



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

Cat. # 786-899

RED 660™ Protein Assay with Non Animal Protein Standard

Size: 500 Assays/ 2,500 Micro-assays



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RED 660 Protein Assay Reagent

Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2015/830
Date of issue: 3/6/2014 Revision date: 5/11/2017 Version: 1.1

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Product form : Mixture
Product name : RED 660 Protein Assay Reagent
Product code : 015R_P402
Product group : Blend

1.2. Relevant identified uses of the substance or mixture and uses advised against

1.2.1. Relevant identified uses

No additional information available

1.2.2. Uses advised against

No additional information available

1.3. Details of the supplier of the safety data sheet

Geno Technology, Inc./ G-Biosciences
9800 Page Avenue
63132-1429 Saint Louis - United States
T 800-628-7730 - F 314-991-1504
technical@GBiosciences.com - www.GBiosciences.com

1.4. Emergency telephone number

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

| Country | Organisation/Company | Address | Emergency number | Comment |
|----------------|---|---|------------------|---------|
| United Kingdom | National Poisons Information Service (Belfast Centre) Royal Victoria Hospital | Grosvenor Road BT12 6BA Belfast | 0344 892 0111 | |
| United Kingdom | National Poisons Information Service (Birmingham Centre) City Hospital | Dudley Road B18 7QH Birmingham | 0344 892 0111 | |
| United Kingdom | National Poisons Information Service (Cardiff Centre) Gwenwyn Ward, Llandough Hospital | Penarth CF64 2XX Cardiff | 0344 892 0111 | |
| United Kingdom | National Poisons Information Service Edinburgh Royal Infirmary of Edinburgh | Little France Crescent EH16 4SA Edinburgh | 0344 892 0111 | |
| United Kingdom | Guy's & St Thomas' Poisons Unit Medical Toxicology Unit, Guy's & St Thomas' Hospital Trust | Avonley Road SE14 5ER London | +44 20 7188 7188 | |
| United Kingdom | National Poisons Information Service (Newcastle Centre) Regional Drugs and Therapeutics Centre, Wolfson Unit | Claremont Place Newcastle-upon-Tyne NE1 4LP Newcastle | 0344 892 0111 | |

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification according to Regulation (EC) No. 1272/2008 [CLP]

Not classified

Adverse physicochemical, human health and environmental effects

To our knowledge, this product does not present any particular risk, provided it is handled in accordance with good occupational hygiene and safety practice. Causes damage to organs.

2.2. Label elements

Labelling according to Regulation (EC) No. 1272/2008 [CLP]

EUH-statements : EUH210 - Safety data sheet available on request.

2.3. Other hazards

No additional information available

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SECTION 3: Composition/information on ingredients

3.1. Substances

Not applicable

3.2. Mixtures

| Name | Product identifier | % | Classification according to Regulation (EC) No. 1272/2008 [CLP] |
|-----------------------------|--|-------|---|
| Deionized water | (CAS-No.) 7732-18-5 | > 86 | Not classified |
| sodium molybdate, dihydrate | (CAS-No.) 10102-40-6 | < 2 | Not classified |
| sodium oxalate | (CAS-No.) 62-76-0 (EC-No.) 200-550-3 (EC Index-No.) 607-007-00-3 | < 2 | Acute Tox. 4 (Oral), H302 Acute Tox. 4 (Dermal), H312 |
| succinic acid | (CAS-No.) 110-15-6 (EC-No.) 203-740-4 | < 2 | Eye Dam. 1, H318 |
| Pyrocatechol Violet | (CAS-No.) 115-41-3 | < 2 | Not classified |
| sodium benzoate | (CAS-No.) 532-32-1 (EC-No.) 208-534-8 | < 2 | Acute Tox. 4 (Dermal), H312 |
| polyvinyl alcohol | (CAS-No.) 9002-89-5 | < 2 | Not classified |
| methanol | (CAS-No.) 67-56-1 (EC-No.) 200-659-6 (EC Index-No.) 603-001-00-X | 2 - 5 | Flam. Liq. 2, H225 Acute Tox. 3 (Oral), H301 Acute Tox. 3 (Inhalation), H331 Acute Tox. 3 (Inhalation:vapour), H331 STOT SE 1, H370 |

Specific concentration limits:

| Name | Product identifier | Specific concentration limits |
|----------|--|--|
| methanol | (CAS-No.) 67-56-1 (EC-No.) 200-659-6 (EC Index-No.) 603-001-00-X | (3 =<C < 10) STOT SE 2, H371 (10 =<C < 100) STOT SE 1, H370 |

Full text of H-statements: see section 16

SECTION 4: First aid measures

4.1. Description of first aid measures

| | |
|---------------------------------------|--|
| First-aid measures general | : IF exposed or concerned: Get medical advice/attention. |
| First-aid measures after inhalation | : Remove person to fresh air and keep comfortable for breathing. |
| First-aid measures after skin contact | : Wash skin with plenty of water. |
| First-aid measures after eye contact | : Rinse eyes with water as a precaution. |
| First-aid measures after ingestion | : Call a poison center or a doctor if you feel unwell. |

4.2. Most important symptoms and effects, both acute and delayed

No additional information available

4.3. Indication of any immediate medical attention and special treatment needed

Treat symptomatically.

SECTION 5: Firefighting measures

5.1. Extinguishing media

| | |
|------------------------------|--|
| Suitable extinguishing media | : Water spray. Dry powder. Foam. Carbon dioxide. |
|------------------------------|--|

5.2. Special hazards arising from the substance or mixture

| | |
|--|--------------------------------|
| Fire hazard | : Combustible liquid. |
| Hazardous decomposition products in case of fire | : Toxic fumes may be released. |

5.3. Advice for firefighters

| | |
|--------------------------------|--|
| Protection during firefighting | : 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

6.1.1. For non-emergency personnel

| | |
|----------------------|--|
| Emergency procedures | : Ventilate spillage area. No open flames, no sparks, and no smoking. Do not breathe dust/fume/gas/mist/vapours/spray. |
|----------------------|--|

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6.1.2. For emergency responders

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

6.2. Environmental precautions

Avoid release to the environment.

6.3. Methods and material for containment and cleaning up

Methods for cleaning up : Take up liquid spill into absorbent material. Notify authorities if product enters sewers or public waters.

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

6.4. Reference to other sections

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 heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Do not breathe dust/fume/gas/mist/vapours/spray.

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

7.2. Conditions for safe storage, including any incompatibilities

Storage conditions : Store in a well-ventilated place. Keep cool. Store locked up.

7.3. Specific end use(s)

No additional information available

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

sodium molybdate, dihydrate (10102-40-6)

United Kingdom - Occupational Exposure Limits

| | |
|------------------------------|---------------------|
| WEL TWA (mg/m ³) | 5 mg/m ³ |
|------------------------------|---------------------|

| | |
|-------------------------------|----------------------|
| WEL STEL (mg/m ³) | 10 mg/m ³ |
|-------------------------------|----------------------|

polyvinyl alcohol (9002-89-5)

United Kingdom - Occupational Exposure Limits

| | |
|------------------------------|---|
| WEL TWA (mg/m ³) | 10 mg/m ³ 4 mg/m ³ |
|------------------------------|---|

sodium benzoate (532-32-1)

United Kingdom - Occupational Exposure Limits

| | |
|------------------------------|---|
| WEL TWA (mg/m ³) | 10 mg/m ³ 4 mg/m ³ |
|------------------------------|---|

methanol (67-56-1)

EU - Occupational Exposure Limits

| | |
|--------------------------------|-----------------------|
| IOELV TWA (mg/m ³) | 260 mg/m ³ |
|--------------------------------|-----------------------|

| | |
|-----------------|---------|
| IOELV TWA (ppm) | 200 ppm |
|-----------------|---------|

United Kingdom - Occupational Exposure Limits

| | |
|------------------------------|-----------------------|
| WEL TWA (mg/m ³) | 266 mg/m ³ |
|------------------------------|-----------------------|

| | |
|---------------|---------|
| WEL TWA (ppm) | 200 ppm |
|---------------|---------|

| | |
|-------------------------------|-----------------------|
| WEL STEL (mg/m ³) | 333 mg/m ³ |
|-------------------------------|-----------------------|

| | |
|----------------|---------|
| WEL STEL (ppm) | 250 ppm |
|----------------|---------|

8.2. Exposure controls

Appropriate engineering controls:

Ensure good ventilation of the work station.

Hand protection:

Protective gloves

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Eye protection:

Safety glasses

Skin and body protection:

Wear suitable protective clothing

Respiratory protection:

In case of insufficient ventilation, wear suitable respiratory equipment

Environmental exposure controls:

Avoid release to the environment.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

| | |
|--|---------------------|
| Physical state | : Liquid |
| Colour | : No data available |
| Odour | : No data available |
| Odour threshold | : No data available |
| pH | : No data available |
| Relative evaporation rate (butylacetate=1) | : No data available |
| Melting point | : Not applicable |
| Freezing point | : No data available |
| Boiling point | : No data available |
| Flash point | : 80 °C |
| Auto-ignition temperature | : No data available |
| Decomposition temperature | : No data available |
| Flammability (solid, gas) | : Not applicable |
| Vapour pressure | : No data available |
| Relative vapour density at 20 °C | : No data available |
| Relative density | : No data available |
| Solubility | : No data available |
| Log Pow | : No data available |
| Viscosity, kinematic | : No data available |
| Viscosity, dynamic | : No data available |
| Explosive properties | : No data available |
| Oxidising properties | : No data available |
| Explosive limits | : No data available |

9.2. Other information

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.

10.3. Possibility of hazardous reactions

No dangerous reactions known under normal conditions of use.

10.4. Conditions to avoid

Avoid contact with hot surfaces. Heat. No flames, no sparks. Eliminate all sources of ignition.

10.5. Incompatible materials

No additional information available

10.6. Hazardous decomposition products

Hazardous decomposition products.

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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| succinic acid (110-15-6) | |
|----------------------------|--|
| LD50 oral rat | > 6740 mg/kg bodyweight (Equivalent or similar to OECD 401, Rat, Male / female, Read-across, Oral) |
| LC50 inhalation rat (mg/l) | > 1.284 mg/l (OECD 403: Acute Inhalation Toxicity, 4 h, Rat, Male / female, Experimental value, (maximum achievable concentration), Inhalation (dust)) |

| sodium molybdate, dihydrate (10102-40-6) | |
|--|----------------------------|
| LD50 oral rat | 4233 mg/kg (Rat, Oral) |
| LD50 dermal rat | > 2000 mg/kg (Rat, Dermal) |

| polyvinyl alcohol (9002-89-5) | |
|-------------------------------|---|
| LD50 oral rat | > 5000 mg/kg (Rat, Experimental value, Oral) |
| LD50 dermal rat | > 2000 mg/kg (Rat, Dermal) |
| LC50 inhalation rat (mg/l) | > 24 mg/l (1 h, Rat, Experimental value, Inhalation (dust)) |

| methanol (67-56-1) | |
|----------------------------|--|
| LD50 oral rat | 1187 - 2769 mg/kg bodyweight (BASF test, Rat, Male / female, Weight of evidence, Aqueous solution, Oral, 7 day(s)) |
| LD50 dermal rabbit | 17100 mg/kg (Rabbit, Inconclusive, insufficient data, Dermal) |
| LC50 inhalation rat (mg/l) | 128.2 mg/l air (BASF test, 4 h, Rat, Male / female, Experimental value, Inhalation (vapours)) |

| | |
|-----------------------------------|------------------|
| Skin corrosion/irritation | : Not classified |
| Serious eye damage/irritation | : Not classified |
| Respiratory or skin sensitisation | : 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 |

SECTION 12: Ecological information

12.1. Toxicity

| | |
|--------------------------|---|
| Ecology - general | : The product is not considered harmful to aquatic organisms nor to cause long-term adverse effects in the environment. |
| Acute aquatic toxicity | : Not classified |
| Chronic aquatic toxicity | : Not classified |

| sodium oxalate (62-76-0) | |
|--------------------------|------------------------------------|
| LC50 fish 1 | 630 mg/l (96 h, Brachydanio rerio) |

| succinic acid (110-15-6) | |
|--------------------------|---|
| LC50 fish 1 | > 100 mg/l (OECD 203: Fish, Acute Toxicity Test, 96 h, Danio rerio, Semi-static system, Fresh water, Experimental value, GLP) |
| EC50 Daphnia 1 | > 100 mg/l (OECD 202: Daphnia sp. Acute Immobilisation Test, 48 h, Daphnia magna, Semi-static system, Fresh water, Experimental value, GLP) |
| ErC50 (algae) | > 100 mg/l (OECD 201: Alga, Growth Inhibition Test, 72 h, Pseudokirchneriella subcapitata, Static system, Fresh water, Experimental value, GLP) |

| sodium molybdate, dihydrate (10102-40-6) | |
|--|--|
| LC50 fish 1 | 644.2 mg/l (OECD 203: Fish, Acute Toxicity Test, 96 h, Pimephales promelas, Semi-static system, Fresh water, Experimental value) |
| EC50 Daphnia 1 | 130.9 mg/l (OECD 202: Daphnia sp. Acute Immobilisation Test, 48 h, Daphnia magna, Static system, Fresh water, Experimental value, GLP) |

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| | |
|---------------|--|
| ErC50 (algae) | 289.2 mg/l (OECD 201: Alga, Growth Inhibition Test, 72 h, Pseudokirchneriella subcapitata, Static system, Fresh water, Weight of evidence) |
|---------------|--|

polyvinyl alcohol (9002-89-5)

| | |
|----------------|---|
| LC50 fish 1 | 40 mg/l (96 h, Pimephales promelas, Experimental value) |
| EC50 Daphnia 1 | 8.3 mg/l (48 h, Daphnia sp., Experimental value) |

methanol (67-56-1)

| | |
|----------------|--|
| LC50 fish 1 | 15400 mg/l (EPA 660/3 - 75/009, 96 h, Lepomis macrochirus, Flow-through system, Fresh water, Experimental value, Lethal) |
| EC50 Daphnia 1 | 18260 mg/l (OECD 202: Daphnia sp. Acute Immobilisation Test, 96 h, Daphnia magna, Semi-static system, Fresh water, Experimental value, Locomotor effect) |
| ErC50 (algae) | 22000 mg/l (OECD 201: Alga, Growth Inhibition Test, 96 h, Pseudokirchneriella subcapitata, Static system, Fresh water, Experimental value) |

12.2. Persistence and degradability

sodium oxalate (62-76-0)

| | |
|---------------------------------|---|
| Persistence and degradability | Biodegradability in water: no data available. |
| Biochemical oxygen demand (BOD) | 0.11 g O ₂ /g substance |

succinic acid (110-15-6)

| | |
|-------------------------------|-------------------------------------|
| Persistence and degradability | Readily biodegradable in water. |
| ThOD | 1.305 g O ₂ /g substance |
| BOD (% of ThOD) | 0.35 |

sodium molybdate, dihydrate (10102-40-6)

| | |
|-------------------------------|-----------------------------------|
| Persistence and degradability | Biodegradability: not applicable. |
| Chemical oxygen demand (COD) | Not applicable |
| ThOD | Not applicable |
| BOD (% of ThOD) | Not applicable |

polyvinyl alcohol (9002-89-5)

| | |
|-------------------------------|------------------------------------|
| Persistence and degradability | Readily biodegradable in water. |
| Chemical oxygen demand (COD) | 0.16 g O ₂ /g substance |

sodium benzoate (532-32-1)

| | |
|-------------------------------|---------------------------------|
| Persistence and degradability | Readily biodegradable in water. |
|-------------------------------|---------------------------------|

methanol (67-56-1)

| | |
|---------------------------------|--|
| Persistence and degradability | Readily biodegradable in the soil. Readily biodegradable in water. |
| Biochemical oxygen demand (BOD) | 0.6 - 1.12 g O ₂ /g substance |
| Chemical oxygen demand (COD) | 1.42 g O ₂ /g substance |
| ThOD | 1.5 g O ₂ /g substance |

12.3. Bioaccumulative potential

sodium oxalate (62-76-0)

| | |
|---------------------------|------------------------------------|
| Bioaccumulative potential | No bioaccumulation data available. |
|---------------------------|------------------------------------|

succinic acid (110-15-6)

| | |
|---------------------------|----------------------|
| Log Pow | -0.59 |
| Bioaccumulative potential | Not bioaccumulative. |

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| sodium molybdate, dihydrate (10102-40-6) | |
|--|--|
| BCF fish 1 | 4.9 (28 day(s), Oncorhynchus tshawytscha, Fresh water, Weight of evidence, Anhydrous form) |
| Bioaccumulative potential | Low potential for bioaccumulation (BCF < 500). |

| polyvinyl alcohol (9002-89-5) | |
|-------------------------------|--|
| BCF fish 1 | < 7.5 (6 week(s), Cyprinus carpio, Literature) |
| Bioaccumulative potential | Low potential for bioaccumulation (BCF < 500). |

| sodium benzoate (532-32-1) | |
|----------------------------|--|
| Log Pow | 0.84 |
| Bioaccumulative potential | Low potential for bioaccumulation (Log Kow < 4). |

| methanol (67-56-1) | |
|---------------------------|---|
| BCF fish 1 | 1 - 4.5 (72 h, Cyprinus carpio, Static system, Fresh water, Experimental value) |
| Log Pow | -0.77 (Experimental value) |
| Bioaccumulative potential | Low potential for bioaccumulation (BCF < 500). |

12.4. Mobility in soil

| succinic acid (110-15-6) | |
|--------------------------|---|
| Ecology - soil | No (test)data on mobility of the substance available. |

| sodium molybdate, dihydrate (10102-40-6) | |
|--|---|
| Ecology - soil | No (test)data on mobility of the substance available. |

| polyvinyl alcohol (9002-89-5) | |
|-------------------------------|---|
| Ecology - soil | No (test)data on mobility of the substance available. |

| methanol (67-56-1) | |
|--------------------|--|
| Surface tension | 0.023 N/m (20 °C) |
| Log Koc | 0.088 (log Koc, SRC PCKOCWIN v2.0, Calculated value) |
| Ecology - soil | Highly mobile in soil. |

12.5. Results of PBT and vPvB assessment

| Component | |
|--|---|
| sodium molybdate, dihydrate (10102-40-6) | This substance/mixture does not meet the PBT criteria of REACH regulation, annex XIII This substance/mixture does not meet the vPvB criteria of REACH regulation, annex XIII |
| succinic acid (110-15-6) | This substance/mixture does not meet the PBT criteria of REACH regulation, annex XIII This substance/mixture does not meet the vPvB criteria of REACH regulation, annex XIII |
| polyvinyl alcohol (9002-89-5) | This substance/mixture does not meet the PBT criteria of REACH regulation, annex XIII This substance/mixture does not meet the vPvB criteria of REACH regulation, annex XIII |
| methanol (67-56-1) | This substance/mixture does not meet the PBT criteria of REACH regulation, annex XIII This substance/mixture does not meet the vPvB criteria of REACH regulation, annex XIII |

12.6. Other adverse effects

No additional information available

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Waste treatment methods : Waste treatment methods.

SECTION 14: Transport information

In accordance with ADR / RID / IMDG / IATA / ADN

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14.1. UN number

| | |
|---------------|------------------|
| UN-No. (ADR) | : Not applicable |
| UN-No. (IMDG) | : Not regulated |
| UN-No. (IATA) | : Not regulated |
| UN-No. (ADN) | : Not applicable |
| UN-No. (RID) | : Not applicable |

14.2. UN proper shipping name

| | |
|-----------------------------|------------------|
| Proper Shipping Name (ADR) | : Not applicable |
| Proper Shipping Name (IMDG) | : Not regulated |
| Proper Shipping Name (IATA) | : Not regulated |
| Proper Shipping Name (ADN) | : Not applicable |
| Proper Shipping Name (RID) | : Not applicable |

14.3. Transport hazard class(es)

ADR

| | |
|----------------------------------|------------------|
| Transport hazard class(es) (ADR) | : Not applicable |
|----------------------------------|------------------|

IMDG

| | |
|-----------------------------------|-----------------|
| Transport hazard class(es) (IMDG) | : Not regulated |
|-----------------------------------|-----------------|

IATA

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

ADN

| | |
|----------------------------------|------------------|
| Transport hazard class(es) (ADN) | : Not applicable |
|----------------------------------|------------------|

RID

| | |
|----------------------------------|------------------|
| Transport hazard class(es) (RID) | : Not applicable |
|----------------------------------|------------------|

14.4. Packing group

| | |
|----------------------|------------------|
| Packing group (ADR) | : Not applicable |
| Packing group (IMDG) | : Not regulated |
| Packing group (IATA) | : Not regulated |
| Packing group (ADN) | : Not applicable |
| Packing group (RID) | : Not applicable |

14.5. Environmental hazards

| | |
|-------------------------------|--|
| Dangerous for the environment | : No |
| Marine pollutant | : No |
| Other information | : No supplementary information available |

14.6. Special precautions for user

Overland transport

No data available

Transport by sea

Not regulated

Air transport

Not regulated

Inland waterway transport

No data available

Rail transport

No data available

14.7. Transport in bulk according to Annex II of Marpol and the IBC Code

Not applicable

SECTION 15: Regulatory information

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

15.1.1. EU-Regulations

Contains no REACH substances with Annex XVII restrictions

Contains no substance on the REACH candidate list

Contains no REACH Annex XIV substances

Contains no substance subject to REGULATION (EU) No 649/2012 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 4 July 2012 concerning the export and import of hazardous chemicals.

Substance(s) are not subject to Regulation (EC) No 850/2004 of the European Parliament and of the Council of 29 April 2004 on persistent organic pollutants and amending Directive 79/117/EEC.

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15.1.2. National regulations

No additional information available

15.2. Chemical safety assessment

No chemical safety assessment has been carried out

SECTION 16: Other information

| Full text of H- and EUH-statements: | |
|-------------------------------------|--|
| Acute Tox. 3 (Inhalation) | Acute toxicity (inhal.), Category 3 |
| Acute Tox. 3 (Inhalation:vapour) | Acute toxicity (inhalation:vapour) Category 3 |
| Acute Tox. 3 (Oral) | Acute toxicity (oral), Category 3 |
| Acute Tox. 4 (Dermal) | Acute toxicity (dermal), Category 4 |
| Acute Tox. 4 (Oral) | Acute toxicity (oral), Category 4 |
| Eye Dam. 1 | Serious eye damage/eye irritation, Category 1 |
| Flam. Liq. 2 | Flammable liquids, Category 2 |
| STOT SE 1 | Specific target organ toxicity — Single exposure, Category 1 |
| STOT SE 2 | Specific target organ toxicity — Single exposure, Category 2 |
| H225 | Highly flammable liquid and vapour. |
| H301 | Toxic if swallowed. |
| H302 | Harmful if swallowed. |
| H312 | Harmful in contact with skin. |
| H318 | Causes serious eye damage. |
| H331 | Toxic if inhaled. |
| H370 | Causes damage to organs. |
| H371 | May cause damage to organs. |
| EUH210 | Safety data sheet available on request. |

Safety Data Sheet applicable for regions : GB - United Kingdom

SDS EU (REACH Annex II)

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.



Non Animal Protein 2mg/ml

Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2015/830
Date of issue: 4/2/2014 Revision date: 5/11/2017 Version: 1.1

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Product form : Mixture
Product name : Non Animal Protein 2mg/ml
Product code : 136N
Product group : Blend

1.2. Relevant identified uses of the substance or mixture and uses advised against

1.2.1. Relevant identified uses

Use of the substance/mixture : Research and development

1.2.2. Uses advised against

No additional information available

1.3. Details of the supplier of the safety data sheet

Geno Technology, Inc./ G-Biosciences
9800 Page Avenue
63132-1429 Saint Louis - United States
T 800-628-7730 - F 314-991-1504
technical@GBiosciences.com - www.GBiosciences.com

1.4. Emergency telephone number

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

| Country | Organisation/Company | Address | Emergency number | Comment |
|----------------|---|---|------------------|---------|
| United Kingdom | National Poisons Information Service (Belfast Centre) Royal Victoria Hospital | Grosvenor Road BT12 6BA Belfast | 0344 892 0111 | |
| United Kingdom | National Poisons Information Service (Birmingham Centre) City Hospital | Dudley Road B18 7QH Birmingham | 0344 892 0111 | |
| United Kingdom | National Poisons Information Service (Cardiff Centre) Gwenwyn Ward, Llandough Hospital | Penarth CF64 2XX Cardiff | 0344 892 0111 | |
| United Kingdom | National Poisons Information Service Edinburgh Royal Infirmary of Edinburgh | Little France Crescent EH16 4SA Edinburgh | 0344 892 0111 | |
| United Kingdom | Guy's & St Thomas' Poisons Unit Medical Toxicology Unit, Guy's & St Thomas' Hospital Trust | Avonley Road SE14 5ER London | +44 20 7188 7188 | |
| United Kingdom | National Poisons Information Service (Newcastle Centre) Regional Drugs and Therapeutics Centre, Wolfson Unit | Claremont Place Newcastle-upon-Tyne NE1 4LP Newcastle | 0344 892 0111 | |

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification according to Regulation (EC) No. 1272/2008 [CLP]

Skin sensitisation, Category 1 H317

Full text of H statements : see section 16

Adverse physicochemical, human health and environmental effects

May cause an allergic skin reaction.

Non Animal Protein 2mg/ml

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according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2015/830

2.2. Label elements

Labelling according to Regulation (EC) No. 1272/2008 [CLP]

Hazard pictograms (CLP)



GHS07

CLP Signal word

: Warning

Hazard statements (CLP)

: H317 - May cause an allergic skin reaction.

Precautionary statements (CLP)

: P261 - Avoid breathing dust/fume/gas/mist/vapours/spray.
P272 - Contaminated work clothing should not be allowed out of the workplace.
P280 - Wear protective gloves/protective clothing/eye protection/face protection.
P302+P352 - IF ON SKIN: Wash with plenty of water.
P321 - Specific treatment (see supplemental first aid instruction on this label).
P333+P313 - If skin irritation or rash occurs: Get medical advice/attention.
P362+P364 - Take off contaminated clothing and wash it before reuse.
P501 - Dispose of contents/container to hazardous or special waste collection point, in accordance with local, regional, national and/or international regulation.

2.3. Other hazards

No additional information available

SECTION 3: Composition/information on ingredients

3.1. Substances

Not applicable

3.2. Mixtures

| Name | Product identifier | % | Classification according to Regulation (EC) No. 1272/2008 [CLP] |
|--|--|----------|--|
| 2-amino-2-(hydroxymethyl)-1,3-propanediol, hydrochloride | (CAS-No.) 1185-53-1 (EC-No.) 214-684-5 | < 2 | Skin Irrit. 2, H315 Eye Irrit. 2, H319 STOT SE 3, H335 |
| Deionized water | (CAS-No.) 7732-18-5 | 98 - 1.6 | Not classified |
| Soy Powder | | < 0.3 | Not classified |
| kathon CG | (CAS-No.) 55965-84-9 (EC Index-No.) 613-167-00-5 | < 0.04 | Acute Tox. 3 (Inhalation), H331 Skin Corr. 1B, H314 Skin Sens. 1, H317 Aquatic Acute 1, H400 Aquatic Chronic 1, H410 |
| tris(hydroxymethyl)aminomethane | (CAS-No.) 77-86-1 (EC-No.) 201-064-4 | < 0.04 | Not classified |
| sodium hydroxide | (CAS-No.) 1310-73-2 (EC-No.) 215-185-5 (EC Index-No.) 011-002-00-6 | < 0.02 | Met. Corr. 1, H290 Skin Corr. 1A, H314 |

Specific concentration limits:

| Name | Product identifier | Specific concentration limits |
|------------------|--|---|
| kathon CG | (CAS-No.) 55965-84-9 (EC Index-No.) 613-167-00-5 | (0.0015 =<C < 100) Skin Sens. 1, H317 (0.06 =<C < 0.6) Eye Irrit. 2, H319 (0.06 =<C < 0.6) Skin Irrit. 2, H315 (0.6 =<C < 100) Skin Corr. 1B, H314 |
| sodium hydroxide | (CAS-No.) 1310-73-2 (EC-No.) 215-185-5 (EC Index-No.) 011-002-00-6 | (0.5 =<C < 2) Eye Irrit. 2, H319 (0.5 =<C < 2) Skin Irrit. 2, H315 (2 =<C < 5) Skin Corr. 1B, H314 (5 =<C < 100) Skin Corr. 1A, H314 |

Full text of H-statements: see section 16

SECTION 4: First aid measures

4.1. Description of first aid measures

First-aid measures after inhalation

: Remove person to fresh air and keep comfortable for breathing.

First-aid measures after skin contact

: Wash skin with plenty of water. Take off contaminated clothing. If skin irritation or rash occurs: Get medical advice/attention.

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First-aid measures after eye contact : Rinse eyes with water as a precaution.
First-aid measures after ingestion : Call a poison center or a doctor if you feel unwell.

4.2. Most important symptoms and effects, both acute and delayed

Symptoms/effects after skin contact : May cause an allergic skin reaction.

4.3. Indication of any immediate medical attention and special treatment needed

Treat symptomatically.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media : Water spray. Dry powder. Foam. Carbon dioxide.

5.2. Special hazards arising from the substance or mixture

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

5.3. Advice for firefighters

Protection during firefighting : 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

6.1.1. For non-emergency personnel

Emergency procedures : Ventilate spillage area. Avoid contact with skin and eyes. Avoid breathing dust/fume/gas/mist/vapours/spray.

6.1.2. For emergency responders

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

6.2. Environmental precautions

Avoid release to the environment.

6.3. Methods and material for containment and cleaning up

Methods for cleaning up : Take up liquid spill into absorbent material.

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

6.4. Reference to other sections

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. Avoid contact with skin and eyes. Avoid breathing dust/fume/gas/mist/vapours/spray.

Hygiene measures : Do not eat, drink or smoke when using this product. Always wash hands after handling the product. Contaminated work clothing should not be allowed out of the workplace. Wash contaminated clothing before reuse.

7.2. Conditions for safe storage, including any incompatibilities

Storage conditions : Store in a well-ventilated place. Keep cool.

Storage temperature : -20 °C

7.3. Specific end use(s)

No additional information available

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

sodium hydroxide (1310-73-2)

United Kingdom - Occupational Exposure Limits

| | |
|-------------------------------|---------------------|
| WEL STEL (mg/m ³) | 2 mg/m ³ |
|-------------------------------|---------------------|

8.2. Exposure controls

Appropriate engineering controls:

Ensure good ventilation of the work station.

Hand protection:

Protective gloves

Eye protection:

Safety glasses

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according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2015/830

Skin and body protection:

Wear suitable protective clothing

Respiratory protection:

In case of insufficient ventilation, wear suitable respiratory equipment

Environmental exposure controls:

Avoid release to the environment.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

| | |
|--|---------------------|
| Physical state | : Liquid |
| Colour | : No data available |
| Odour | : No data available |
| Odour threshold | : No data available |
| pH | : No data available |
| Relative evaporation rate (butylacetate=1) | : No data available |
| Melting point | : Not applicable |
| Freezing point | : No data available |
| Boiling point | : No data available |
| Flash point | : No data available |
| Auto-ignition temperature | : No data available |
| Decomposition temperature | : No data available |
| Flammability (solid, gas) | : Not applicable |
| Vapour pressure | : No data available |
| Relative vapour density at 20 °C | : No data available |
| Relative density | : No data available |
| Solubility | : No data available |
| Log Pow | : No data available |
| Viscosity, kinematic | : No data available |
| Viscosity, dynamic | : No data available |
| Explosive properties | : No data available |
| Oxidising properties | : No data available |
| Explosive limits | : No data available |

9.2. Other information

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.

10.3. Possibility of hazardous reactions

No dangerous reactions known under normal conditions of use.

10.4. Conditions to avoid

None under recommended storage and handling conditions (see section 7).

10.5. Incompatible materials

No additional information available

10.6. Hazardous decomposition products

Hazardous decomposition products.

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 |

kathon CG (55965-84-9)

| | |
|--------------------|-----------------------|
| LD50 oral rat | > 2000 mg/kg (Rat) |
| LD50 dermal rabbit | > 5000 mg/kg (Rabbit) |

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| tris(hydroxymethyl)aminomethane (77-86-1) | |
|---|--|
| LD50 oral rat | > 5000 mg/kg bodyweight (OECD 425: Acute Oral Toxicity: Up-and-Down Procedure, Rat, Female, Experimental value, Oral, 14 day(s)) |
| LD50 dermal rat | > 5000 mg/kg bodyweight (OECD 402: Acute Dermal Toxicity, 24 h, Rat, Male / female, Experimental value, Dermal) |
| Skin corrosion/irritation | : Not classified |
| Serious eye damage/irritation | : Not classified |
| Respiratory or skin sensitisation | : May cause an allergic skin reaction. |
| 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 |

SECTION 12: Ecological information

12.1. Toxicity

| | |
|--------------------------|---|
| Ecology - general | : The product is not considered harmful to aquatic organisms nor to cause long-term adverse effects in the environment. |
| Acute aquatic toxicity | : Not classified |
| Chronic aquatic toxicity | : Not classified |

| sodium hydroxide (1310-73-2) | |
|------------------------------|---|
| LC50 fish 1 | 45.4 mg/l (96 h, Salmo gairdneri, Static system, Fresh water, Experimental value, Solution >=50%) |
| EC50 Daphnia 1 | 40.4 mg/l (48 h, Ceriodaphnia sp., Experimental value, Nominal concentration) |

| tris(hydroxymethyl)aminomethane (77-86-1) | |
|---|--|
| EC50 Daphnia 1 | > 980 mg/l (OECD 202: Daphnia sp. Acute Immobilisation Test, 48 h, Daphnia magna, Static system, Fresh water, Experimental value, GLP) |
| EC50 72h algae (1) | 397 mg/l (Equivalent or similar to OECD 201, Pseudokirchneriella subcapitata, Static system, Fresh water, Experimental value, Growth rate) |

12.2. Persistence and degradability

| kathon CG (55965-84-9) | |
|-------------------------------|--|
| Persistence and degradability | Contains non readily biodegradable component(s). |

| sodium hydroxide (1310-73-2) | |
|-------------------------------|-----------------------------------|
| Persistence and degradability | Biodegradability: not applicable. |
| Chemical oxygen demand (COD) | Not applicable (inorganic) |
| ThOD | Not applicable (inorganic) |

| tris(hydroxymethyl)aminomethane (77-86-1) | |
|---|---------------------------------|
| Persistence and degradability | Readily biodegradable in water. |

| 2-amino-2-(hydroxymethyl)-1,3-propanediol, hydrochloride (1185-53-1) | |
|--|---|
| Persistence and degradability | Biodegradability in water: no data available. |

12.3. Bioaccumulative potential

| kathon CG (55965-84-9) | |
|---------------------------|--|
| Bioaccumulative potential | Does not contain bioaccumulative component(s). |

| sodium hydroxide (1310-73-2) | |
|------------------------------|----------------------|
| Bioaccumulative potential | Not bioaccumulative. |

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| tris(hydroxymethyl)aminomethane (77-86-1) | |
|--|--|
| Log Pow | -2.31 (Experimental value, OECD 107: Partition Coefficient (n-octanol/water): Shake Flask Method, 20 °C) |
| Bioaccumulative potential | Not bioaccumulative. |

| 2-amino-2-(hydroxymethyl)-1,3-propanediol, hydrochloride (1185-53-1) | |
|---|------------------------------------|
| Bioaccumulative potential | No bioaccumulation data available. |

12.4. Mobility in soil

| kathon CG (55965-84-9) | |
|-------------------------------|--|
| Ecology - soil | No (test)data on mobility of the components available. |

| sodium hydroxide (1310-73-2) | |
|-------------------------------------|---|
| Ecology - soil | No (test)data on mobility of the substance available. |

| tris(hydroxymethyl)aminomethane (77-86-1) | |
|--|------------------------|
| Log Koc | 1.87 (log Koc, QSAR) |
| Ecology - soil | Highly mobile in soil. |

12.5. Results of PBT and vPvB assessment

No additional information available

12.6. Other adverse effects

No additional information available

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Waste treatment methods : Waste treatment methods.

SECTION 14: Transport information

In accordance with ADR / RID / IMDG / IATA / ADN

14.1. UN number

| | |
|---------------|-----------------|
| UN-No. (ADR) | : Not regulated |
| UN-No. (IMDG) | : Not regulated |
| UN-No. (IATA) | : Not regulated |
| UN-No. (ADN) | : Not regulated |
| UN-No. (RID) | : Not regulated |

14.2. UN proper shipping name

| | |
|-----------------------------|-----------------|
| Proper Shipping Name (ADR) | : Not regulated |
| Proper Shipping Name (IMDG) | : Not regulated |
| Proper Shipping Name (IATA) | : Not regulated |
| Proper Shipping Name (ADN) | : Not regulated |
| Proper Shipping Name (RID) | : Not regulated |

14.3. Transport hazard class(es)

ADR

| | |
|----------------------------------|-----------------|
| Transport hazard class(es) (ADR) | : Not regulated |
|----------------------------------|-----------------|

IMDG

| | |
|-----------------------------------|-----------------|
| Transport hazard class(es) (IMDG) | : Not regulated |
|-----------------------------------|-----------------|

IATA

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

ADN

| | |
|----------------------------------|-----------------|
| Transport hazard class(es) (ADN) | : Not regulated |
|----------------------------------|-----------------|

RID

| | |
|----------------------------------|-----------------|
| Transport hazard class(es) (RID) | : Not regulated |
|----------------------------------|-----------------|

14.4. Packing group

| | |
|----------------------|-----------------|
| Packing group (ADR) | : Not regulated |
| Packing group (IMDG) | : Not regulated |

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| | |
|----------------------|-----------------|
| Packing group (IATA) | : Not regulated |
| Packing group (ADN) | : Not regulated |
| Packing group (RID) | : Not regulated |

14.5. Environmental hazards

| | |
|-------------------------------|--|
| Dangerous for the environment | : No |
| Marine pollutant | : No |
| Other information | : No supplementary information available |

14.6. Special precautions for user

Overland transport

Not regulated

Transport by sea

Not regulated

Air transport

Not regulated

Inland waterway transport

Not regulated

Rail transport

Not regulated

14.7. Transport in bulk according to Annex II of Marpol and the IBC Code

Not applicable

SECTION 15: Regulatory information

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

15.1.1. EU-Regulations

Contains no REACH substances with Annex XVII restrictions

Contains no substance on the REACH candidate list

Contains no REACH Annex XIV substances

Contains no substance subject to REGULATION (EU) No 649/2012 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 4 July 2012 concerning the export and import of hazardous chemicals.

Substance(s) are not subject to Regulation (EC) No 850/2004 of the European Parliament and of the Council of 29 April 2004 on persistent organic pollutants and amending Directive 79/117/EEC.

15.1.2. National regulations

No additional information available

15.2. Chemical safety assessment

No chemical safety assessment has been carried out

SECTION 16: Other information

| Full text of H- and EUH-statements: | |
|-------------------------------------|--|
| Acute Tox. 3 (Inhalation) | Acute toxicity (inhal.), Category 3 |
| Aquatic Acute 1 | Hazardous to the aquatic environment — Acute Hazard, Category 1 |
| Aquatic Chronic 1 | Hazardous to the aquatic environment — Chronic Hazard, Category 1 |
| Eye Irrit. 2 | Serious eye damage/eye irritation, Category 2 |
| Met. Corr. 1 | Corrosive to metals, Category 1 |
| Skin Corr. 1A | Skin corrosion/irritation, Category 1A |
| Skin Corr. 1B | Skin corrosion/irritation, Category 1B |
| Skin Irrit. 2 | Skin corrosion/irritation, Category 2 |
| Skin Sens. 1 | Skin sensitisation, Category 1 |
| STOT SE 3 | Specific target organ toxicity — Single exposure, Category 3, Respiratory tract irritation |
| H290 | May be corrosive to metals. |
| H314 | Causes severe skin burns and eye damage. |
| H315 | Causes skin irritation. |
| H317 | May cause an allergic skin reaction. |

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| | |
|------|---|
| H319 | Causes serious eye irritation. |
| H331 | Toxic if inhaled. |
| H335 | May cause respiratory irritation. |
| H400 | Very toxic to aquatic life. |
| H410 | Very toxic to aquatic life with long lasting effects. |

Safety Data Sheet applicable for regions : GB - United Kingdom

SDS EU (REACH Annex II)

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.