substances which may contribute to the greenhouse effect (IPCC). Not included in the list of fluorinated greenhouse gases (Regulation (EU) No 2024/573). Not classified as dangerous for the ozone layer (Regulation (EC) No 2024/590).

Ecology - water : Harmful to crustacea (Daphnia). Toxic to fishes. pH shift.

Hazardous to the aquatic environment, short-term (acute) : Not classified

Hazardous to the aquatic environment, long-term (chronic) : Harmful to aquatic life with long lasting effects.

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Triton X-100 Substitute (10% purified solution)	
LC50 - Fish [1]	8.9 mg/l (96 h, Pimephales promelas, Literature study)
EC50 - Crustacea [1]	26 mg/l (48 h, Daphnia magna, Literature study)
polyethyleneglycol para-(1,1,3,3-tetramethylbutyl)phenyl ether (9002-93-1)	
LC50 - Fish [1]	8.9 mg/l (96 h, Pimephales promelas, Literature study)
EC50 - Crustacea [1]	26 mg/l (48 h, Daphnia magna, Literature study)

12.2. Persistence and degradability

Triton X-100 Substitute (10% purified solution)	
Persistence and degradability	Not readily biodegradable in water.
Chemical oxygen demand (COD)	2.19 mg/g
ThOD	2.16 g O ₂ /g substance
polyethyleneglycol para-(1,1,3,3-tetramethylbutyl)phenyl ether (9002-93-1)	
Persistence and degradability	May cause long-term adverse effects in the environment.
Chemical oxygen demand (COD)	2.19 mg/g
ThOD	2.16 g O ₂ /g substance
AQUA (7732-18-5)	
Persistence and degradability	Not established.

12.3. Bioaccumulative potential

Triton X-100 Substitute (10% purified solution)	
Partition coefficient n-octanol/water (Log Pow)	4.86 (Estimated value, KOWWIN)
Bioaccumulative potential	Potential for bioaccumulation ($4 \leq \text{Log Kow} \leq 5$).
polyethyleneglycol para-(1,1,3,3-tetramethylbutyl)phenyl ether (9002-93-1)	
Partition coefficient n-octanol/water (Log Pow)	4.86 (Estimated value, KOWWIN)
Bioaccumulative potential	Not established.
AQUA (7732-18-5)	
Bioaccumulative potential	Not established.

12.4. Mobility in soil

Triton X-100 Substitute (10% purified solution)	
Ecology - soil	No (test)data on mobility of the substance available.
polyethyleneglycol para-(1,1,3,3-tetramethylbutyl)phenyl ether (9002-93-1)	
Ecology - soil	No (test)data on mobility of the substance available.

12.5. Other adverse effects

Ozone	: Not classified
Fluorinated greenhouse gases	: No
Other information	: Avoid release to the environment.

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SECTION 13 Disposal considerations

Regional legislation (waste)	: Disposal must be done according to official regulations.
Waste treatment methods	: Waste treatment methods.
Sewage disposal recommendations	: Disposal must be done according to official regulations.
Product/Packaging disposal recommendations	: Disposal must be done according to official regulations.
Additional information	: Do not re-use empty containers.
Ecological waste information	: Avoid release to the environment.

SECTION 14 Transport information

In accordance with DOT / TDG / IATA

IATA: Special provision(s) applied : A197

14.1. UN number

UN-No. (DOT)	: UN3082
UN-No. (TDG)	: UN3082
UN-No. (IATA)	: 3082

14.2. UN Proper Shipping Name

Proper Shipping Name (DOT)	: Environmentally hazardous substances, liquid, n.o.s.
Proper Shipping Name (TDG)	: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.
Proper Shipping Name (IATA)	: Environmentally hazardous substance, liquid, n.o.s.

14.3. Transport hazard class(es)

DOT

Transport hazard class(es) (DOT)	: 9
Hazard labels (DOT)	: 9



TDG

Transport hazard class(es) (TDG)	: 9
Hazard labels (TDG)	: 9



IATA

Transport hazard class(es) (IATA)	: 9
Hazard labels (IATA)	: 9



14.4. Packing group

Packing group (DOT)	: III
Packing group (TDG)	: III
Packing group (IATA)	: III

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14.5. Environmental hazards

Other information : No supplementary information available.

14.6. Transport in bulk

Not applicable

14.7. Special precautions for user

DOT

UN-No. (DOT) : UN3082

DOT Special Provisions (49 CFR 172.102) : 8 - A hazardous substance that is not a hazardous waste may be shipped under the shipping description "Other regulated substances, liquid or solid, n.o.s.", as appropriate. In addition, for solid materials, special provision B54 applies.

146 - This description may be used for a material that poses a hazard to the environment but does not meet the definition for a hazardous waste or a hazardous substance, as defined in 171.8 of this subchapter, or any hazard class as defined in Part 173 of this subchapter, if it is designated as environmentally hazardous by the Competent Authority of the country of origin, transit or destination.

173 - An appropriate generic entry may be used for this material.

335 - Mixtures of solids that are not subject to this subchapter and environmentally hazardous liquids or solids may be classified as "Environmentally hazardous substances, solid, n.o.s.," UN3077 and may be transported under this entry, provided there is no free liquid visible at the time the material is loaded or at the time the packaging or transport unit is closed. Each transport unit must be leak-proof when used as bulk packaging.

IB3 - Authorized IBCs: Metal (31A, 31B and 31N); Rigid plastics (31H1 and 31H2); Composite (31HZ1 and 31HA2, 31HB2, 31HN2, 31HD2 and 31HH2). Additional Requirement: Only liquids with a vapor pressure less than or equal to 110 kPa at 50 C (1.1 bar at 122 F), or 130 kPa at 55 C (1.3 bar at 131 F) are authorized, except for UN2672 (also see Special Provision IP8 in Table 2 for UN2672).

T4 - 2.65 178.274(d)(2) Normal..... 178.275(d)(3)

TP1 - The maximum degree of filling must not exceed the degree of filling determined by the following: Degree of filling = $97 / 1 + a (tr - tf)$ Where: tr is the maximum mean bulk temperature during transport, and tf is the temperature in degrees celsius of the liquid during filling.

TP29 - A portable tank having a minimum test pressure of 1.5 bar (150.0 kPa) may be used provided the calculated test pressure is 1.5 bar or less based on the MAWP of the hazardous materials, as defined in 178.275 of this subchapter, where the test pressure is 1.5 times the MAWP.

DOT Packaging Exceptions (49 CFR 173.xxx) : 155

DOT Packaging Non Bulk (49 CFR 173.xxx) : 203

DOT Packaging Bulk (49 CFR 173.xxx) : 241

DOT Quantity Limitations Passenger aircraft/rail (49 CFR 173.27) : No Limit

DOT Quantity Limitations Cargo aircraft only (49 CFR 175.75) : No Limit

DOT Vessel Stowage Location : A - The material may be stowed "on deck" or "under deck" on a cargo vessel and on a passenger vessel.

TDG

UN-No. (TDG) : UN3082

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TDG Special Provisions	: 16 - (1) The technical name of at least one of the most dangerous substances that predominantly contributes to the hazard or hazards posed by the dangerous goods must be shown, in parentheses, on the shipping document following the shipping name in accordance with clause 3.5(1)(c)(ii)(A) of Part 3 (Documentation). The technical name must also be shown, in parentheses, on a small means of containment or on a tag following the shipping name in accordance with subsections 4.11(2) and (3) of Part 4 (Dangerous Goods Safety Marks). (2) Despite subsection (1), the technical name for the following dangerous goods is not required to be shown on a shipping document or on a small means of containment when Canadian law for domestic transport or an international convention for international transport prohibits the disclosure of the technical name: (a) UN1544, ALKALOID SALTS, SOLID, N.O.S. or ALKALOIDS, SOLID, N.O.S; (b) UN1851, MEDICINE, LIQUID, TOXIC, N.O.S; (c) UN3140, ALKALOID SALTS, LIQUID, N.O.S. or ALKALOIDS, LIQUID, N.O.S; (d) UN3248, MEDICINE, LIQUID, FLAMMABLE, TOXIC, N.O.S; or (e) UN3249, MEDICINE, SOLID, TOXIC, N.O.S. (3) Despite subsection (1), the technical name for the following dangerous goods is not required to be shown on a small means of containment: (a) UN2814, INFECTIOUS SUBSTANCE, AFFECTING HUMANS; or (b) UN2900, INFECTIOUS SUBSTANCE, AFFECTING ANIMALS, 99 - (1) Mixtures of solids that are not dangerous goods and liquids or solids that are UN3077, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S, or UN3082, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S, may be handled, offered for transport or transported as UN3077 if there is no visible liquid when the dangerous goods are loaded into a means containment and during transport. (2) These Regulations, except for Part 1 (Coming into Force, Repeal, Interpretation, General Provisions and Special Cases) and Part 2 (Classification), do not apply to the handling, offering for transport or transporting of less than 450 kg of UN3077, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S, or less than 450 L of UN3082, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S, on a road vehicle or a railway vehicle. The dangerous goods must be contained in one or more small means of containment designed, constructed, filled, closed, secured and maintained so that under normal conditions of transport, including handling, there will be no accidental release of the dangerous goods that could endanger public safety.
Explosive Limit and Limited Quantity Index	: 5 L
Excepted quantities (TDG)	: E1
Emergency Response Guide (ERG) Number	: 171

IATA

Special provision (IATA)	: A97, A158, A197, A215
Transport regulations (IATA)	: Subject to the provisions
PCA Excepted quantities (IATA)	: E1
PCA Limited quantities (IATA)	: Y964
PCA limited quantity max net quantity (IATA)	: 30kgG
PCA packing instructions (IATA)	: 964
PCA max net quantity (IATA)	: 450L
CAO packing instructions (IATA)	: 964
CAO max net quantity (IATA)	: 450L
ERG code (IATA)	: 9L

SECTION 15 Regulatory information

15.1. Federal regulations

Commercial status of components according to the United States Environmental Protection Agency's Toxic Substances Control Act (TSCA):

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Name	CAS-No.	Listing	Commercial status	Flags
polyethyleneglycol para-(1,1,3,3-tetramethylbutyl)phenyl ether	9002-93-1	Not present	-	XU
AQUA	7732-18-5	Not present	-	

15.2. International regulations

CANADA

No additional information available

EU-Regulations

No additional information available

National regulations

No additional information available

15.3. State regulations

No additional information available

SECTION 16 Other information

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Revision date : 11/13/2025
Date of issue : 11/10/2015
Other information : None.

Full text of hazard classes and H-statements	
H302	Harmful if swallowed
H319	Causes serious eye irritation
H411	Toxic to aquatic life with long lasting effects
H412	Harmful to aquatic life with long lasting effects

Abbreviations and acronyms	
ACGIH	American Conference of Government Industrial Hygienists
ADN	European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways
ADR	European Agreement concerning the International Carriage of Dangerous Goods by Road
ATE	Acute Toxicity Estimate
BCF	Bioconcentration factor
BLV	Biological limit value
BOD	Biochemical oxygen demand (BOD)
CAS-No.	Chemical Abstract Service number
CLP	Classification Labelling Packaging Regulation; Regulation (EC) No 1272/2008
COD	Chemical oxygen demand (COD)
CSA	Chemical safety assessment
DMEL	Derived Minimal Effect level

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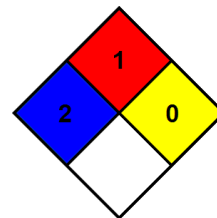
Abbreviations and acronyms	
DNEL	Derived-No Effect Level
EC-No.	European Community number
EC50	Median effective concentration
ED	Endocrine disruptor
EN	European Standard
EWC	European waste catalogue
IARC	International Agency for Research on Cancer
IATA	International Air Transport Association
IMDG	International Maritime Dangerous Goods
LC50	Median lethal concentration
LD50	Median lethal dose
LOAEL	Lowest Observed Adverse Effect Level
Log Kow	Partition coefficient n-octanol/water (Log Kow)
Log Pow	Partition coefficient n-octanol/water (Log Pow)
MAK	maximum workplace concentration
NOAEC	No-Observed Adverse Effect Concentration
NOAEL	No-Observed Adverse Effect Level
NOEC	No-Observed Effect Concentration
N.O.S.	Not Otherwise Specified
OECD	Organisation for Economic Co-operation and Development
OEL	Occupational Exposure Limit
OSHA	Occupational Safety & Health Administration
PBT	Persistent Bioaccumulative Toxic
PNEC	Predicted No-Effect Concentration
PPE	Personal protection equipment
RID	Regulations concerning the International Carriage of Dangerous Goods by Rail
SDS	Safety Data Sheet
STP	Sewage treatment plant
TF	Technical function
ThOD	Theoretical oxygen demand (ThOD)
TLM	Median Tolerance Limit
TWA	Time Weighted Average
VOC	Volatile Organic Compounds
vPvB	Very Persistent and Very Bioaccumulative
UFI	Unique Formula Identifier

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NFPA health hazard : 2 - Materials that, under emergency conditions, can cause temporary incapacitation or residual injury.
NFPA fire hazard : 1 - Materials that must be preheated before ignition can occur.
NFPA reactivity : 0 - Material that in themselves are normally stable, even under fire conditions.



Safety Data Sheet (SDS), USA

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.



Brij 35 (10% purified solution)

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations
Date of issue: 6/3/2013 Revision date: 10/31/2025 Supersedes: 1/17/2025 Version: 11.0

SECTION 1 Identification

1.1. Product identifier

Product form : Mixture
Product name : Brij 35 (10% purified solution)
CAS-No. : 9002-92-0
Product code : 200B
Formula : C58H118O24
BIG No : 15709

1.2. Other means of identification

Synonyms : alpha-dodecyl-omega-hydroxypoly(oxy-1,2-ethanediyl)(=polyoxyethylene(23)lauryl ether) / atlas g-2135 / brij 35(=polyoxyethylene(23)lauryl ether) / brij 35SP / dodecan-1-ol, ethoxylated / dodecan-1-ol, ethoxylated (=polyoxyethylene(23)lauryl ether) / dodecanol ethoxylate(23) / dodecanol ethoxylated(23) / dodecyl alcohol condensed with 23 moles ethylene oxide / dodecyl alcohol ethoxylated(23) / ethoxylated(23)dodecanol / ethoxylated(23)lauryl alcohol / lauryl alcohol condensed with 23 moles ethylene oxide / lauryl alcohol eo(23) / lauryl alcohol ethoxylated(23) / poly(oxy-1,2-ethanediyl), alpha-dodecyl-omega-hydroxy-(=polyoxyethylene(23)lauryl ether) / poly(oxyethyl)(23)dodecyl ether / poly(oxyethyl)(23)lauryl ether / polyethylene(23)glycoldodecyl ether

EC-No. : 500-002-6

1.3. Recommended use of the chemical and restrictions on use

Use of the substance/mixture : Non-ionic surfactant

1.4. Supplier's details

G-Biosciences/ Geno Technology, Inc.
9800 Page Avenue
St. Louis, MO 63132-1429, USA
Tel.1-800-628-7730
www.GBiosciences.com

1.5. Emergency phone number

Emergency number : Chemtrec **1-800-424-9300** (USA/Canada), **+1-703-527-3887** (Intl)

SECTION 2 Hazard Identification

2.1. Classification of the substance or mixture

GHS US classification

Acute toxicity (oral), Category 4	H302	Harmful if swallowed.
Serious eye damage/eye irritation, Category 2	H319	Causes serious eye irritation.
Full text of H statements : see section 16		

2.2. Label elements

GHS US labeling

Hazard pictograms (GHS US) :



Signal word (GHS US) : Warning

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Hazard statements (GHS US)	: H302 - Harmful if swallowed H319 - Causes serious eye irritation
Precautionary statements (GHS US)	: P264 - Wash hands, forearms and face thoroughly after handling. P270 - Do not eat, drink or smoke when using this product. P280 - Wear protective gloves, protective clothing, eye protection, face protection, and hearing protection. P301+P312 - If swallowed: Call a poison center or doctor if you feel unwell. P305+P351+P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. P330 - Rinse mouth. P337+P313 - If eye irritation persists: Get medical advice or attention. P501 - Dispose of contents and/or container to hazardous or special waste collection point, in accordance with local, regional, national and/or international regulations.

2.3. Hazards associated with known or reasonably anticipated uses

No additional information available

2.4. Hazards not otherwise classified

No additional information available

2.5. Unknown acute toxicity

No additional information available

SECTION 3 Composition/information on ingredients

3.1. Substances

Not applicable

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3.2. Mixtures

Name	Common Name (Synonyms)	Product identifier	%	GHS US classification
polyoxyethylene(23)lauryl ether	alpha-dodecyl-omega-hydroxypoly(oxy-1,2-ethanediyl)(=polyoxyethylene(23)lauryl ether) / atlas g-2135 / brij 35(=polyoxyethylene(23)lauryl ether) / brij 35SP / dodecan-1-ol, ethoxylated / dodecan-1-ol, ethoxylated (=polyoxyethylene(23)lauryl ether) / dodecanol ethoxylate(23) / dodecanol ethoxylated(23) / dodecyl alcohol condensed with 23 moles ethylene oxide / dodecyl alcohol ethoxylated(23) / ethoxylated(23)dodecanol / ethoxylated(23)lauryl alcohol / lauryl alcohol condensed with 23 moles ethylene oxide / lauryl alcohol eo(23) / lauryl alcohol ethoxylated(23) / poly(oxy-1,2-ethanediyl), alpha-dodecyl-omega-hydroxy-(=polyoxyethylene(23)lauryl ether) / poly(oxyethyl)(23) dodecyl ether / poly(oxyethyl)(23) lauryl ether / polyethylene(23)glycoldodecyl ether	CAS-No.: 9002-92-0	10 – 50	Acute Tox. 4 (Oral), H302 Eye Irrit. 2, H319 Aquatic Chronic 3, H412

Full text of hazard classes and H-statements : see section 16

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SECTION 4 First aid measures

4.1. Description of necessary first-aid measures

First-aid measures general	: Never give anything by mouth to an unconscious person. If you feel unwell, seek medical advice (show the label where possible). Call a poison center/doctor/physician if you feel unwell.
First-aid measures after inhalation	: Remove person to fresh air and keep comfortable for breathing. Allow affected person to breathe fresh air. Allow the victim to rest.
First-aid measures after skin contact	: Remove affected clothing and wash all exposed skin area with mild soap and water, followed by warm water rinse. Wash skin with plenty of water.
First-aid measures after eye contact	: Rinse immediately with plenty of water. Obtain medical attention if pain, blinking or redness persists. Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.
First-aid measures after ingestion	: Rinse mouth. Do NOT induce vomiting. Obtain emergency medical attention. Call a POISON CENTER or doctor/physician if you feel unwell. Call a poison center/doctor/physician if you feel unwell.
Self protection of the first-aider	: First aid workers will be equipped with suitable personal protective equipment.

4.2. Most important symptoms/effects, acute and delayed

Potential Adverse human health effects and symptoms	: Based on available data, the classification criteria are not met. Harmful if swallowed.
Symptoms/effects after inhalation	: No effects known.
Symptoms/effects after skin contact	: No effects known.
Symptoms/effects after eye contact	: Eye irritation.
Symptoms/effects after ingestion	: Swallowing a small quantity of this material will result in serious health hazard. Harmful if swallowed.
Chronic symptoms	: No effects known.

4.3. Indication of immediate medical attention and special treatment needed, if necessary

Other medical advice or treatment	: Treat symptomatically.
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SECTION 5: Fire-fighting measures

5.1. Suitable (and unsuitable) extinguishing media

Suitable extinguishing media	: Foam. Dry powder. Carbon dioxide. Water spray. Sand.
Unsuitable extinguishing media	: Do not use a heavy water stream.

5.2. Specific hazards arising from the chemical

Fire hazard	: DIRECT FIRE HAZARD: Combustible.
Explosion hazard	: No direct explosion hazard.
Hazardous decomposition products in case of fire	: Toxic fumes may be released.

5.3. Special protective equipment and precautions for fire-fighters

Precautionary measures fire	: Exposure to fire/heat: keep upwind. Exposure to fire/heat: have neighbourhood close doors and windows.
Firefighting instructions	: Use water spray or fog for cooling exposed containers. Exercise caution when fighting any chemical fire. Prevent fire-fighting water from entering environment. Do not enter fire area without proper protective equipment, including respiratory protection.
Protection during firefighting	: Do not enter fire area without proper protective equipment, including respiratory protection. Do not attempt to take action without suitable protective equipment. Self-contained breathing apparatus. Complete protective clothing.

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SECTION 6 Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

General measures : Stop leak if safe to do so. Notify authorities if product enters sewers or public waters. Absorb spillage to prevent material-damage.

For non-emergency personnel

Protective equipment : Gloves (EN 374). Protective clothing (EN 14605 or EN 13034). Dust cloud production: self-contained breathing apparatus (EN 136 + EN 137).

Emergency procedures : Ventilate spillage area. Evacuate unnecessary personnel. Avoid contact with skin and eyes.

Measures in case of dust release : In case of dust production: keep upwind. Dust production: have neighbourhood close doors and windows.

For emergency responders

Protective equipment : Do not attempt to take action without suitable protective equipment. Equip cleanup crew with proper protection. For further information refer to section 8: "Exposure controls/personal protection".

Emergency procedures : Ventilate area. Evacuate unnecessary personnel. Stop leak if safe to do so.

Environmental precautions : Avoid release to the environment. Prevent entry to sewers and public waters. Notify authorities if liquid enters sewers or public waters.

6.2. Methods and materials for containment and cleaning up

For containment : Collect spillage. Contain any spills with dikes or absorbents to prevent migration and entry into sewers or streams. Stop leak, if possible without risk.

Methods for cleaning up : Take up liquid spill into absorbent material. Soak up spills with inert solids, such as clay or diatomaceous earth as soon as possible. Collect spillage. Store away from other materials.

Other information : Dispose of materials or solid residues at an authorized site.

See Heading 8. Exposure controls and personal protection. For further information refer to section 13.

SECTION 7 Handling and storage

7.1. Precautions for safe handling

Precautions for safe handling : Ensure good ventilation of the work station. Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work. Provide good ventilation in process area to prevent formation of vapor. Avoid contact with skin and eyes. Wear personal protective equipment.

Hygiene measures : Do not eat, drink or smoke when using this product. Wash hands, forearms and face thoroughly after handling. Always wash hands after handling the product.

Additional hazards when processed : Not expected to present a significant hazard under anticipated conditions of normal use.

7.2. Conditions for safe storage, including incompatibilities

Technical measures : Keep in a cool, well-ventilated place away from heat.

Storage conditions : Store in a well-ventilated place. Keep cool. Keep only in the original container in a cool, well ventilated place away from : Keep container closed when not in use.

Storage area : Store in a dry area. Keep container in a well-ventilated place. Meet the legal requirements.

Incompatible products : Strong bases. Strong acids.

Incompatible materials : Sources of ignition. Direct sunlight.

Information on mixed storage : KEEP SUBSTANCE AWAY FROM: oxidizing agents. (strong) bases.

Heat-ignition : KEEP SUBSTANCE AWAY FROM: heat sources.

Special rules on packaging : SPECIAL REQUIREMENTS: closing. dry. correctly labelled. meet the legal requirements. Secure fragile packagings in solid containers.

Packaging materials : Store always product in container of same material as original container.

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SECTION 8 Exposure controls/personal protection

8.1. Control parameters

No additional information available

8.2. Appropriate engineering controls

Appropriate engineering controls : Ensure good ventilation of the work station.
Environmental exposure controls : Avoid release to the environment.

8.3. Individual protection measures, such as personal protective equipment

Personal protective equipment:

Avoid all unnecessary exposure.

Materials for protective clothing:

Good resistance: rubber

Hand protection:

Wear protective gloves.

Eye protection:

Chemical goggles or safety glasses. Safety glasses

Skin and body protection:

Wear suitable protective clothing

Respiratory protection:

In case of insufficient ventilation, wear suitable respiratory equipment. Wear appropriate mask

Personal protective equipment symbol(s):



Other information:

Do not eat, drink or smoke during use.

SECTION 9 Physical and chemical properties

9.1. Basic physical and chemical properties

Physical state : Liquid
Appearance : Liquid.
Color : Colourless
Odor : characteristic
Odor threshold : No data available
pH : 6.25 Temp.: 24,6 °C Concentration: 1 vol%
Melting point : Not applicable
Freezing point : No data available
Boiling point : > 100 °C
Flash point : 138 °C (995 hPa)
Flammability (solid, gas) : Not applicable. Non flammable.
Vapor pressure : 0.0000235 hPa (25 °C, MPBPWin v1.43, EpiSuite)
Relative vapor density at 20°C : Not applicable
Relative density : 1.05

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Density	: 905.9 kg/m ³ (20.2 °C, OECD 109: Density of Liquids and Solids)
Molecular mass	: 1199.57 g/mol
Solubility	: Moderately soluble in water. Soluble in ethanol. Soluble in propyleneglycol. Water: 4 g/100ml
Partition coefficient n-octanol/water (Log Pow)	: 2.26 (Experimental value, OECD 117: Partition Coefficient (n-octanol/water), HPLC method, 25 °C)
Auto-ignition temperature	: No data available
Decomposition temperature	: No data available
Viscosity, kinematic	: 102.159 mm ² /s (20 °C, OECD 114: Viscosity of Liquids)
Viscosity, dynamic	: 92.546 mPa·s (20 °C, OECD 114: Viscosity of Liquids)
Explosion limits	: No data available
Particle characteristics	: No data available

9.2. Data relevant with regard to physical hazard classes (supplemental)

VOC content	: 0 %
Other properties	: Clear.

SECTION 10 Stability and reactivity

10.1. Reactivity

The product is non-reactive under normal conditions of use, storage and transport.

10.2. Chemical stability

Not established.

10.3. Possibility of hazardous reactions

No dangerous reactions known under normal conditions of use. Not established.

10.4. Conditions to avoid

None under recommended storage and handling conditions (see section 7). Direct sunlight. Extremely high or low temperatures.

10.5. Incompatible materials

Strong acids. Strong bases.

10.6. Hazardous decomposition products

Hazardous decomposition products. fume. Carbon monoxide. Carbon dioxide.

SECTION 11 Toxicological information

11.1. Information on toxicological effects

Acute toxicity (oral)	: Harmful if swallowed.
Acute toxicity (dermal)	: Not classified
Acute toxicity (inhalation)	: Not classified

Brij 35 (10% purified solution) (9002-92-0)	
LD50 oral rat	1000 mg/kg body weight (OECD 423: Acute Oral Toxicity – Acute Toxic Class Method, Rat, Female, Experimental value, Oral, 14 day(s))
LD50 dermal rat	> 2000 mg/kg body weight (OECD 402: Acute Dermal Toxicity, 24 h, Rat, Male / female, Experimental value, Skin, 14 day(s))
ATE US (oral)	1000 mg/kg body weight

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polyoxyethylene(23)lauryl ether (9002-92-0)	
LD50 oral rat	1000 mg/kg body weight (OECD 423: Acute Oral Toxicity – Acute Toxic Class Method, Rat, Female, Experimental value, Oral, 14 day(s))
LD50 dermal rat	> 2000 mg/kg body weight (OECD 402: Acute Dermal Toxicity, 24 h, Rat, Male / female, Experimental value, Skin, 14 day(s))
ATE US (oral)	500 mg/kg body weight

Skin corrosion/irritation : Not classified
pH: 6.25 Temp.: 24,6 °C Concentration: 1 vol%

polyoxyethylene(23)lauryl ether (9002-92-0)	
pH	6.25 Temp.: 24,6 °C Concentration: 1 vol%

Serious eye damage/irritation : Causes serious eye irritation.
pH: 6.25 Temp.: 24,6 °C Concentration: 1 vol%

polyoxyethylene(23)lauryl ether (9002-92-0)	
pH	6.25 Temp.: 24,6 °C Concentration: 1 vol%

Respiratory or skin sensitization : Not classified
Germ cell mutagenicity : Not classified
Carcinogenicity : Not classified
Reproductive toxicity : Not classified
STOT-single exposure : Not classified
STOT-repeated exposure : Not classified

Brij 35 (10% purified solution) (9002-92-0)	
NOAEL (oral,rat,90 days)	500 mg/kg body weight Animal: rat, Guideline: OECD Guideline 408 (Repeated Dose 90-Day Oral Toxicity Study in Rodents)

polyoxyethylene(23)lauryl ether (9002-92-0)	
NOAEL (oral,rat,90 days)	500 mg/kg body weight Animal: rat, Guideline: OECD Guideline 408 (Repeated Dose 90-Day Oral Toxicity Study in Rodents)

Aspiration hazard : Not classified

Brij 35 (10% purified solution) (9002-92-0)	
Viscosity, kinematic	102.159 mm ² /s (20 °C, OECD 114: Viscosity of Liquids)

polyoxyethylene(23)lauryl ether (9002-92-0)	
Viscosity, kinematic	Not applicable

Potential Adverse human health effects and symptoms : Based on available data, the classification criteria are not met. Harmful if swallowed.
Symptoms/effects after inhalation : No effects known.
Symptoms/effects after skin contact : No effects known.
Symptoms/effects after eye contact : Eye irritation.
Symptoms/effects after ingestion : Swallowing a small quantity of this material will result in serious health hazard. Harmful if swallowed.
Chronic symptoms : No effects known.

SECTION 12 Ecological information

12.1. Ecotoxicity

Ecology - general : The product is not considered harmful to aquatic organisms or to cause long-term adverse effects in the environment. Very toxic to aquatic life.

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Ecology - air	: Not included in the list of substances which may contribute to the greenhouse effect (IPCC). Not included in the list of fluorinated greenhouse gases (Regulation (EU) No 2024/573). Not classified as dangerous for the ozone layer (Regulation (EC) No 2024/590).
Ecology - water	: Toxic to crustacea (Daphnia). Harmful to crustacea (Daphnia) with long lasting effects. Toxic to fishes. Harmful to fish, with long lasting effects. Toxic to algae. Harmful to algae, with long-term consequences.
Hazardous to the aquatic environment, short-term (acute)	: Not classified
Hazardous to the aquatic environment, long-term (chronic)	: Not classified

Brij 35 (10% purified solution) (9002-92-0)	
LC50 - Fish [1]	2.427 mg/l (OECD 203: Fish, Acute Toxicity Test, 96 h, Danio rerio, Semi-static system, Fresh water, Experimental value, Lethal)
EC50 - Crustacea [1]	9.131 mg/l (OECD 202: Daphnia sp. Acute Immobilisation Test, 48 h, Daphnia magna, Static system, Fresh water, Experimental value, Nominal concentration)
ErC50 algae	0.237 mg/l (OECD 201: Alga, Growth Inhibition Test, 72 h, Desmodesmus subspicatus, Static system, Fresh water, Experimental value)
EC50 72h - Algae [1]	2.737 mg/l Test organisms (species): Raphidocelis subcapitata (previous names: Pseudokirchneriella subcapitata, Selenastrum capricornutum)
EC50 72h - Algae [2]	1.225 mg/l Test organisms (species): Raphidocelis subcapitata (previous names: Pseudokirchneriella subcapitata, Selenastrum capricornutum)
NOEC (chronic)	0.144 mg/l Test organisms (species): Daphnia magna Duration: '21 d'
NOEC chronic fish	0.139 mg/l Test organisms (species): other: Duration: '28 d'
polyoxyethylene(23)lauryl ether (9002-92-0)	
LC50 - Fish [1]	2.427 mg/l (OECD 203: Fish, Acute Toxicity Test, 96 h, Danio rerio, Semi-static system, Fresh water, Experimental value, Lethal)
EC50 - Crustacea [1]	9.131 mg/l (OECD 202: Daphnia sp. Acute Immobilisation Test, 48 h, Daphnia magna, Static system, Fresh water, Experimental value, Nominal concentration)
EC50 72h - Algae [1]	2.737 mg/l Test organisms (species): Raphidocelis subcapitata (previous names: Pseudokirchneriella subcapitata, Selenastrum capricornutum)
EC50 72h - Algae [2]	1.225 mg/l Test organisms (species): Raphidocelis subcapitata (previous names: Pseudokirchneriella subcapitata, Selenastrum capricornutum)
ErC50 algae	0.237 mg/l (OECD 201: Alga, Growth Inhibition Test, 72 h, Desmodesmus subspicatus, Static system, Fresh water, Experimental value)
NOEC (chronic)	0.144 mg/l Test organisms (species): Daphnia magna Duration: '21 d'
NOEC chronic fish	0.139 mg/l Test organisms (species): other: Duration: '28 d'

12.2. Persistence and degradability

Brij 35 (10% purified solution) (9002-92-0)	
Persistence and degradability	Not established.
polyoxyethylene(23)lauryl ether (9002-92-0)	
Persistence and degradability	May cause long-term adverse effects in the environment.

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12.3. Bioaccumulative potential

Brij 35 (10% purified solution) (9002-92-0)

BCF - Fish [1]	81 l/kg (Pisces, Fresh water, Literature study, Fresh weight)
Partition coefficient n-octanol/water (Log Pow)	2.26 (Experimental value, OECD 117: Partition Coefficient (n-octanol/water), HPLC method, 25 °C)
Bioaccumulative potential	Not established.

polyoxyethylene(23)lauryl ether (9002-92-0)

BCF - Fish [1]	81 l/kg (Pisces, Fresh water, Literature study, Fresh weight)
Partition coefficient n-octanol/water (Log Pow)	2.26 (Experimental value, OECD 117: Partition Coefficient (n-octanol/water), HPLC method, 25 °C)
Bioaccumulative potential	Not established.

12.4. Mobility in soil

Brij 35 (10% purified solution) (9002-92-0)

Organic Carbon Normalized Adsorption Coefficient (Log Koc)	1.643 (log Koc, OECD 121: Estimation of the Adsorption Coefficient (Koc) on Soil and on Sewage Sludge using High Performance Liquid Chromatography (HPLC), Experimental value)
Ecology - soil	Highly mobile in soil.

polyoxyethylene(23)lauryl ether (9002-92-0)

Organic Carbon Normalized Adsorption Coefficient (Log Koc)	1.643 (log Koc, OECD 121: Estimation of the Adsorption Coefficient (Koc) on Soil and on Sewage Sludge using High Performance Liquid Chromatography (HPLC), Experimental value)
Ecology - soil	Highly mobile in soil.

12.5. Other adverse effects

Ozone	: Not classified
Fluorinated greenhouse gases	: No
Other information	: Avoid release to the environment.

SECTION 13 Disposal considerations

Regional legislation (waste)	: Disposal must be done according to official regulations.
Waste treatment methods	: Waste treatment methods.
Sewage disposal recommendations	: Disposal must be done according to official regulations.
Product/Packaging disposal recommendations	: Dispose in a safe manner in accordance with local/national regulations. Dispose of contents/container to hazardous or special waste collection point, in accordance with local, regional, national and/or international regulation. Disposal must be done according to official regulations.
Additional information	: Do not re-use empty containers.
Ecological waste information	: Avoid release to the environment.

SECTION 14 Transport information

In accordance with DOT / TDG / IATA

14.1. UN number

UN-No. (DOT)	: Not applicable
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UN-No. (TDG) : Not applicable
UN-No. (IATA) : Not applicable

14.2. UN Proper Shipping Name

Proper Shipping Name (DOT) : Not applicable
Proper Shipping Name (TDG) : Not applicable
Proper Shipping Name (IATA) : Not applicable

14.3. Transport hazard class(es)

DOT
Transport hazard class(es) (DOT) : Not applicable

TDG
Transport hazard class(es) (TDG) : Not applicable

IATA
Transport hazard class(es) (IATA) : Not applicable

14.4. Packing group

Packing group (DOT) : Not applicable
Packing group (TDG) : Not applicable
Packing group (IATA) : Not applicable

14.5. Environmental hazards

Other information : No supplementary information available.

14.6. Transport in bulk

Not applicable

14.7. Special precautions for user

DOT
No data available

TDG
No data available

IATA
Transport regulations (IATA) : Not subject

SECTION 15 Regulatory information

15.1. Federal regulations

Commercial status of components according to the United States Environmental Protection Agency's Toxic Substances Control Act (TSCA):

Name	CAS-No.	Listing	Commercial status	Flags
polyoxyethylene(23)lauryl ether	9002-92-0	Not present	-	

15.2. International regulations

CANADA

Brij 35 (10% purified solution) (9002-92-0)

Listed on the Canadian DSL (Domestic Substances List)

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EU-Regulations

No additional information available

National regulations

Brij 35 (10% purified solution) (9002-92-0)

Listed on INSQ (Mexican National Inventory of Chemical Substances)

15.3. State regulations

No additional information available

SECTION 16 Other information

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Revision date : 10/31/2025

Date of issue : 6/3/2013

Other information : None.

Full text of hazard classes and H-statements

H302	Harmful if swallowed
H319	Causes serious eye irritation
H412	Harmful to aquatic life with long lasting effects

Abbreviations and acronyms

ACGIH	American Conference of Government Industrial Hygienists
ADN	European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways
ADR	European Agreement concerning the International Carriage of Dangerous Goods by Road
ATE	Acute Toxicity Estimate
BCF	Bioconcentration factor
BLV	Biological limit value
BOD	Biochemical oxygen demand (BOD)
CAS-No.	Chemical Abstract Service number
CLP	Classification Labelling Packaging Regulation; Regulation (EC) No 1272/2008
COD	Chemical oxygen demand (COD)
CSA	Chemical safety assessment
DMEL	Derived Minimal Effect level
DNEL	Derived-No Effect Level
EC-No.	European Community number
EC50	Median effective concentration
ED	Endocrine disruptor
EN	European Standard
EWC	European waste catalogue
IARC	International Agency for Research on Cancer

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Abbreviations and acronyms	
IATA	International Air Transport Association
IMDG	International Maritime Dangerous Goods
LC50	Median lethal concentration
LD50	Median lethal dose
LOAEL	Lowest Observed Adverse Effect Level
Log Kow	Partition coefficient n-octanol/water (Log Kow)
Log Pow	Partition coefficient n-octanol/water (Log Pow)
MAK	maximum workplace concentration
NOAEC	No-Observed Adverse Effect Concentration
NOAEL	No-Observed Adverse Effect Level
NOEC	No-Observed Effect Concentration
N.O.S.	Not Otherwise Specified
OECD	Organisation for Economic Co-operation and Development
OEL	Occupational Exposure Limit
OSHA	Occupational Safety & Health Administration
PBT	Persistent Bioaccumulative Toxic
PNEC	Predicted No-Effect Concentration
PPE	Personal protection equipment
RID	Regulations concerning the International Carriage of Dangerous Goods by Rail
SDS	Safety Data Sheet
STP	Sewage treatment plant
TF	Technical function
ThOD	Theoretical oxygen demand (ThOD)
TLM	Median Tolerance Limit
TWA	Time Weighted Average
VOC	Volatile Organic Compounds
vPvB	Very Persistent and Very Bioaccumulative
UFI	Unique Formula Identifier

NFPA health hazard

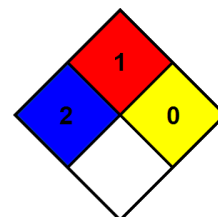
: 2 - Materials that, under emergency conditions, can cause temporary incapacitation or residual injury.

NFPA fire hazard

: 1 - Materials that must be preheated before ignition can occur.

NFPA reactivity

: 0 - Material that in themselves are normally stable, even under fire conditions.



Safety Data Sheet (SDS), USA

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.



3((3-cholamidopropyl)dimethylammonio)1-propanesulfonate, dihydrate

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations
Date of issue: 12/9/2015 Revision date: 1/17/2025 Supersedes: 1/14/2025 Version: 10.0

SECTION 1 Identification

1.1. Product identifier

Product form : Substance
Substance name : 3((3-cholamidopropyl)dimethylammonio)1-propanesulfonate, dihydrate
Chemical name : CHAPS
CAS-No. : 75621-03-3
Product code : 163C
Formula : C32H58N2O7S
BIG No : 19945

1.2. Other means of identification

Synonyms : 1-propanaminium, N,N-dimethyl-3-sulfo-N-(3-(((3alpha,5beta,7alpha,12alpha)-3,7,12-trihydroxy-24-oxocholan-24-yl)amino)propyl)-,hydroxide,inner salt

1.3. Recommended use of the chemical and restrictions on use

No additional information available

1.4. Supplier's details

G-Biosciences/ Geno Technology, Inc.
9800 Page Avenue
St. Louis, MO 63132-1429, USA
Tel. 1-800-628-7730
www.GBiosciences.com

1.5. Emergency phone number

Emergency number : Chemtrec **1-800-424-9300** (USA/Canada), **+1-703-527-3887** (Intl)

SECTION 2 Hazard Identification

2.1. Classification of the substance or mixture

GHS US classification

Skin corrosion/irritation, Category 2	H315	Causes skin irritation.
Serious eye damage/eye irritation, Category 2	H319	Causes serious eye irritation.
Specific target organ toxicity – Single exposure, Category 3, Respiratory tract irritation	H335	May cause respiratory irritation.

Full text of H statements : see section 16

2.2. Label elements

GHS US labeling

Hazard pictograms (GHS US) :



Signal word (GHS US) : Warning
Hazard statements (GHS US) : H315 - Causes skin irritation
H319 - Causes serious eye irritation
H335 - May cause respiratory irritation

3((3-cholamidopropyl)dimethylammonio)1-propanesulfonate,dihydrate

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Precautionary statements (GHS US) : P261 - Avoid breathing dust, fume, gas, mist, vapors, spray.
P264 - Wash hands, forearms and face thoroughly after handling.
P271 - Use only outdoors or in a well-ventilated area.
P280 - Wear protective gloves.
P302+P352 - If on skin: Wash with plenty of water.
P304+P340 - If inhaled: Remove person to fresh air and keep comfortable for breathing.
P305+P351+P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P312 - Call a poison center or doctor if you feel unwell.
P321 - Specific treatment (see supplemental first aid instruction on this label).
P332+P313 - If skin irritation occurs: Get medical advice or attention.
P337+P313 - If eye irritation persists: Get medical advice or attention.
P362+P364 - Take off contaminated clothing and wash it before reuse.
P403+P233 - Store in a well-ventilated place. Keep container tightly closed.
P405 - Store locked up.
P501 - Dispose of contents and/or container to hazardous or special waste collection point, in accordance with local, regional, national and/or international regulations.

2.3. Hazards associated with known or reasonably anticipated uses

No additional information available

2.4. Hazards not otherwise classified

No additional information available

2.5. Unknown acute toxicity

No additional information available

SECTION 3 Composition/information on ingredients

3.1. Substances

Substance type : Mono-constituent

Name	Common Name (Synonyms)	Product identifier	%	GHS US classification
3((3-cholamidopropyl)dimethylammonio)1-propanesulfonate,dihydrate (Main constituent)	1-propanaminium, N,N-dimethyl-3-sulfo-N-(3-(((3alpha,5beta,7alpha,12alpha)-3,7,12-trihydroxy-24-oxocholan-24-yl)amino)propyl)-,hydroxide,inner salt	CAS-No.: 75621-03-3	100	Skin Irrit. 2, H315 Eye Irrit. 2, H319 STOT SE 3, H335

Full text of hazard classes and H-statements : see section 16

3.2. Mixtures

Not applicable

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SECTION 4 First aid measures

4.1. Description of necessary first-aid measures

First-aid measures general	: Check the vital functions. Unconscious: maintain adequate airway and respiration. Respiratory arrest: artificial respiration or oxygen. Cardiac arrest: perform resuscitation. Victim conscious with laboured breathing: half-seated. Victim in shock: on his back with legs slightly raised. Vomiting: prevent asphyxia/aspiration pneumonia. Prevent cooling by covering the victim (no warming up). Keep watching the victim. Give psychological aid. Keep the victim calm, avoid physical strain. Depending on the victim's condition: doctor/hospital. Never give anything by mouth to an unconscious person. If you feel unwell, seek medical advice (show the label where possible). Call a poison center/doctor/physician if you feel unwell.
First-aid measures after inhalation	: Remove person to fresh air and keep comfortable for breathing. Remove the victim into fresh air. Respiratory problems: consult a doctor/medical service. Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER or doctor/physician if you feel unwell. Call a poison center/doctor/physician if you feel unwell.
First-aid measures after skin contact	: Wash immediately with lots of water. Do not apply (chemical) neutralizing agents. Take victim to a doctor if irritation persists. Wash with plenty of soap and water. Wash contaminated clothing before reuse. If skin irritation occurs: Get medical advice/attention. Specific treatment (see supplemental first aid instruction on this label). Wash skin with plenty of water. Take off contaminated clothing. If skin irritation occurs: Get medical advice/attention.
First-aid measures after eye contact	: Rinse immediately with plenty of water. Do not apply neutralizing agents. Take victim to an ophthalmologist if irritation persists. Rinse immediately with plenty of water. Obtain medical attention if pain, blinking or redness persists. Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.
First-aid measures after ingestion	: Rinse mouth with water. Call Poison Information Centre (www.big.be/antigif.html). Consult a doctor/medical service if you feel unwell. Ingestion of large quantities: immediately to hospital. Rinse mouth. Do NOT induce vomiting. Obtain emergency medical attention. Call a poison center/doctor/physician if you feel unwell.
Self protection of the first-aiders	: First aid workers will be equipped with suitable personal protective equipment.

4.2. Most important symptoms/effects, acute and delayed

Potential Adverse human health effects and symptoms	: Causes skin irritation. May cause respiratory irritation. Causes serious eye irritation.
Symptoms/effects after inhalation	: Irritation of the respiratory tract. Irritation of the nasal mucous membranes. FOLLOWING SYMPTOMS MAY APPEAR LATER: Possible laryngeal spasm/oedema. May cause respiratory irritation.
Symptoms/effects after skin contact	: Tingling/irritation of the skin. Causes skin irritation. Irritation.
Symptoms/effects after eye contact	: Irritation of the eye tissue. Eye irritation.
Symptoms/effects after ingestion	: None under normal conditions.

4.3. Indication of immediate medical attention and special treatment needed, if necessary

Other medical advice or treatment	: Treat symptomatically.
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SECTION 5: Fire-fighting measures

5.1. Suitable (and unsuitable) extinguishing media

Suitable extinguishing media	: Water spray. Alcohol-resistant foam. Polymer foam. ABC powder. Carbon dioxide. Foam. Dry powder. Carbon dioxide. Water spray. Sand.
Unsuitable extinguishing media	: Quick-acting BC powder extinguisher. Quick-acting CO2 extinguisher.

5.2. Specific hazards arising from the chemical

Fire hazard	: No fire hazard.
Explosion hazard	: No direct explosion hazard.

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Hazardous decomposition products in case of fire : Toxic fumes may be released.

5.3. Special protective equipment and precautions for fire-fighters

Precautionary measures fire : Exposure to fire/heat: keep upwind. Exposure to fire/heat: consider evacuation. Exposure to fire/heat: have neighbourhood close doors and windows.

Firefighting instructions : Dilute toxic gases with water spray.

Protection during firefighting : Heat/fire exposure: compressed air/oxygen apparatus. Do not enter fire area without proper protective equipment, including respiratory protection. Do not attempt to take action without suitable protective equipment. Self-contained breathing apparatus. Complete protective clothing.

SECTION 6 Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

General measures : Notify authorities if product enters sewers or public waters. Absorb spillage to prevent material-damage.

For non-emergency personnel

Protective equipment : Gloves (EN 374). Face shield (EN 166). Protective clothing (EN 14605 or EN 13034). Dust cloud production: self-contained breathing apparatus (EN 136 + EN 137). Dust cloud production: dust-tight suit (EN 13982).

Emergency procedures : Ventilate spillage area. Mark the danger area. Prevent dust cloud formation. No naked flames. Wash contaminated clothes. Evacuate unnecessary personnel. Avoid breathing dust/fume/gas/mist/vapors/spray. Avoid contact with skin and eyes.

Measures in case of dust release : In case of dust production: keep upwind. Dust production: have neighbourhood close doors and windows.

For emergency responders

Protective equipment : Do not attempt to take action without suitable protective equipment. Equip cleanup crew with proper protection. For further information refer to section 8: "Exposure controls/personal protection".

Emergency procedures : Ventilate area. Evacuate unnecessary personnel.

Environmental precautions : Avoid release to the environment. Prevent entry to sewers and public waters. Notify authorities if liquid enters sewers or public waters.

6.2. Methods and materials for containment and cleaning up

For containment : Contain released product, collect/pump into suitable containers. Plug the leak, cut off the supply. Knock down/dilute dust cloud with water spray.

Methods for cleaning up : Mechanically recover the product. Stop dust cloud by covering with sand/earth. Scoop solid spill into closing containers. Clean contaminated surfaces with an excess of water. Wash clothing and equipment after handling. On land, sweep or shovel into suitable containers. Minimize generation of dust. Store away from other materials.

Other information : Dispose of materials or solid residues at an authorized site.

See Heading 8. Exposure controls and personal protection. For further information refer to section 13.

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SECTION 7 Handling and storage

7.1. Precautions for safe handling

Precautions for safe handling	: Ensure good ventilation of the work station. Comply with the legal requirements. Remove contaminated clothing immediately. Clean contaminated clothing. Avoid raising dust. Keep away from naked flames/heat. Reduce/avoid exposure and/or contact. Keep container tightly closed. Carry operations in the open/under local exhaust/ventilation or with respiratory protection. Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work. Provide good ventilation in process area to prevent formation of vapor. Avoid breathing dust/fume/gas/mist/vapors/spray. Use only outdoors or in a well-ventilated area. Avoid contact with skin and eyes. Wear personal protective equipment.
Hygiene measures	: Wash hands, forearms and face thoroughly after handling. Wash contaminated clothing before reuse. Do not eat, drink or smoke when using this product. Always wash hands after handling the product.
Additional hazards when processed	: Not expected to present a significant hazard under anticipated conditions of normal use.

7.2. Conditions for safe storage, including incompatibilities

Technical measures	: Keep in a cool, well-ventilated place away from heat.
Storage conditions	: Keep cool. Keep only in the original container in a cool, well ventilated place away from : Keep container tightly closed. Store locked up. Store in a well-ventilated place.
Storage area	: Store in a dry area. Meet the legal requirements.
Incompatible products	: Strong bases. Strong acids.
Incompatible materials	: Sources of ignition. Direct sunlight.
Information on mixed storage	: KEEP SUBSTANCE AWAY FROM: oxidizing agents. (strong) acids. (strong) bases.
Heat-ignition	: KEEP SUBSTANCE AWAY FROM: heat sources.
Special rules on packaging	: SPECIAL REQUIREMENTS: closing. correctly labelled. meet the legal requirements. Secure fragile packagings in solid containers.
Packaging materials	: Store always product in container of same material as original container.

SECTION 8 Exposure controls/personal protection

8.1. Control parameters

No additional information available

8.2. Appropriate engineering controls

Appropriate engineering controls	: Ensure good ventilation of the work station.
Environmental exposure controls	: Avoid release to the environment.

8.3. Individual protection measures, such as personal protective equipment

Personal protective equipment:

Avoid all unnecessary exposure.

Hand protection:
Gloves. Wear protective gloves.
Eye protection:
Face shield. In case of dust production: protective goggles. Chemical goggles or safety glasses. Safety glasses
Skin and body protection:
Protective clothing. In case of dust production: head/neck protection. In case of dust production: dustproof clothing. Wear suitable protective clothing
Respiratory protection:
Dust production: dust mask with filter type P2. Wear appropriate mask

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Personal protective equipment symbol(s):



Other information:

Do not eat, drink or smoke during use.

SECTION 9 Physical and chemical properties

9.1. Basic physical and chemical properties

Physical state	: Solid
Appearance	: Solid.
Color	: Colorless
Odor	: characteristic
Odor threshold	: No data available
pH	: No data available
Melting point	: 157 °C
Freezing point	: Not applicable
Boiling point	: No data available
Flash point	: Not applicable
Flammability (solid, gas)	: Non flammable.
Vapor pressure	: No data available
Relative vapor density at 20°C	: Not applicable
Relative density	: No data available
Molecular mass	: 650.92 g/mol
Solubility	: No data available
Partition coefficient n-octanol/water (Log Pow)	: No data available
Auto-ignition temperature	: Not applicable
Decomposition temperature	: 157 °C
Viscosity, kinematic	: Not applicable
Explosion limits	: Not applicable
Particle characteristics	: No data available

9.2. Data relevant with regard to physical hazard classes (supplemental)

VOC content : 0 %

SECTION 10 Stability and reactivity

10.1. Reactivity

The product is non-reactive under normal conditions of use, storage and transport.

10.2. Chemical stability

Stable under normal conditions. Not established.

10.3. Possibility of hazardous reactions

No dangerous reactions known under normal conditions of use. Not established.

10.4. Conditions to avoid

None under recommended storage and handling conditions (see section 7). Direct sunlight. Extremely high or low temperatures.

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10.5. Incompatible materials

Strong acids. Strong bases.

10.6. Hazardous decomposition products

Hazardous decomposition products. fume. Carbon monoxide. Carbon dioxide.

SECTION 11 Toxicological information

11.1. Information on toxicological effects

Acute toxicity (oral)	: Not classified
Acute toxicity (dermal)	: Not classified
Acute toxicity (inhalation)	: Not classified
Skin corrosion/irritation	: Causes skin irritation.
Serious eye damage/irritation	: Causes serious eye irritation.
Respiratory or skin sensitization	: Not classified
Germ cell mutagenicity	: Not classified
Carcinogenicity	: Not classified
Reproductive toxicity	: Not classified
STOT-single exposure	: May cause respiratory irritation.
STOT-repeated exposure	: Not classified
Aspiration hazard	: Not classified

3((3-cholamidopropyl)dimethylammonio)1-propanesulfonate,dihydrate (75621-03-3)

Viscosity, kinematic	Not applicable
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Potential Adverse human health effects and symptoms	: Causes skin irritation. May cause respiratory irritation. Causes serious eye irritation.
Symptoms/effects after inhalation	: Irritation of the respiratory tract. Irritation of the nasal mucous membranes. FOLLOWING SYMPTOMS MAY APPEAR LATER: Possible laryngeal spasm/oedema. May cause respiratory irritation.
Symptoms/effects after skin contact	: Tingling/irritation of the skin. Causes skin irritation. Irritation.
Symptoms/effects after eye contact	: Irritation of the eye tissue. Eye irritation.
Symptoms/effects after ingestion	: None under normal conditions.

SECTION 12 Ecological information

12.1. Ecotoxicity

Ecology - general	: The product is not considered harmful to aquatic organisms or to cause long-term adverse effects in the environment.
Ecology - air	: Not included in the list of substances which may contribute to the greenhouse effect (IPCC). Not included in the list of fluorinated greenhouse gases (Regulation (EU) No 2024/573). Not classified as dangerous for the ozone layer (Regulation (EC) No 2024/590).
Ecology - water	: No data available on ecotoxicity.
Hazardous to the aquatic environment, short-term (acute)	: Not classified
Hazardous to the aquatic environment, long-term (chronic)	: Not classified

12.2. Persistence and degradability

3((3-cholamidopropyl)dimethylammonio)1-propanesulfonate,dihydrate (75621-03-3)

Persistence and degradability	Biodegradability in water: no data available.
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12.3. Bioaccumulative potential

3((3-cholamidopropyl)dimethylammonio)1-propanesulfonate,dihydrate (75621-03-3)

Bioaccumulative potential	No bioaccumulation data available.
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12.4. Mobility in soil

No additional information available

12.5. Other adverse effects

Ozone : Not classified
Fluorinated greenhouse gases : No
Other information : Avoid release to the environment.

SECTION 13 Disposal considerations

Regional legislation (waste) : Disposal must be done according to official regulations.
Waste treatment methods : Waste treatment methods.
Sewage disposal recommendations : Disposal must be done according to official regulations.
Product/Packaging disposal recommendations : Remove waste in accordance with local and/or national regulations. Hazardous waste shall not be mixed together with other waste. Different types of hazardous waste shall not be mixed together if this may entail a risk of pollution or create problems for the further management of the waste. Hazardous waste shall be managed responsibly. All entities that store, transport or handle hazardous waste shall take the necessary measures to prevent risks of pollution or damage to people or animals. Remove to an authorized incinerator equipped with an afterburner and a flue gas scrubber with energy recovery. Dissolve or mix with a combustible solvent.
Additional information : Hazardous waste according to Directive 2008/98/EC, as amended by Regulation (EU) No 1357/2014 and Regulation (EU) No 2017/997.
Ecological waste information : Avoid release to the environment.

SECTION 14 Transport information

In accordance with DOT / TDG / IATA

14.1. UN number

Not regulated for transport

14.2. UN Proper Shipping Name

Proper Shipping Name (DOT) : Not applicable
Proper Shipping Name (TDG) : Not applicable
Proper Shipping Name (IATA) : Not regulated

14.3. Transport hazard class(es)

DOT
Transport hazard class(es) (DOT) : Not applicable

TDG
Transport hazard class(es) (TDG) : Not applicable

IATA
Transport hazard class(es) (IATA) : Not regulated

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14.4. Packing group

Packing group (DOT) : Not applicable
Packing group (TDG) : Not applicable
Packing group (IATA) : Not regulated

14.5. Environmental hazards

Other information : No supplementary information available.

14.6. Transport in bulk

Not applicable

14.7. Special precautions for user

DOT
No data available

TDG
No data available

IATA
Not regulated

SECTION 15 Regulatory information

15.1. Federal regulations

Commercial status of components according to the United States Environmental Protection Agency's Toxic Substances Control Act (TSCA):

Name	CAS-No.	Listing	Commercial status	Flags
3((3-cholamidopropyl)dimethylammonio)1-propanesulfonate,dihydrate	75621-03-3	Not present	-	

15.2. International regulations

CANADA

No additional information available

EU-Regulations

No additional information available

National regulations

No additional information available

15.3. State regulations

No additional information available

SECTION 16 Other information

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Revision date : 1/17/2025
Date of issue : 12/9/2015
Other information : None.

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Full text of hazard classes and H-statements	
H315	Causes skin irritation
H319	Causes serious eye irritation
H335	May cause respiratory irritation

Abbreviations and acronyms	
ACGIH	American Conference of Government Industrial Hygienists
ADN	European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways
ADR	European Agreement concerning the International Carriage of Dangerous Goods by Road
ATE	Acute Toxicity Estimate
BCF	Bioconcentration factor
BLV	Biological limit value
BOD	Biochemical oxygen demand (BOD)
CAS-No.	Chemical Abstract Service number
CLP	Classification Labelling Packaging Regulation; Regulation (EC) No 1272/2008
COD	Chemical oxygen demand (COD)
CSA	Chemical safety assessment
DMEL	Derived Minimal Effect level
DNEL	Derived-No Effect Level
EC-No.	European Community number
EC50	Median effective concentration
ED	Endocrine disruptor
EN	European Standard
EWC	European waste catalogue
IARC	International Agency for Research on Cancer
IATA	International Air Transport Association
IMDG	International Maritime Dangerous Goods
LC50	Median lethal concentration
LD50	Median lethal dose
LOAEL	Lowest Observed Adverse Effect Level
Log Kow	Partition coefficient n-octanol/water (Log Kow)
Log Pow	Partition coefficient n-octanol/water (Log Pow)
MAK	maximum workplace concentration
NOAEC	No-Observed Adverse Effect Concentration
NOAEL	No-Observed Adverse Effect Level
NOEC	No-Observed Effect Concentration
N.O.S.	Not Otherwise Specified

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Abbreviations and acronyms	
OECD	Organisation for Economic Co-operation and Development
OEL	Occupational Exposure Limit
OSHA	Occupational Safety & Health Administration
PBT	Persistent Bioaccumulative Toxic
PNEC	Predicted No-Effect Concentration
PPE	Personal protection equipment
RID	Regulations concerning the International Carriage of Dangerous Goods by Rail
SDS	Safety Data Sheet
STP	Sewage treatment plant
TF	Technical function
ThOD	Theoretical oxygen demand (ThOD)
TLM	Median Tolerance Limit
TWA	Time Weighted Average
VOC	Volatile Organic Compounds
vPvB	Very Persistent and Very Bioaccumulative
UFI	Unique Formula Identifier

Safety Data Sheet (SDS), USA

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.



Nonidet P-40 Substitute

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations
Date of issue: 8/31/2015 Revision date: 1/17/2025 Supersedes: 1/14/2025 Version: 11.0

SECTION 1 Identification

1.1. Product identifier

Product form	: Substance
Substance name	: Nonidet P-40 Substitute
CAS-No.	: 9016-45-9
Product code	: 072N_073N
Formula	: (C ₂ H ₄ O) _n .C ₁₅ H ₂₄ O
BIG No	: 31813

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1.2. Other means of identification

Nonidet P-40 Substitute

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Synonyms

: (nonylphenoxy)polyethylene oxide / A 730 / A 730(surfactant) / adekatol NP / adekatol NP 100 / adekatol NP 650 / adekatol NP 660 / adekatol NP 700 / adekatol NP 720 / agral / agral 90 / agral LN / agral R / akyporox NP 105 / akyporox NP 95 / alfenol / alfenol 10 / alfenol 18 / alfenol 22 / alfenol 28 / alfenol 710 / alfenol 8 / alfenol N 8 / alkasurf NP 11 / alkasurf NP 15 / alkasurf NP 8 / alpha-(nonylphenyl)-omega-hydroxypoly(oxy-1,2-ethanediyl) / alpha-(nonylphenyl)-omega-hydroxypolyoxyethylene / antarox 897 / antarox CO / antarox CO 430 / antarox CO 530 / antarox CO 730 / antarox CO 850 / antarox CO 970 / arkopal 130 / arkopal 40 / arkopal 60 / arkopal 80 / arkopal 9 / arkopal N / arkopal N 040 / arkopal N 060 / arkopal N 080 / arkopal N 090 / arkopal N 100 / arkopal N 110 / arkopal N 130 / arkopal N 150 / arkopal N 230 / arkopal N 300 / arkopal N 50 / auxipon NP / B 315 / B 350 / berol / berol 02 / berol 09 / berol 259 / berol 26 / berol 267 / berol 268 / berol 296 / BLM / BLM (polymer) / burtemul N / carsonon N / carsonon N 30 / carsonon N 4 / carsonon N 8 / CCC jelly / cemulsol NP 10 / cemulsol NP 12 / cemulsol NP 6 / cemulsol NP 7 / cemulsol NP 8 / cemulsol NP-EO 6 / cemulsol NP 9 / chemax NP 9 / chimipal WN 6 / CO 610 / CO 630 / conco NI / conco NI 190 / dehscoxid 771 / dehscoxid 781 / dehydrophen 100 / dikssol W 92 / dispergator BO / DME / DME (polymer) / dowfax 9N20 / dowfax 9N50 / dowfax 9N6 / dowfax 9N9 / DS 3195 / E 913 / EA 120 / EA 80 / elfapur N 70 / elfapur N 90 / emalex NP 12 / emalex NP 15 / emalex NP 8.5 / emmon 15332 / empilan NP 9 / EMU 02 / EMU 09 / emulgator NP 10 / emulgator U 6 / emulgen 900 / emulgen 903 / emulgen 904 / emulgen 905 / emulgen 906 / emulgen 909 / emulgen 910 / emulgen 911 / emulgen 913 / emulgen 920 / emulgen 921 / emulgen 930 / emulgen 931 / emulgen 935 / emulgen 950 / emulgen 985 / emulgen PI 20T / emulmin 140 / emulmin 240 / emulsit 100 / emulsit 161 / emulson 20B / emulson 9B / emulson PB / esapal NP 90 / ethoxylated nonylphenol / ethylan 20 / ethylan 44 / ethylan 55 / ethylan 77 / ethylan BCP / ethylan HA / ethylan KEO / ethylan N / ethylan N 5.5 / ethylan TU / ethylene oxide-nonylphenol condensate / ethylene oxide-nonylphenol polymer / etolat 914 / eumulgin 286 / fenopal / gafac CO 990 / gedepal CO 210 / glycols, polyethylene, mono(nonylphenyl) ether / hostapal CV / hostapal W / hyonic NP 40 / hyonic NP 4011 / hyonic NP 60 / hyonic NP 90 / hyonic PE 100 / hyonic PE 120 / hyonic PE 60 / iconol NP 40 / iconol NP 9 / igepal BC 16 / igepal CO 220 / igepal CO 436 / igepal CO 520 / igepal CO 530 / igepal CO 610 / igepal CO 620 / igepal CO 630 / igepal CO 660 / igepal CO 710 / igepal CO 720 / igepal CO 730 / igepal CO 850 / igepal CO 887 / igepal CO 890 / igepal CO 970 / igepal CO 977 / igepal CO 987 / igepal CO 990 / igepal CO 997 / igepal CTA 639W / igepal LO 997 / imbentin / imbentin N 52 / inbentine / lerolat N / lerolat N 300 / levelan P 208 / lipal 9N / liponox NC 130 / liponox NC 38 / liponox NC 500F / liponox NC 86 / liponox NC 95 / liponox NCA / liponox NCD / liponox NCG / liponox NCH / liponox NCI / liponox NCM / lissapol N / lissapol NX / lissapol NXP / lissapol TN 450 / lubrol APN 5 / lubrol L / lubrol N / lubrol N 13 / lutensol AP 10 / lutensol AP 20 / lutensol AP 9 / M 812 / macol NP / macol NP 4 / macol NP 9.5 / makon / makon 10 / makon 12 / makon 14 / makon 30 / makon 4 / makon 6 / makon 8 / markophen 85 / marlophen / marlophen 810 / marlophen 812 / marlophen 83 / marlophen 88 / marlophen 89 / mergital OP 2 / meriten NF 9 / merpoxen 230 / merpoxen ON / mono(nonylphenyl)polyethylene glycol / monopol 1020 / mylura N 100 / nemol 1030 / nemol 36 / nemol K 1032 / nemol K 1035 / nemol K 2030 / nemol K 3030 / nemol K 34 / nemol K 36 / nemol K 38 / nemol K 39 / nemol K 539 / nemolm K 1033 / neutronyl 640 / neutronyx 676 / newcol 504 / newcol 506 / newcol 509 / newcol 516 / newcol 520 / newcol 560 / newcol 561H / newcol 562 / newcol 564 / newcol 568 / NF 4 / nikkol NP / nikkol NP 10 / nikkol NP 100 / nikkol NP 15 / nikkol NP 18TX / nikkol NP 2 / nikkol NP 20 / nikkol NP 5 / nikkol NP 7.5 / nissan nonion NS / nissan nonion NS 12 / nissan nonion NS 202s / nissan nonion NS 203 / nissan nonion NS 204.5 / nissan nonion NS 206 / nissan nonion NS 208.5 / nissan nonion NS 210 / nissan nonion NS 215 / nissan nonion NS 220 / nissan nonion NS 230 / nissan nonion NS 270 / nissan nonion NS 402 / noigen EA 130T / noigen EA 150 / noigen EA 50 / noigen EA 70 / noigen EA 80 / nonal 206 / nonal 208 / nonal 210 / nonal 910 / nonaril 930 / nonidet NP 50 / nonidet P 80 / nonio-light PN 12 / nonio-light PN 4 / nonio-light PN 6 / nonion NS / nonion NS 203 / nonion NS 206 / nonion NS 208.5 / nonion NS 210 / nonion NS 212 / nonion NS 215 / nonion NS 220 / nonion NS 230 / nonion NS 240 / nonion NS 270 / nonionik NI / nonipol / nonipol 100 / nonipol 110 / nonipol 120 / nonipol 130 / nonipol 140 / nonipol 160 / nonipol 20 / nonipol 200 / nonipol 40 / nonipol 400 / nonipol 45 / nonipol 500 / nonipol 55 / nonipol 6 / nonipol 60 / nonipol 70 / nonipol 800 / nonipol 85 / nonipol 95 / nonoxinol / nonylphenol ethoxylate / nonylphenol ethylene oxide condensate / nonylphenol polyethylene glycol ether / nonylphenol polyethylene oxide / nonylphenol, ethoxylated / nonylphenoxy polyethoxy ethanol / nonylphenoxy poly (ethyleneoxy) ethanol /

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nonylphenoxy poly(oxyethylene) ethanol / nonylphenyl ethoxylate / nonylphenyl polyethylene glycol ether / nonylphenyl polyoxyethylene ether / NOP 9 / noregal LC 4 conc / NP / NP 10 / NP 100 / NP 13 / NP 14 / NP 17 / NP 30 / NP 40 / NP 6 / NP 660 / NP 695 / NP 7.5 / NP 8 / NP 80 / NP 9 / NP 936 / NP (nonionic surfactant) / NPEO10 / NPEO30 / NPEO40 / NPO20 / NPO30 / NS 205.5 / NS 215 / NS 230 / omega-hydroxy-alpha-(nonylphenyl) poly(oxy 1,2-ethanediyl) / ON 10 / OP 2 / oxyethylated nonylphenol / oxyethylene nonylphenol ether / PBI spreader / penerol NO 16 / penerol NP 10 / phenoxol 9/18 / phenoxol 9/20 / pionin D 414 / pnentrax / poly(ethylene oxide) nonylphenyl ether / poly(oxy)-1,2-ethanediyl, alpha-(nonylphenyl)-omega-hydroxy- / poly(oxyethylene nonylphenol ether / poly(oxyethylene) nonylphenyl ether / polyethoxylated nonylphenol / polyethylene glycol mono(nonylphenol) ether / polyethylene glycol mono(nonylphenyl) ether / polyethylene glycol nonylphenol ether / polyethylene glycol nonylphenyl monoether / polyethylene oxide mono(nonylphenyl) ether / polyoxyethylated nonylphenol / polyoxyethylene (15) nonylphenyl ether / polyoxyethylene (20) nonyl phenyl ether / polyoxyethylene monononylphenyl ether / polystep F 10NP40 / polystep F 4 / polystep F 6 / polystep F 8 / polystep F 8NP20 / poly-tergent B / poly-tergent B 150 / poly-tergent B 300 / poly-tergent B 350 / prevocell N 11 / prevocell W-OF 100 / rendells suppository / renex 1000 / renex 110 / renex 230 / renex 300 / renex 40 / renex 647 / renex 648 / renex 678 / renex 679 / renex 682 / renex 688 / renex 697 / renex 698 / retzanol NP 100 / rewopal HV 10 / rewopal HV 25 / rewopal HV 5 / rewopal NP 10 / rexol 25/10 / rexol 25/15 / rexol 25/4 / rexol 25/9 / rexol 25J / rhodiasurf NO 9 / rioklen NF 10 / rioklen NF 9 / SA 1 / sapal / scourol 900 / SER-AD FN 1566 / serdox NNP / serdox NNP 1.5 / serdox NNP 12 / serdox NNP 15 / serdox NNP 20 / serdox NNP 7 / serdox NNP 8 / serdox NNP 8.5 / simulsol 630 / simulsol 830NP / sinnopal NP / siponic NP / siponic NP 9 / slovafol 903 / slovafol 905 / slovafol 906 / slovafol 909 / slovafol 90S / slovafol 910 / slovafol 920 / slovafol A / slovafol X / solar NF / soprophor BC 10 / soprophor BC 17 / soprophor BC 2 / soprophor BC 20 / soprophor BC 4 / soprophor BC 40 / soprophor BC 6 / soprophor BS 10 / soprophor NP 10 / steinapal HV / steinapal HV 10 / steinapal HV 14 / steinapal HV 25 / steinapal HV 3 / steinapal HV 4 / steinapal HV 5 / steinapal HV 8 / steinapal HV 9 / sterling NP 10 / steroid ND / stokolan NS 9 / sunaptol NP 55 / sunmorl X 1 / surfonic N 1 / surfonic N 10 / surfonic N 106 / surfonic N 120 / surfonic N 150 / surfonic N 200 / surfonic N 40 / surfonic N 60 / surfonic N 75 / surfonic N 95 / syn fac N 95 / synperonic N / synperonic NP / synperonic NP 10 / synperonic NP 12 / synperonic NP 13 / synperonic NP 15 / synperonic NP 20 / synperonic NP 30 / synperonic NP 4 / synperonic NP 5 / synperonic NP 6 / synperonic NP 8 / synperonic NP 9 / synperonic NX / synperonic NXP / synthrapol N / syntopon C / T-DET N / T-DET N 10.5 / T-DET N 14 / T-DET N 4 / T-det N 50 / T-DET N 507 / T-DET N 6 / tenzilin 080 / tenzilin FN 65 / tergitol NP / tergitol NP 10 / tergitol NP 101 / tergitol NP 13 / tergitol NP 14 / tergitol NP 15 / tergitol NP 27 / tergitol NP 33 / tergitol NP 35 / tergitol NP 40 / tergitol NP 6 / tergitol NP 7 / tergitol NP 9 / tergitol NPX / tergitol TH / tergitol TP 9 / teric GN / teric GN 5 / teric GN 9 / teric N / teric N 100 / teric N 12 / teric N 15 / teric N 30 / teric N 40 / teric N 450 / teric N 5 / teric N 9 / texofor FN 6 / texofor FN 8 / TN 450 / triton N / triton N 100 / triton N 101 / triton N 111 / triton N 128 / triton N 150 / triton N 302 / triton N 42 / triton N 57 / triton N 60 / triton N 998 / trycol 6940 / trycol 6954 / trycol 6964 / trycol NP 30 / trycol NP 40 / TX 10 / TX 10

(polyoxyalkylene) / value 3706 / varonic N 30-7 / varonic N 6 / veranol N 10 / WASC / wellaid 711W / witconol NP 100 / witconol NP 40 / witconol NP 60 / witconol NP 80 / YF 6500

EC-No. : 500-024-6

1.3. Recommended use of the chemical and restrictions on use

Use of the substance/mixture : Detergent according to Regulation (EC) No 648/2004, Polymer

1.4. Supplier's details

G-Biosciences/ Geno Technology, Inc.
9800 Page Avenue
St. Louis, MO 63132-1429, USA
Tel. 1-800-628-7730
www.GBiosciences.com

1.5. Emergency phone number

Emergency number : Chemtrec **1-800-424-9300** (USA/Canada), **+1-703-527-3887** (Intl)

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SECTION 2 Hazard Identification


2.1. Classification of the substance or mixture

GHS US classification

Hazardous to the aquatic environment — Acute Hazard, Category 1 H400 Very toxic to aquatic life.
Hazardous to the aquatic environment — Chronic Hazard, Category 1 H410 Very toxic to aquatic life with long lasting effects.
Full text of H statements : see section 16

2.2. Label elements

GHS US labeling

Hazard pictograms (GHS US) : 

Signal word (GHS US) : Warning

Hazard statements (GHS US) : H400 - Very toxic to aquatic life
H410 - Very toxic to aquatic life with long lasting effects

Precautionary statements (GHS US) : P273 - Avoid release to the environment.
P391 - Collect spillage.
P501 - Dispose of contents and/or container to hazardous or special waste collection point, in accordance with local, regional, national and/or international regulations.

2.3. Hazards associated with known or reasonably anticipated uses

No additional information available

2.4. Hazards not otherwise classified

No additional information available

2.5. Unknown acute toxicity

No additional information available

SECTION 3 Composition/information on ingredients

3.1. Substances

Name : Nonidet P-40 Substitute
CAS-No. : 9016-45-9

Name	Common Name (Synonyms)	Product identifier	%	GHS US classification
Nonidet NP-40		CAS-No.: 9016-45-9	100	Aquatic Acute 1, H400 Aquatic Chronic 1, H410

Full text of hazard classes and H-statements : see section 16

3.2. Mixtures

Not applicable

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SECTION 4 First aid measures

4.1. Description of necessary first-aid measures

First-aid measures general	: Check the vital functions. Unconscious: maintain adequate airway and respiration. Respiratory arrest: artificial respiration or oxygen. Cardiac arrest: perform resuscitation. Victim conscious with laboured breathing: half-seated. Victim in shock: on his back with legs slightly raised. Vomiting: prevent asphyxia/aspiration pneumonia. Prevent cooling by covering the victim (no warming up). Keep watching the victim. Give psychological aid. Keep the victim calm, avoid physical strain. Depending on the victim's condition: doctor/hospital. Never give anything by mouth to an unconscious person. If you feel unwell, seek medical advice (show the label where possible).
First-aid measures after inhalation	: Remove person to fresh air and keep comfortable for breathing. Allow affected person to breathe fresh air. Allow the victim to rest.
First-aid measures after skin contact	: Remove affected clothing and wash all exposed skin area with mild soap and water, followed by warm water rinse. Wash skin with plenty of water.
First-aid measures after eye contact	: Rinse immediately with plenty of water. Obtain medical attention if pain, blinking or redness persists. Rinse eyes with water as a precaution.
First-aid measures after ingestion	: Rinse mouth. Do NOT induce vomiting. Obtain emergency medical attention. Call a poison center/doctor/physician if you feel unwell.
Self protection of the first-aider	: First aid workers will be equipped with suitable personal protective equipment.

4.2. Most important symptoms/effects, acute and delayed

Potential Adverse human health effects and symptoms	: Practically non-toxic if swallowed (LD50 oral, rat > 2000 mg/kg). Practically non-toxic in contact with skin (LD50 skin > 2000 mg/kg). Irritant to the skin. Slightly harmful by inhalation. Irritant to the eyes. Based on available data, the classification criteria are not met.
Symptoms/effects	: Not expected to present a significant hazard under anticipated conditions of normal use.
Symptoms/effects after inhalation	: None under normal conditions.
Symptoms/effects after skin contact	: Tingling/irritation of the skin.
Symptoms/effects after eye contact	: Irritation of the eye tissue.
Symptoms/effects after ingestion	: Irritation of the gastric/intestinal mucosa.

4.3. Indication of immediate medical attention and special treatment needed, if necessary

Other medical advice or treatment	: Treat symptomatically.
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SECTION 5: Fire-fighting measures

5.1. Suitable (and unsuitable) extinguishing media

Suitable extinguishing media	: Foam. Dry powder. Carbon dioxide. Water spray. Sand.
Unsuitable extinguishing media	: Water (quick-acting extinguisher, reel); risk of puddle expansion. Water; risk of puddle expansion. Do not use a heavy water stream.

5.2. Specific hazards arising from the chemical

Fire hazard	: No fire hazard.
Explosion hazard	: No direct explosion hazard.
Hazardous decomposition products in case of fire	: Toxic fumes may be released.

5.3. Special protective equipment and precautions for fire-fighters

Precautionary measures fire	: Exposure to fire/heat: keep upwind. Exposure to fire/heat: have neighbourhood close doors and windows.
Firefighting instructions	: Take account of toxic fire-fighting water. Use water moderately and if possible collect or contain it. Use water spray or fog for cooling exposed containers. Exercise caution when fighting any chemical fire. Prevent fire-fighting water from entering environment. Do not enter fire area without proper protective equipment, including respiratory protection.

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Protection during firefighting : Do not enter fire area without proper protective equipment, including respiratory protection. Do not attempt to take action without suitable protective equipment. Self-contained breathing apparatus. Complete protective clothing.

SECTION 6 Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

General measures : Stop leak if safe to do so. Notify authorities if product enters sewers or public waters. Absorb spillage to prevent material-damage.

For non-emergency personnel

Protective equipment : Gloves. Face shield. Protective clothing.

Emergency procedures : Ventilate spillage area. Evacuate unnecessary personnel.

For emergency responders

Protective equipment : Do not attempt to take action without suitable protective equipment. Equip cleanup crew with proper protection. For further information refer to section 8: "Exposure controls/personal protection".

Emergency procedures : Ventilate area. Evacuate unnecessary personnel. Stop leak if safe to do so.

Environmental precautions : Prevent entry to sewers and public waters. Notify authorities if liquid enters sewers or public waters. Avoid release to the environment.

6.2. Methods and materials for containment and cleaning up

For containment : Contain released product, collect/pump into suitable containers. Plug the leak, cut off the supply. Dam up the liquid spill. Contain any spills with dikes or absorbents to prevent migration and entry into sewers or streams. Stop leak, if possible without risk.

Methods for cleaning up : Take up liquid spill into absorbent material. Soak up spills with inert solids, such as clay or diatomaceous earth as soon as possible. Collect spillage. Store away from other materials.

Other information : Dispose of materials or solid residues at an authorized site.

See Heading 8. Exposure controls and personal protection. For further information refer to section 13.

SECTION 7 Handling and storage

7.1. Precautions for safe handling

Precautions for safe handling : Ensure good ventilation of the work station. Wear personal protective equipment. Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work. Provide good ventilation in process area to prevent formation of vapor.

Hygiene measures : Do not eat, drink or smoke when using this product. Always wash hands after handling the product.

Additional hazards when processed : Not expected to present a significant hazard under anticipated conditions of normal use.

7.2. Conditions for safe storage, including incompatibilities

Technical measures : Keep in a cool, well-ventilated place away from heat.

Storage conditions : Store in a well-ventilated place. Keep cool. Keep only in the original container in a cool, well ventilated place away from : Keep container closed when not in use.

Storage area : Store in a dry area. Meet the legal requirements.

Incompatible products : Strong bases. Strong acids.

Incompatible materials : Sources of ignition. Direct sunlight.

Information on mixed storage : KEEP SUBSTANCE AWAY FROM: water/moisture.

Storage temperature : 5 – 40 °C

Heat-ignition : KEEP SUBSTANCE AWAY FROM: heat sources.

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Special rules on packaging	: SPECIAL REQUIREMENTS: closing. dry. clean. correctly labelled. meet the legal requirements. Secure fragile packagings in solid containers.
Packaging materials	: SUITABLE MATERIAL: stainless steel. synthetic material. Store always product in container of same material as original container.

SECTION 8 Exposure controls/personal protection

8.1. Control parameters

No additional information available

8.2. Appropriate engineering controls

Appropriate engineering controls	: Ensure good ventilation of the work station.
Environmental exposure controls	: Avoid release to the environment.

8.3. Individual protection measures, such as personal protective equipment

Personal protective equipment:

Avoid all unnecessary exposure.

Hand protection:
Protective gloves. Wear protective gloves.
Eye protection:
Chemical goggles or safety glasses. Safety glasses
Skin and body protection:
Wear suitable protective clothing
Respiratory protection:
In case of insufficient ventilation, wear suitable respiratory equipment. Wear appropriate mask

Personal protective equipment symbol(s):



Other information:

Do not eat, drink or smoke during use.

SECTION 9 Physical and chemical properties

9.1. Basic physical and chemical properties

Physical state	: Liquid
Appearance	: Liquid.
Color	: Colorless
Odor	: Almost odourless
Odor threshold	: No data available
pH	: 6 – 7
Melting point	: Not applicable
Freezing point	: No data available
Boiling point	: > 200 °C
Flash point	: > 200 °C
Flammability (solid, gas)	: Not applicable. Non flammable.
Vapor pressure	: No data available

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Relative vapor density at 20°C	: No data available
Relative density	: 1.1 (40 °C)
Molecular mass	: 880 g/mol
Solubility	: Soluble in water. Water: soluble, Literature
Partition coefficient n-octanol/water (Log Pow)	: No data available
Auto-ignition temperature	: > 400 °C
Decomposition temperature	: No data available
Viscosity, kinematic	: No data available
Viscosity, dynamic	: 0.3 Pa·s (40 °C)
Explosion limits	: No data available
Particle characteristics	: No data available

9.2. Data relevant with regard to physical hazard classes (supplemental)

Other properties : Hygroscopic. Slightly volatile.

SECTION 10 Stability and reactivity

10.1. Reactivity

The product is non-reactive under normal conditions of use, storage and transport.

10.2. Chemical stability

Hygroscopic. Not established.

10.3. Possibility of hazardous reactions

No dangerous reactions known under normal conditions of use. Not established.

10.4. Conditions to avoid

None under recommended storage and handling conditions (see section 7). Direct sunlight. Extremely high or low temperatures.

10.5. Incompatible materials

Strong acids. Strong bases.

10.6. Hazardous decomposition products

Hazardous decomposition products. fume. Carbon monoxide. Carbon dioxide.

SECTION 11 Toxicological information

11.1. Information on toxicological effects

Acute toxicity (oral)	: Not classified
Acute toxicity (dermal)	: Not classified
Acute toxicity (inhalation)	: Not classified

Nonidet P-40 Substitute (9016-45-9)

LD50 oral rat	> 2000 mg/kg (Rat)
LD50 dermal rabbit	> 2000 mg/kg (Rabbit)

Nonidet NP-40 (9016-45-9)

LD50 oral	4290 mg/kg body weight Animal: other:, Guideline: EU Method B.1 (Acute Toxicity (Oral)), Remarks on results: other:
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Skin corrosion/irritation	: Not classified pH: 6 – 7
Serious eye damage/irritation	: Not classified pH: 6 – 7
Respiratory or skin sensitization	: Not classified
Germ cell mutagenicity	: Not classified
Carcinogenicity	: Not classified
Reproductive toxicity	: Not classified
STOT-single exposure	: Not classified
STOT-repeated exposure	: Not classified
Aspiration hazard	: Not classified
Potential Adverse human health effects and symptoms	: Practically non-toxic if swallowed (LD50 oral, rat > 2000 mg/kg). Practically non-toxic in contact with skin (LD50 skin > 2000 mg/kg). Irritant to the skin. Slightly harmful by inhalation. Irritant to the eyes. Based on available data, the classification criteria are not met.
Symptoms/effects	: Not expected to present a significant hazard under anticipated conditions of normal use.
Symptoms/effects after inhalation	: None under normal conditions.
Symptoms/effects after skin contact	: Tingling/irritation of the skin.
Symptoms/effects after eye contact	: Irritation of the eye tissue.
Symptoms/effects after ingestion	: Irritation of the gastric/intestinal mucosa.

SECTION 12 Ecological information

12.1. Ecotoxicity

Ecology - general	: The product is not considered harmful to aquatic organisms or to cause long-term adverse effects in the environment. May cause long lasting harmful effects to aquatic life.
Ecology - air	: Not classified as dangerous for the ozone layer (Regulation (EC) No 1005/2009).
Ecology - water	: Water pollutant (surface water). Very toxic to aquatic life with long lasting effects.
Hazardous to the aquatic environment, short-term (acute)	: Very toxic to aquatic life.
Hazardous to the aquatic environment, long-term (chronic)	: Very toxic to aquatic life with long lasting effects.

12.2. Persistence and degradability

Nonidet P-40 Substitute (9016-45-9)	
Persistence and degradability	Not established.
Nonidet NP-40 (9016-45-9)	
Persistence and degradability	Not established.

12.3. Bioaccumulative potential

Nonidet P-40 Substitute (9016-45-9)	
Bioaccumulative potential	Not established.
Nonidet NP-40 (9016-45-9)	
Bioaccumulative potential	Not established.

12.4. Mobility in soil

No additional information available

12.5. Other adverse effects

Ozone	: Not classified
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Fluorinated greenhouse gases : No

Other information : Avoid release to the environment.

SECTION 13 Disposal considerations

Regional legislation (waste) : Disposal must be done according to official regulations.

Waste treatment methods : Waste treatment methods.

Sewage disposal recommendations : Disposal must be done according to official regulations.

Product/Packaging disposal recommendations : Remove to an authorized incinerator equipped with an afterburner and a flue gas scrubber with energy recovery. Dispose in a safe manner in accordance with local/national regulations. Dispose of contents/container to hazardous or special waste collection point, in accordance with local, regional, national and/or international regulation. Disposal must be done according to official regulations.

Additional information : Can be considered as non hazardous waste according to Directive 2008/98/EC, as amended by Regulation (EU) No 1357/2014. Do not re-use empty containers.

Ecological waste information : Avoid release to the environment.

SECTION 14 Transport information

In accordance with DOT / TDG / IATA

14.1. UN number

UN-No. (DOT) : Not applicable

UN-No. (TDG) : Not applicable

UN-No. (IATA) : Not applicable

14.2. UN Proper Shipping Name

Proper Shipping Name (DOT) : Not applicable

Proper Shipping Name (TDG) : Not applicable

Proper Shipping Name (IATA) : Not applicable

14.3. Transport hazard class(es)

DOT
Transport hazard class(es) (DOT) : Not applicable

TDG
Transport hazard class(es) (TDG) : Not applicable

IATA
Transport hazard class(es) (IATA) : Not applicable

14.4. Packing group

Packing group (DOT) : Not applicable

Packing group (TDG) : Not applicable

Packing group (IATA) : Not applicable

14.5. Environmental hazards

Other information : No supplementary information available.

14.6. Transport in bulk

Not applicable

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14.7. Special precautions for user

DOT

Not applicable

TDG

Not applicable

IATA

Not applicable

SECTION 15 Regulatory information

15.1. Federal regulations

Commercial status of components according to the United States Environmental Protection Agency's Toxic Substances Control Act (TSCA):

Name	CAS-No.	Listing	Commercial status	Flags
Nonidet NP-40	9016-45-9	Not present	-	

15.2. International regulations

CANADA

Nonidet P-40 Substitute (9016-45-9)

Listed on the Canadian DSL (Domestic Substances List)

EU-Regulations

No additional information available

National regulations

No additional information available

15.3. State regulations

No additional information available

SECTION 16 Other information

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Revision date : 1/17/2025

Date of issue : 8/31/2015

Other information : None.

Full text of hazard classes and H-statements

H400	Very toxic to aquatic life
H410	Very toxic to aquatic life with long lasting effects

Abbreviations and acronyms

ACGIH	American Conference of Government Industrial Hygienists
ADN	European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways
ADR	European Agreement concerning the International Carriage of Dangerous Goods by Road
ATE	Acute Toxicity Estimate

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Abbreviations and acronyms	
BCF	Bioconcentration factor
BLV	Biological limit value
BOD	Biochemical oxygen demand (BOD)
CAS-No.	Chemical Abstract Service number
CLP	Classification Labelling Packaging Regulation; Regulation (EC) No 1272/2008
COD	Chemical oxygen demand (COD)
CSA	Chemical safety assessment
DMEL	Derived Minimal Effect level
DNEL	Derived-No Effect Level
EC-No.	European Community number
EC50	Median effective concentration
ED	Endocrine disruptor
EN	European Standard
EWC	European waste catalogue
IARC	International Agency for Research on Cancer
IATA	International Air Transport Association
IMDG	International Maritime Dangerous Goods
LC50	Median lethal concentration
LD50	Median lethal dose
LOAEL	Lowest Observed Adverse Effect Level
Log Kow	Partition coefficient n-octanol/water (Log Kow)
Log Pow	Partition coefficient n-octanol/water (Log Pow)
MAK	maximum workplace concentration
NOAEC	No-Observed Adverse Effect Concentration
NOAEL	No-Observed Adverse Effect Level
NOEC	No-Observed Effect Concentration
N.O.S.	Not Otherwise Specified
OECD	Organisation for Economic Co-operation and Development
OEL	Occupational Exposure Limit
OSHA	Occupational Safety & Health Administration
PBT	Persistent Bioaccumulative Toxic
PNEC	Predicted No-Effect Concentration
PPE	Personal protection equipment
RID	Regulations concerning the International Carriage of Dangerous Goods by Rail
SDS	Safety Data Sheet
STP	Sewage treatment plant

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Abbreviations and acronyms	
TF	Technical function
ThOD	Theoretical oxygen demand (ThOD)
TLM	Median Tolerance Limit
TWA	Time Weighted Average
VOC	Volatile Organic Compounds
vPvB	Very Persistent and Very Bioaccumulative
UFI	Unique Formula Identifier

Safety Data Sheet (SDS), USA

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.



1-(3-sulfonatopropyl)pyridinium

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations
Date of issue: 12/9/2015 Revision date: 1/17/2025 Supersedes: 1/14/2025 Version: 10.0

SECTION 1 Identification

1.1. Product identifier

Product form : Substance
Substance name : 1-(3-sulfonatopropyl)pyridinium
Chemical name : NDSB-201 (3-(1-Pyridino)-1-Propane Sulfonate)
CAS-No. : 15471-17-7
Product code : 024N
Formula : C8H11NO3S
BIG No : 31169

1.2. Other means of identification

Synonyms : 1-(3-sulfopropyl)pyridinium betain / 1-(3-sulfopropyl)pyridinium hydroxide, inner salt / 3-(1-pyridinio)-1-propanesulfonate / PPS (=1-(3-sulfonatopropyl)pyridinium / pyridinium, 1-(3-sulfopropyl)-, hydroxide, inner salt
EC-No. : 239-491-3

1.3. Recommended use of the chemical and restrictions on use

No additional information available

1.4. Supplier's details

G-Biosciences/ Geno Technology, Inc.
9800 Page Avenue
St. Louis, MO 63132-1429, USA
Tel.1-800-628-7730
www.GBiosciences.com

1.5. Emergency phone number

Emergency number : Chemtrec **1-800-424-9300** (USA/Canada), **+1-703-527-3887** (Intl)

SECTION 2 Hazard Identification

2.1. Classification of the substance or mixture

GHS US classification

Not classified

2.2. Label elements

GHS US labeling

No labeling applicable

2.3. Hazards associated with known or reasonably anticipated uses

No additional information available

2.4. Hazards not otherwise classified

No additional information available

2.5. Unknown acute toxicity

No additional information available

1-(3-sulfonatopropyl)pyridinium

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SECTION 3 Composition/information on ingredients

3.1. Substances

Substance type : Mono-constituent

Name	Common Name (Synonyms)	Product identifier	%	GHS US classification
1-(3-sulfonatopropyl)pyridinium (Main constituent)	1-(3-sulfopropyl)pyridinium betain / 1-(3-sulfopropyl)pyridinium hydroxide, inner salt / 3-(1-pyridinio)-1-propanesulfonate / PPS (=1-(3-sulfonatopropyl)pyridinium / pyridinium, 1-(3-sulfopropyl)-, hydroxide, inner salt	CAS-No.: 15471-17-7	100	Not classified

Full text of hazard classes and H-statements : see section 16

3.2. Mixtures

Not applicable

SECTION 4 First aid measures

4.1. Description of necessary first-aid measures

First-aid measures general	: If you feel unwell, consult a doctor/medical service.
First-aid measures after inhalation	: Remove victim into fresh air. In case of respiratory problems, consult a doctor/medical service.
First-aid measures after skin contact	: If possible, wipe up/dry remove chemical. Then rinse/shower immediately with (lukewarm) water.
First-aid measures after eye contact	: Rinse immediately with (lukewarm) water. Remove contact lenses, if present and easy to do. Continue rinsing. If irritation persists, consult a doctor/medical service.
First-aid measures after ingestion	: Rinse mouth with water. If you feel unwell, consult a doctor/medical service. Do not wait for symptoms to occur to consult Poison Center.
Self protection of the first-aider	: First aid workers will be equipped with suitable personal protective equipment.

4.2. Most important symptoms/effects, acute and delayed

Potential Adverse human health effects and symptoms	: Based on available data, the classification criteria are not met.
Symptoms/effects	: Not expected to present a significant hazard under anticipated conditions of normal use.
Symptoms/effects after inhalation	: Irritation of the respiratory tract. Irritation of the nasal mucous membranes.
Symptoms/effects after skin contact	: Tingling/irritation of the skin.
Symptoms/effects after eye contact	: Irritation of the eye tissue.
Symptoms/effects after ingestion	: No effects known.
Chronic symptoms	: No effects known.

4.3. Indication of immediate medical attention and special treatment needed, if necessary

Other medical advice or treatment : Treat symptomatically.

1-(3-sulfonatopropyl)pyridinium

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SECTION 5: Fire-fighting measures

5.1. Suitable (and unsuitable) extinguishing media

- Suitable extinguishing media : Quick-acting ABC powder extinguisher. Class A foam extinguisher. Water (quick-acting extinguisher, reel). Water. Class A foam.
- Unsuitable extinguishing media : Quick-acting BC powder extinguisher. Quick-acting CO2 extinguisher.

5.2. Specific hazards arising from the chemical

- Fire hazard : DIRECT FIRE HAZARD: Not classified as flammable. In finely divided state: increased fire hazard. INDIRECT FIRE HAZARD: Heating increases the fire hazard.
- Explosion hazard : DIRECT EXPLOSION HAZARD: May form explosible dust-air mixture if dispersed. INDIRECT EXPLOSION HAZARD: Dust cloud can be ignited by a spark.
- Hazardous decomposition products in case of fire : Toxic fumes may be released.

5.3. Special protective equipment and precautions for fire-fighters

- Precautionary measures fire : Exposure to fire/heat: keep upwind. Exposure to fire/heat: have neighbourhood close doors and windows.
- Firefighting instructions : Dilute toxic gases with water spray. Take account of toxic fire-fighting water. Use water moderately and if possible collect or contain it.
- Protection during firefighting : Heat/fire exposure: self-contained breathing apparatus (EN 136 + EN 137).

SECTION 6 Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

- General measures : Notify authorities if product enters sewers or public waters. Absorb spillage to prevent material-damage.

For non-emergency personnel

- Protective equipment : Gloves (EN 374). Protective clothing (EN 14605 or EN 13034). Dust cloud production: self-contained breathing apparatus (EN 136 + EN 137).
- Emergency procedures : Mark the danger area. Prevent dust cloud formation, e.g. by wetting. No naked flames. Wash contaminated clothes.
- Measures in case of dust release : In case of dust production: keep upwind. Dust production: have neighbourhood close doors and windows.

For emergency responders

- Protective equipment : Do not attempt to take action without suitable protective equipment. Equip cleanup crew with proper protection. For further information refer to section 8: "Exposure controls/personal protection".
- Emergency procedures : Ventilate area. Evacuate unnecessary personnel.
- Environmental precautions : Prevent soil and water pollution. Prevent spreading in sewers.

6.2. Methods and materials for containment and cleaning up

- For containment : Contain released product, collect/pump into suitable containers. Plug the leak, cut off the supply. Knock down/dilute dust cloud with water spray. Powdered form: no compressed air for pumping over spills.
- Methods for cleaning up : Stop dust cloud by humidifying. Scoop solid spill into closing containers. Powdered: do not use compressed air for pumping over spills. Clean contaminated surfaces with an excess of water. Wash clothing and equipment after handling.
- Other information : Dispose of materials or solid residues at an authorized site.

See Heading 8. Exposure controls and personal protection. For further information refer to section 13.

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SECTION 7 Handling and storage

7.1. Precautions for safe handling

Precautions for safe handling	: Avoid raising dust. Keep away from naked flames/heat. In finely divided state: use spark-/explosionproof appliances. Finely divided: keep away from ignition sources/sparks. Carry operations in the open/under local exhaust/ventilation or with respiratory protection. Comply with the legal requirements. Clean contaminated clothing. Keep container tightly closed. Powdered form: no compressed air for pumping over.
Hygiene measures	: Wash contaminated clothing before reuse. Do not eat, drink or smoke when using this product. Always wash hands after handling the product.
Additional hazards when processed	: Not expected to present a significant hazard under anticipated conditions of normal use.

7.2. Conditions for safe storage, including incompatibilities

Technical measures	: Keep in a cool, well-ventilated place away from heat.
Storage conditions	: Keep cool. Keep only in the original container in a cool, well ventilated place away from : Keep container closed when not in use. Store locked up. Store in a well-ventilated place. Keep container tightly closed.
Storage area	: Meet the legal requirements. Store in a dry area.
Incompatible products	: Strong bases. Strong acids.
Incompatible materials	: Sources of ignition. Direct sunlight.
Information on mixed storage	: KEEP SUBSTANCE AWAY FROM: oxidizing agents.
Heat-ignition	: KEEP SUBSTANCE AWAY FROM: heat sources. ignition sources.
Special rules on packaging	: SPECIAL REQUIREMENTS: closing. correctly labelled. meet the legal requirements. Secure fragile packagings in solid containers.
Packaging materials	: Store always product in container of same material as original container.

SECTION 8 Exposure controls/personal protection

8.1. Control parameters

No additional information available

8.2. Appropriate engineering controls

Appropriate engineering controls	: Ensure good ventilation of the work station.
Environmental exposure controls	: Avoid release to the environment.

8.3. Individual protection measures, such as personal protective equipment

Personal protective equipment:

Avoid all unnecessary exposure.

Hand protection:
Gloves
Eye protection:
Safety glasses (EN 166). In case of dust production: protective goggles (EN 166)
Skin and body protection:
Protective clothing (EN 14605 or EN 13034)
Respiratory protection:
Dust production: dust mask with filter type P1

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Personal protective equipment symbol(s):



Other information:

Do not eat, drink or smoke during use.

SECTION 9 Physical and chemical properties

9.1. Basic physical and chemical properties

Physical state	: Solid
Appearance	: Crystalline solid. Crystalline powder.
Color	: White
Odor	: characteristic
Odor threshold	: No data available
pH	: No data available
Melting point	: 280 °C
Freezing point	: Not applicable
Boiling point	: Not applicable
Flash point	: Not applicable (solid)
Flammability (solid, gas)	: Non flammable.
Vapor pressure	: 0.00000042 hPa (25 °C, MPBPWin v1.43, EpiSuite)
Relative vapor density at 20°C	: Not applicable
Relative density	: No data available
Molecular mass	: 201.24 g/mol
Solubility	: No data available
Partition coefficient n-octanol/water (Log Pow)	: No data available
Auto-ignition temperature	: Not applicable
Decomposition temperature	: 280 °C
Viscosity, kinematic	: Not applicable
Explosion limits	: Not applicable
Particle characteristics	: No data available

9.2. Data relevant with regard to physical hazard classes (supplemental)

Other properties : Hygroscopic.

SECTION 10 Stability and reactivity

10.1. Reactivity

The product is non-reactive under normal conditions of use, storage and transport.

10.2. Chemical stability

Unstable on exposure to moisture.

10.3. Possibility of hazardous reactions

No dangerous reactions known under normal conditions of use. Not established.

10.4. Conditions to avoid

None under recommended storage and handling conditions (see section 7). Direct sunlight. Extremely high or low temperatures.

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10.5. Incompatible materials

Strong acids. Strong bases.

10.6. Hazardous decomposition products

Hazardous decomposition products. fume. Carbon monoxide. Carbon dioxide.

SECTION 11 Toxicological information

11.1. Information on toxicological effects

Acute toxicity (oral)	: Not classified
Acute toxicity (dermal)	: Not classified
Acute toxicity (inhalation)	: Not classified
Skin corrosion/irritation	: Not classified
Serious eye damage/irritation	: Not classified
Respiratory or skin sensitization	: Not classified
Germ cell mutagenicity	: Not classified
Carcinogenicity	: Not classified
Reproductive toxicity	: Not classified
STOT-single exposure	: Not classified
STOT-repeated exposure	: Not classified
Aspiration hazard	: Not classified

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Viscosity, kinematic	Not applicable
Potential Adverse human health effects and symptoms	: Based on available data, the classification criteria are not met.
Symptoms/effects	: Not expected to present a significant hazard under anticipated conditions of normal use.
Symptoms/effects after inhalation	: Irritation of the respiratory tract. Irritation of the nasal mucous membranes.
Symptoms/effects after skin contact	: Tingling/irritation of the skin.
Symptoms/effects after eye contact	: Irritation of the eye tissue.
Symptoms/effects after ingestion	: No effects known.
Chronic symptoms	: No effects known.

SECTION 12 Ecological information

12.1. Ecotoxicity

Ecology - general	: The product is not considered harmful to aquatic organisms or to cause long-term adverse effects in the environment.
Ecology - air	: Not included in the list of substances which may contribute to the greenhouse effect (IPCC). Not included in the list of fluorinated greenhouse gases (Regulation (EU) No 2024/573).
Ecology - water	: Mild water pollutant (surface water). No data available on ecotoxicity.
Hazardous to the aquatic environment, short-term (acute)	: Not classified
Hazardous to the aquatic environment, long-term (chronic)	: Not classified

12.2. Persistence and degradability

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Persistence and degradability	Biodegradability in water: no data available.
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12.3. Bioaccumulative potential

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Bioaccumulative potential	No bioaccumulation data available.
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12.4. Mobility in soil

No additional information available

12.5. Other adverse effects

Ozone : Not classified
Fluorinated greenhouse gases : No
Other information : Avoid release to the environment.

SECTION 13 Disposal considerations

Regional legislation (waste) : Disposal must be done according to official regulations.
Waste treatment methods : Waste treatment methods.
Sewage disposal recommendations : Disposal must be done according to official regulations.
Product/Packaging disposal recommendations : Remove waste in accordance with local and/or national regulations. Hazardous waste shall not be mixed together with other waste. Different types of hazardous waste shall not be mixed together if this may entail a risk of pollution or create problems for the further management of the waste. Hazardous waste shall be managed responsibly. All entities that store, transport or handle hazardous waste shall take the necessary measures to prevent risks of pollution or damage to people or animals. Remove to an authorized incinerator equipped with an afterburner and a flue gas scrubber with energy recovery.
Additional information : Hazardous waste according to Directive 2008/98/EC, as amended by Regulation (EU) No 1357/2014 and Regulation (EU) No 2017/997.
Ecological waste information : Avoid release to the environment.

SECTION 14 Transport information

In accordance with DOT / TDG / IATA

14.1. UN number

Not regulated for transport

14.2. UN Proper Shipping Name

Proper Shipping Name (DOT) : Not applicable
Proper Shipping Name (TDG) : Not applicable
Proper Shipping Name (IATA) : Not regulated

14.3. Transport hazard class(es)

DOT
Transport hazard class(es) (DOT) : Not applicable

TDG
Transport hazard class(es) (TDG) : Not applicable

IATA
Transport hazard class(es) (IATA) : Not regulated

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14.4. Packing group

Packing group (DOT) : Not applicable
Packing group (TDG) : Not applicable
Packing group (IATA) : Not regulated

14.5. Environmental hazards

Other information : No supplementary information available.

14.6. Transport in bulk

Not applicable

14.7. Special precautions for user

DOT
No data available

TDG
No data available

IATA
Not regulated

SECTION 15 Regulatory information

15.1. Federal regulations

Commercial status of components according to the United States Environmental Protection Agency's Toxic Substances Control Act (TSCA):

Name	CAS-No.	Listing	Commercial status	Flags
1-(3-sulfonatopropyl)pyridinium	15471-17-7	Not present	-	

15.2. International regulations

CANADA

No additional information available

EU-Regulations

No additional information available

National regulations

No additional information available

15.3. State regulations

No additional information available

SECTION 16 Other information

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Revision date : 1/17/2025
Date of issue : 12/9/2015
Other information : None.

Abbreviations and acronyms

ACGIH	American Conference of Government Industrial Hygienists
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Abbreviations and acronyms	
ADN	European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways
ADR	European Agreement concerning the International Carriage of Dangerous Goods by Road
ATE	Acute Toxicity Estimate
BCF	Bioconcentration factor
BLV	Biological limit value
BOD	Biochemical oxygen demand (BOD)
CAS-No.	Chemical Abstract Service number
CLP	Classification Labelling Packaging Regulation; Regulation (EC) No 1272/2008
COD	Chemical oxygen demand (COD)
CSA	Chemical safety assessment
DMEL	Derived Minimal Effect level
DNEL	Derived-No Effect Level
EC-No.	European Community number
EC50	Median effective concentration
ED	Endocrine disruptor
EN	European Standard
EWC	European waste catalogue
IARC	International Agency for Research on Cancer
IATA	International Air Transport Association
IMDG	International Maritime Dangerous Goods
LC50	Median lethal concentration
LD50	Median lethal dose
LOAEL	Lowest Observed Adverse Effect Level
Log Kow	Partition coefficient n-octanol/water (Log Kow)
Log Pow	Partition coefficient n-octanol/water (Log Pow)
MAK	maximum workplace concentration
NOAEC	No-Observed Adverse Effect Concentration
NOAEL	No-Observed Adverse Effect Level
NOEC	No-Observed Effect Concentration
N.O.S.	Not Otherwise Specified
OECD	Organisation for Economic Co-operation and Development
OEL	Occupational Exposure Limit
OSHA	Occupational Safety & Health Administration
PBT	Persistent Bioaccumulative Toxic
PNEC	Predicted No-Effect Concentration
PPE	Personal protection equipment

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Abbreviations and acronyms	
RID	Regulations concerning the International Carriage of Dangerous Goods by Rail
SDS	Safety Data Sheet
STP	Sewage treatment plant
TF	Technical function
ThOD	Theoretical oxygen demand (ThOD)
TLM	Median Tolerance Limit
TWA	Time Weighted Average
VOC	Volatile Organic Compounds
vPvB	Very Persistent and Very Bioaccumulative
UFI	Unique Formula Identifier

NFPA health hazard

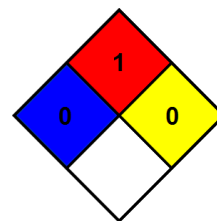
: 0 - Materials that, under emergency conditions, would offer no hazard beyond that of ordinary combustible materials.

NFPA fire hazard

: 1 - Materials that must be preheated before ignition can occur.

NFPA reactivity

: 0 - Material that in themselves are normally stable, even under fire conditions.



Safety Data Sheet (SDS), USA

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.