



G-Biosciences, St Louis, MO, USA ♦ 1-800-628-7730 ♦ 1-314-991-6034 ♦ technical@GBiosciences.com

A Geno Technology, Inc. (USA) brand name

Safety Data Sheet

JC-1 Mitochondrial Membrane Potential Assay

Cat. # 786-1321



think proteins! think G-Biosciences!

www.GBiosciences.com



DMSO [Sterile Filtered]

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations
Date of issue: 12/30/2015 Revision date: 11/24/2025 Supersedes: 1/17/2025 Version: 11.0

SECTION 1 Identification

1.1. Product identifier

Product form : Substance
Substance name : DMSO [Sterile Filtered]
CAS-No. : 67-68-5
Product code : 184D
Formula : C₂H₆O_S
BIG No : 10461

1.2. Other means of identification

Synonyms : A 10846 / deltan / demasorb / demavet / demeso / demsodrox / dermasorb / dimethyl sulfoxide / dimexide / dipirartril, tropico / DMS-70 / DMS-90 / DMSO (= dimethyl sulfoxide) / dolicur / doligur / domoso / dromisol / durasorb / gamasol 90 / hyadur / infiltrina / M 176 / methane, sulfinylbis- / methyl sulfoxide / methylsulfinylmethane / NSC-763 / rimso-5 / rimso-50 / somipront / SQ 9453 / sulfinyl bis(methane) / syntexan / topsym
EC-No. : 200-664-3

1.3. Recommended use of the chemical and restrictions on use

Use of the substance/mixture : Solvent,Pharmaceutical product: active ingredient,Cleansing product: component

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

Flammable liquid, Category 4 H227 Combustible liquid.
Full text of H statements : see section 16

2.2. Label elements

GHS US labeling

Signal word (GHS US) : Warning
Hazard statements (GHS US) : H227 - Combustible liquid
Precautionary statements (GHS US) : P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P280 - Wear protective gloves, protective clothing, eye protection, face protection, and hearing protection.
P370+P378 - In case of fire: Use appropriate media to extinguish.
P403 - Store in a well-ventilated place.
P501 - Dispose of contents and/or container to hazardous or special waste collection point, in accordance with local, regional, national and/or international regulations.

DMSO [Sterile Filtered]

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

Substance type : Mono-constituent

Name	Common Name (Synonyms)	Product identifier	%	GHS US classification
DMSO [Sterile Filtered]	A 10846 / deltan / demasorb / demavet / demeso / demsodrox / dermasorb / dimethyl sulfoxide / dimexide / dipirartril, tropico / DMS-70 / DMS-90 / DMSO (= dimethyl sulfoxide) / dolicur / doligur / domoso / dromisol / durasorb / gamasol 90 / hyadur / infiltrina / M 176 / methane, sulfinylbis- / methyl sulfoxide / methylsulfinylmethane / NSC-763 / rimso-5 / rimso-50 / somipront / SQ 9453 / sulfinyl bis(methane) / syntexan / topsym	CAS-No.: 67-68-5	100	Flam. Liq. 4, H227

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

3.2. Mixtures

Not applicable

DMSO [Sterile Filtered]

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	: If you feel unwell, consult a doctor/medical service. 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. Remove victim into fresh air. In case of respiratory problems, consult a doctor/medical service. Allow affected person to breathe fresh air. Allow the victim to rest.
First-aid measures after skin contact	: If possible, wipe up/dry remove chemical. Then rinse/shower immediately with (lukewarm) water. 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 (lukewarm) water. Remove contact lenses, if present and easy to do. Continue rinsing. If irritation persists, consult a doctor/medical service. 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 with water. If you feel unwell, consult a doctor/medical service. Do not wait for symptoms to occur to consult Poison Center. 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	: Non-toxic if swallowed (LD50 oral, rat > 5000 mg/kg). Slightly irritant to skin. Non-toxic in contact with skin (LD50 skin > 5000 mg/kg). Slightly irritant to 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	: EXPOSURE TO HIGH CONCENTRATIONS: Irritation of the respiratory tract.
Symptoms/effects after skin contact	: Slight irritation. Red skin.
Symptoms/effects after eye contact	: Slight irritation. Redness of the eye tissue. Lacrimation.
Symptoms/effects after ingestion	: AFTER INGESTION OF HIGH QUANTITIES: Headache. Nausea. Vomiting. Abdominal pain. Dizziness.
Chronic symptoms	: Skin rash/inflammation. Feeling of weakness. Headache. Breath has characteristic odour.

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

Other medical advice or treatment	: Treat symptomatically.
-----------------------------------	--------------------------

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. 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	: DIRECT FIRE HAZARD: Material presenting a fire hazard. INDIRECT FIRE HAZARD: Temperature above flashpoint: higher fire/explosion hazard. Reactions involving a fire hazard: see "Reactivity Hazard". Combustible liquid.
Explosion hazard	: INDIRECT EXPLOSION HAZARD: Reactions with explosion hazards: see "Reactivity Hazard". May form flammable/explosive vapor-air mixture.
Hazardous decomposition products in case of fire	: Toxic fumes may be released.

DMSO [Sterile Filtered]

Safety Data Sheet

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

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: 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. Dilute toxic gases with water spray. Take account of toxic/corrosive precipitation water. 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	: Heat/fire exposure: self-contained breathing apparatus (EN 136 + EN 137). 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	: Remove ignition sources. Use special care to avoid static electric charges. No open flames. No smoking. 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. 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	: 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. Take up liquid spill into absorbent material, e.g.: sand, earth, vermiculite or kieselguhr. Scoop absorbed substance into closing containers. For minor spillages wash down with excess of water. Clean contaminated surfaces with an excess of water. Wash clothing and equipment after handling. 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.

DMSO [Sterile Filtered]

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. Wear personal protective equipment. Use earthed equipment. At temperature > flashpoint: use spark-/explosionproof appliances. Keep away from naked flames/heat. In finely divided state: use spark-/explosionproof appliances. Finely divided: keep away from ignition sources/sparks. Measure the concentration in the air regularly. 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. 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. No open flames. No smoking.
Hygiene measures	: Do not eat, drink or smoke when using this product. Always wash hands after handling the product.
Additional hazards when processed	: Handle empty containers with care because residual vapors are flammable. Keep away from heat/sparks/open flames/hot surfaces. - No smoking.

7.2. Conditions for safe storage, including incompatibilities

Technical measures	: Proper grounding procedures to avoid static electricity should be followed.
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. Keep in fireproof place.
Storage area	: Store at ambient temperature. Meet the legal requirements. Store in a dry area. Keep container in a well-ventilated place. Provide the tank with earthing. Keep out of direct sunlight. May be stored under nitrogen.
Incompatible products	: Strong bases. Strong acids.
Incompatible materials	: Sources of ignition. Direct sunlight. Heat sources.
Information on mixed storage	: KEEP SUBSTANCE AWAY FROM: oxidizing agents. reducing agents. (strong) acids. (strong) bases. halogens. water/moisture.
Storage temperature	: > 20 °C
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: stainless steel. polyethylene. PTFE. MATERIAL TO AVOID: zinc. steel. plastics.

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: neoprene (chloroprene rubber). Good resistance: latex. butyl rubber. Tetrafluoroethylene. Poor resistance: Nitrile rubber. Polyvinylchloride (PVC). Polyvinylalcohol (PVA). Viton. Natural rubber

DMSO [Sterile Filtered]

Safety Data Sheet

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

Hand protection:
Protective gloves against chemicals (EN 374). Wear protective gloves.
Eye protection:
Eye protection not required in normal conditions. Chemical goggles or safety glasses. Safety glasses
Skin and body protection:
Protective clothing (EN 14605 or EN 13034)
Respiratory protection:
Full face mask with filter type A at conc. in air > exposure limit. 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	: Almost odourless Garlic odour
Odor threshold	: No data available
pH	: No data available in the literature
Melting point	: 19 °C
Freezing point	: No data available
Boiling point	: 189 °C (1013 hPa)
Flash point	: 87 °C (Closed cup, 1013 hPa, ASTM D93: Flash point (Pensky-Martens))
Flammability (solid, gas)	: Not applicable. Combustible liquid.
Vapor pressure	: 0.56 hPa (20 °C, Equivalent or similar to EU Method A.4)
Vapor pressure at 50°C	: 4.1 hPa (Equivalent or similar to EU Method A.4)
Relative vapor density at 20°C	: 2.7
Relative density	: 1.1 (20 °C, Equivalent or similar to EU Method A.3)
Relative density of saturated gas/air mixture	: 1
Density	: 1101 kg/m ³ (20 °C)
Molecular mass	: 78.14 g/mol
Solubility	: Soluble in water. Soluble in ethanol. Soluble in ether. Soluble in acetone. Soluble in chloroform. Water: 100 g/100ml (25 °C, hydrolyzes, Calculated)
Partition coefficient n-octanol/water (Log Pow)	: -1.4 (Experimental value, 20 °C)
Auto-ignition temperature	: 300 – 302 °C (1013 hPa, T3)
Decomposition temperature	: ≥ 190 °C (1013 hPa)
Viscosity, kinematic	: 1.95 mm ² /s (20 °C, Calculated)
Viscosity, dynamic	: 2.14 mPa·s (20 °C)
Explosion limits	: 2.6 – 28.5 vol % Lower explosion limit: 2.6 vol % Upper explosion limit: 28.5 vol %
Explosive properties	: Not classified.
Oxidizing properties	: Not classified.
Particle characteristics	: Particle size : Not applicable (liquid)

DMSO [Sterile Filtered]

Safety Data Sheet

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

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

Minimum ignition energy	: No data available in the literature
Specific conductivity	: 200000 pS/m
SADT	: Not applicable
Saturation concentration	: 8 g/m ³
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

Reacts violently with many compounds e.g.: with (strong) oxidizers, with (some) halogens compounds and with (some) acids: (increased) risk of fire/explosion.

10.2. Chemical stability

Hygroscopic. Combustible liquid. May form flammable/explosive vapor-air mixture.

10.3. Possibility of hazardous reactions

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

10.4. Conditions to avoid

Avoid contact with hot surfaces. No flames, no sparks. Eliminate all sources of ignition. Direct sunlight. Extremely high or low temperatures. Open flame. Overheating. Heat. Sparks.

10.5. Incompatible materials

Strong acids. Strong bases.

10.6. Hazardous decomposition products

Hazardous decomposition products. fume. Carbon monoxide. Carbon dioxide. May release flammable gases.

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

DMSO [Sterile Filtered] (67-68-5)	
LD50 oral rat	28300 mg/kg body weight (Equivalent or similar to OECD 401, Rat, Male / female, Experimental value, Oral, 14 day(s))
LD50 dermal rat	40000 mg/kg body weight (Rat, Male / female, Experimental value, Dermal, 14 day(s))
ATE US (oral)	28300 mg/kg body weight
ATE US (dermal)	40000 mg/kg body weight

Skin corrosion/irritation	: Not classified pH: No data available in the literature
---------------------------	---

DMSO [Sterile Filtered] (67-68-5)	
pH	No data available in the literature

DMSO [Sterile Filtered]

Safety Data Sheet

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

Serious eye damage/irritation : Not classified
pH: No data available in the literature

DMSO [Sterile Filtered] (67-68-5)	
pH	No data available in the literature

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

DMSO [Sterile Filtered] (67-68-5)	
Viscosity, kinematic	1.95 mm ² /s (20 °C, Calculated)

DMSO [Sterile Filtered] (67-68-5)	
Viscosity, kinematic	1.95 mm ² /s (20 °C, Calculated)

Potential Adverse human health effects and symptoms : Non-toxic if swallowed (LD50 oral, rat > 5000 mg/kg). Slightly irritant to skin. Non-toxic in contact with skin (LD50 skin > 5000 mg/kg). Slightly irritant to 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 : EXPOSURE TO HIGH CONCENTRATIONS: Irritation of the respiratory tract.
Symptoms/effects after skin contact : Slight irritation. Red skin.
Symptoms/effects after eye contact : Slight irritation. Redness of the eye tissue. Lacrimation.
Symptoms/effects after ingestion : AFTER INGESTION OF HIGH QUANTITIES: Headache. Nausea. Vomiting. Abdominal pain. Dizziness.
Chronic symptoms : Skin rash/inflammation. Feeling of weakness. Headache. Breath has characteristic odour.

SECTION 12 Ecological information

12.1. Ecotoxicity

Ecology - general : Not classified as dangerous for the environment according to the criteria of Regulation (EC) No 1272/2008.
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 : Not harmful to crustacea (Daphnia). Not harmful to fishes. Groundwater pollutant. Inhibition of activated sludge. Not harmful to algae.
Hazardous to the aquatic environment, short-term (acute) : Not classified
Hazardous to the aquatic environment, long-term (chronic) : Not classified

DMSO [Sterile Filtered] (67-68-5)	
LC50 - Fish [1]	> 25 g/l (OECD 203: Fish, Acute Toxicity Test, 96 h, Danio rerio, Static system, Fresh water, Experimental value, Nominal concentration)
EC50 - Crustacea [1]	25 g/l (OECD 202: Daphnia sp. Acute Immobilisation Test, 48 h, Daphnia magna, Static system, Fresh water, Experimental value)
ErC50 algae	17 g/l (OECD 201: Alga, Growth Inhibition Test, 72 h, Pseudokirchneriella subcapitata, Static system, Fresh water, Experimental value, Nominal concentration)

DMSO [Sterile Filtered]

Safety Data Sheet

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

12.2. Persistence and degradability

DMSO [Sterile Filtered] (67-68-5)

Persistence and degradability	Rapidly degradable
-------------------------------	--------------------

DMSO [Sterile Filtered] (67-68-5)

Persistence and degradability	Not readily biodegradable in water, Not established.
-------------------------------	--

12.3. Bioaccumulative potential

DMSO [Sterile Filtered] (67-68-5)

Partition coefficient n-octanol/water (Log Pow)	-1.4 (Experimental value, 20 °C)
---	----------------------------------

Bioaccumulative potential	Not bioaccumulative. Not established.
---------------------------	---------------------------------------

12.4. Mobility in soil

DMSO [Sterile Filtered] (67-68-5)

Surface tension	43.5 mN/m (20 °C, 100 vol %)
-----------------	------------------------------

Organic Carbon Normalized Adsorption Coefficient (Log Koc)	0.64 (log Koc, SRC PCKOCWIN v1.66, Calculated 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 : Do not discharge into drains or the environment. Dispose of at authorized waste collection point. Remove waste in accordance with local and/or national regulations. 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 and Regulation (EU) No 2017/997. Handle empty containers with care because residual vapors are flammable. 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 regulated

DMSO [Sterile Filtered]

Safety Data Sheet

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

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
Not applicable

TDG
Not applicable

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
DMSO [Sterile Filtered]	67-68-5	Not present	-	

15.2. International regulations

CANADA

No additional information available

EU-Regulations

No additional information available

National regulations

No additional information available

DMSO [Sterile Filtered]

Safety Data Sheet

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

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 : 11/24/2025
Date of issue : 12/30/2015
Other information : None.

Full text of hazard classes and H-statements

H227	Combustible liquid
------	--------------------

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)

DMSO [Sterile Filtered]

Safety Data Sheet

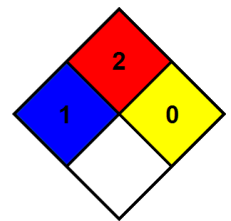
according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Abbreviations and acronyms	
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 : 1 - Materials that, under emergency conditions, can cause significant irritation.

NFPA fire hazard : 2 - Materials that must be moderately heated or exposed to relatively high ambient temperatures 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.



JC-1 Dye

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations
Date of issue: 10/20/2017 Revision date: 1/17/2025 Supersedes: 1/14/2025 Version: 9.0

SECTION 1 Identification

1.1. Product identifier

Product form : Substance
Substance name : JC-1 Dye
Chemical name : 5,5',6,6'-Tetrachloro-1,1',3,3'-tetraethylbenzimidazolocarboyanine iodide
CAS-No. : 3520-43-2
Product code : 105J

1.2. Other means of identification

No additional information available

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

JC-1 Dye

Safety Data Sheet

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

SECTION 3 Composition/information on ingredients

3.1. Substances

Name	Common Name (Synonyms)	Product identifier	%	GHS US classification
JC-1 Dye (Main constituent)		CAS-No.: 3520-43-2	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	: 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	: 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. Dust of the product, if present, may cause respiratory irritation after an excessive inhalation exposure.
Symptoms/effects after skin contact	: None under normal conditions. Dust may cause irritation in skin folds or by contact in combination with tight clothing.
Symptoms/effects after eye contact	: None under normal conditions. Dust from this product may cause 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.

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.

JC-1 Dye

Safety Data Sheet

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

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

5.3. Special protective equipment and precautions for fire-fighters

- 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 : 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.

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 : Using a clean shovel, put the material in a dry container and cover without compressing it.
- Methods for cleaning up : Mechanically recover the product. 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.

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.
- Incompatible products : Strong bases. Strong acids.
- Incompatible materials : Sources of ignition. Direct sunlight.

JC-1 Dye

Safety Data Sheet

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

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:

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 : Solid
Color : Colorless
Odor : characteristic
Odor threshold : No data available
pH : No data available
Melting point : No data available
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 : No data available
Relative density : No data available
Solubility : No data available
Partition coefficient n-octanol/water (Log Pow) : No data available

JC-1 Dye

Safety Data Sheet

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

Auto-ignition temperature	: Not applicable
Decomposition temperature	: No data available
Viscosity, kinematic	: Not applicable
Explosion limits	: Not applicable
Particle characteristics	: No data available

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

No additional information available

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.

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

JC-1 Dye (3520-43-2)

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.

JC-1 Dye

Safety Data Sheet

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

Symptoms/effects after inhalation	: None under normal conditions. Dust of the product, if present, may cause respiratory irritation after an excessive inhalation exposure.
Symptoms/effects after skin contact	: None under normal conditions. Dust may cause irritation in skin folds or by contact in combination with tight clothing.
Symptoms/effects after eye contact	: None under normal conditions. Dust from this product may cause 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.
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

JC-1 Dye (3520-43-2)

Persistence and degradability	Not established.
-------------------------------	------------------

12.3. Bioaccumulative potential

JC-1 Dye (3520-43-2)

Bioaccumulative potential	Not established.
---------------------------	------------------

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	: 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

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

JC-1 Dye

Safety Data Sheet

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

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
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
JC-1 Dye	3520-43-2	Not present	-	

15.2. International regulations

CANADA

JC-1 Dye (3520-43-2)

Not listed on the Canadian DSL (Domestic Substances List)/NDSL (Non-Domestic Substances List)

JC-1 Dye

Safety Data Sheet

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

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 : 10/20/2017

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)

JC-1 Dye

Safety Data Sheet

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

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.



MMP Assay Buffer [5X]

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations
Date of issue: 8/24/2017 Revision date: 1/17/2025 Supersedes: 1/14/2025 Version: 9.0

SECTION 1 Identification

1.1. Product identifier

Product form : Mixture
Product name : MMP Assay Buffer [5X]
Product code : 095M

1.2. Other means of identification

No additional information available

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

SECTION 3 Composition/information on ingredients

3.1. Substances

Not applicable

MMP Assay Buffer [5X]

Safety Data Sheet

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

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	: 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	: 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	: 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.
-----------------------------------	--------------------------

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

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.

MMP Assay Buffer [5X]

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 : Wear recommended personal protective equipment.
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 : 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.

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.

Incompatible products : Strong bases. Strong acids.

Incompatible materials : Sources of ignition. Direct sunlight.

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

MMP Assay Buffer [5X]

Safety Data Sheet

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

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
Color	: Colorless
Odor	: characteristic
Odor threshold	: No data available
pH	: No data available
Melting point	: Not applicable
Freezing point	: No data available
Boiling point	: No data available
Flash point	: No data available
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	: No data available
Partition coefficient n-octanol/water (Log Pow)	: No data available
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)

No additional information available

MMP Assay Buffer [5X]

Safety Data Sheet

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

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.

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

MMP Assay Buffer [5X]

Safety Data Sheet

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

Hazardous to the aquatic environment, long-term (chronic) : Not classified

12.2. Persistence and degradability

MMP Assay Buffer [5X]	
Persistence and degradability	Not established.

12.3. Bioaccumulative potential

MMP Assay Buffer [5X]	
Bioaccumulative potential	Not established.

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 : 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

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

MMP Assay Buffer [5X]

Safety Data Sheet

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

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

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):
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 : 1/17/2025

Date of issue : 8/24/2017

Other information : None.

Abbreviations and acronyms

ACGIH	American Conference of Government Industrial Hygienists
-------	---

MMP Assay Buffer [5X]

Safety Data Sheet

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

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

MMP Assay Buffer [5X]

Safety Data Sheet

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

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

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.