

Revision date 06-May-2023

Version 10

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

1.1. Product identifier

Product No R3198
Product name Mlul-HF
Pure substance/mixture Mixture

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

Recommended use This product is for research and development only
Uses advised against No information available

1.3. Details of the supplier of the safety data sheet

Supplier Address
New England BioLabs
240 County Road
Ipswich, MA 01938
USA

For further information, please contact

Company Phone Number 978-927-5054, 800-632-5227 (toll free)
Telefax 978-921-1350
E-mail address info@neb.com

1.4. Emergency telephone number

24 Hour Emergency Phone Number Chemtrec +44 20 3885 0382

| | |
|---------------|------------------------|
| Europe | +1 978-380-2125 |
|---------------|------------------------|

SECTION 2: Hazards identification**2.1. Classification of the substance or mixture**

Regulation (EC) No 1272/2008

This mixture is classified as not hazardous according to regulation (EC) 1272/2008 [CLP]

2.2. Label elements

This mixture is classified as not hazardous according to regulation (EC) 1272/2008 [CLP]

Hazard statements

This mixture is classified as not hazardous according to regulation (EC) 1272/2008 [CLP]

EUH210 - Safety data sheet available on request

Unknown aquatic toxicity Contains 0 % of components with unknown hazards to the aquatic environment.**2.3. Other hazards**

No information available.

Endocrine Disruptor Information This product does not contain any known or suspected endocrine disruptors.**SECTION 3: Composition/information on ingredients****3.1 Substances**

Not applicable

3.2 Mixtures

The product contains no substances which at their given concentration, are considered to be hazardous to health

| Chemical name | Weight-% | REACH registration number | EC No (EU Index No) | Classification according to Regulation (EC) No. 1272/2008 [CLP] | Specific concentration limit (SCL) | M-Factor | M-Factor (long-term) |
|------------------------------|----------|---------------------------|---------------------|---|------------------------------------|----------|----------------------|
| Sodium Chloride 7647-14-5 | 1 - 5 | No data available | 231-598-3 | No data available | - | - | - |

Full text of H- and EUH-phrases: see section 16**Acute Toxicity Estimate**

No information available

| Chemical name | Oral LD50 mg/kg | Dermal LD50 mg/kg | Inhalation LC50 - 4 hour - dust/mist - mg/L | Inhalation LC50 - 4 hour - vapor - mg/L | Inhalation LC50 - 4 hour - gas - ppm |
|------------------------------|-----------------|-------------------|---|---|--------------------------------------|
| Sodium Chloride 7647-14-5 | 3000 | 10000 | No data available | No data available | No data available |

This product does not contain candidate substances of very high concern at a concentration $\geq 0.1\%$ (Regulation (EC) No. 1907/2006 (REACH), Article 59)**SECTION 4: First aid measures****4.1. Description of first aid measures****Inhalation** Remove to fresh air.

| | |
|---------------------|--|
| Eye contact | Rinse thoroughly with plenty of water for at least 15 minutes, lifting lower and upper eyelids. Consult a physician. |
| Skin contact | Wash skin with soap and water. In the case of skin irritation or allergic reactions see a physician. |
| Ingestion | Rinse mouth. |

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

| | |
|----------------------------|---------------------------|
| Symptoms | No information available. |
| Effects of Exposure | No information available. |

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

| | |
|---------------------------|------------------------|
| Note to physicians | Treat symptomatically. |
|---------------------------|------------------------|

SECTION 5: Firefighting measures**5.1. Extinguishing media**

| | |
|---------------------------------------|---|
| Suitable Extinguishing Media | Use extinguishing measures that are appropriate to local circumstances and the surrounding environment. |
| Large Fire | CAUTION: Use of water spray when fighting fire may be inefficient. |
| Unsuitable extinguishing media | Do not scatter spilled material with high pressure water streams. |

5.2. Special hazards arising from the substance or mixture

| | |
|---|---------------------------|
| Specific hazards arising from the chemical | No information available. |
|---|---------------------------|

5.3. Advice for firefighters

| | |
|---|--|
| Special protective equipment and precautions for fire-fighters | Firefighters should wear self-contained breathing apparatus and full firefighting turnout gear. Use personal protection equipment. |
|---|--|

SECTION 6: Accidental release measures**6.1. Personal precautions, protective equipment and emergency procedures**

| | |
|---------------------------------|---|
| Personal precautions | Ensure adequate ventilation. |
| For emergency responders | Use personal protection recommended in Section 8. |

6.2. Environmental precautions

| | |
|----------------------------------|---|
| Environmental precautions | See Section 12 for additional Ecological Information. |
|----------------------------------|---|

6.3. Methods and material for containment and cleaning up

| | |
|--------------------------------|---|
| Methods for containment | Prevent further leakage or spillage if safe to do so. |
| Methods for cleaning up | Take up mechanically, placing in appropriate containers for disposal. |

Prevention of secondary hazards Clean contaminated objects and areas thoroughly observing environmental regulations.

6.4. Reference to other sections

Reference to other sections See section 8 for more information. See section 13 for more information.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Advice on safe handling Ensure adequate ventilation.

General hygiene considerations Handle in accordance with good industrial hygiene and safety practice.

7.2. Conditions for safe storage, including any incompatibilities

Storage Conditions Keep container tightly closed in a dry and well-ventilated place.

Storage class (TRGS 510) Storage class 10.

7.3. Specific end use(s)

Risk management methods [RMM] The information required is contained in this Safety Data Sheet.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Exposure Limits This product, as supplied, does not contain any hazardous materials with occupational exposure limits established by the region specific regulatory bodies.

| Chemical name | Ireland | Italy MDLPS | Italy AIDII | Latvia | Lithuania |
|------------------------------|---------|-------------|-------------|--------------------------|--------------------------|
| Sodium Chloride 7647-14-5 | - | - | - | TWA: 5 mg/m ³ | TWA: 5 mg/m ³ |

Biological occupational exposure limits This product, as supplied, does not contain any hazardous materials with biological limits established by the region specific regulatory bodies.

Derived No Effect Level (DNEL) - Workers

| Chemical name | Oral | Dermal | Inhalation |
|---|------|--|--|
| Glycerol 56-81-5 | - | - | 56 mg/m ³ [5] [6] |
| Sodium Chloride 7647-14-5 | - | 295.52 mg/kg bw/day [4] [6] 295.52 mg/kg bw/day [4] [7] | 2068.62 mg/m ³ [4] [6] 2068.62 mg/m ³ [4] [7] |
| Tris-HCl 1185-53-1 | - | 216.6 mg/kg bw/day [4] [6] | 152.8 mg/m ³ [4] [6] |
| Ethylenediamine tetraacetic acid 60-00-4 | - | - | 1.5 mg/m ³ [5] [6] 3 mg/m ³ [5] [7] |
| Potassium Chloride 7447-40-7 | - | 303 mg/kg bw/day [4] [6] 910 mg/kg bw/day [4] [7] | 1064 mg/m ³ [4] [6] 5320 mg/m ³ [4] [7] |

Notes

[4]

Systemic health effects.

[5]

Local health effects.

[6] Long term.
[7] Short term.

Derived No Effect Level (DNEL) - General Public

| Chemical name | Oral | Dermal | Inhalation |
|---|--|--|--|
| Glycerol 56-81-5 | 229 mg/kg bw/day [4] [6] | - | 33 mg/m ³ [5] [6] |
| Sodium Chloride 7647-14-5 | 126.65 mg/kg bw/day [4] [6] 126.65 mg/kg bw/day [4] [7] | 126.65 mg/kg bw/day [4] [6] 126.65 mg/kg bw/day [4] [7] | 443.28 mg/m ³ [4] [6] 443.28 mg/m ³ [4] [7] |
| Tris-HCl 1185-53-1 | 10.8 mg/kg bw/day [4] [6] | - | 37.7 mg/m ³ [4] [6] |
| Ethylenediamine tetraacetic acid 60-00-4 | 25 mg/kg bw/day [4] [6] | - | 0.6 mg/m ³ [5] [6] 1.2 mg/m ³ [5] [7] |
| Potassium Chloride 7447-40-7 | 91 mg/kg bw/day [4] [6] 455 mg/kg bw/day [4] [7] | 910 mg/kg bw/day [4] [6] 910 mg/kg bw/day [4] [7] | 273 mg/m ³ [4] [6] 1365 mg/m ³ [4] [7] |

Notes

[4] Systemic health effects.
[5] Local health effects.
[6] Long term.
[7] Short term.

Predicted No Effect Concentration (PNEC)

| Chemical name | Freshwater | Freshwater (intermittent release) | Marine water | Marine water (intermittent release) | Air |
|--|------------|--------------------------------------|--------------|--|-----|
| Glycerol 56-81-5 | 0.885 mg/L | 8.85 mg/L | 0.0885 mg/L | - | - |
| Sodium Chloride 7647-14-5 | 5 mg/L | - | - | - | - |
| Ethylenediamine tetraacetic acid 60-00-4 | 2.2 mg/L | 1.2 mg/L | 0.22 mg/L | - | - |
| Potassium Chloride 7447-40-7 | 0.1 mg/L | 1 mg/L | 0.1 mg/L | - | - |

| Chemical name | Freshwater sediment | Marine sediment | Sewage treatment | Soil | Food chain |
|--|--------------------------|---------------------------|------------------|---------------------|------------|
| Glycerol 56-81-5 | 3.3 mg/kg sediment dw | 0.33 mg/kg sediment dw | 1000 mg/L | 0.141 mg/kg soil dw | - |
| Sodium Chloride 7647-14-5 | - | - | 500 mg/L | 4.86 mg/kg soil dw | - |
| Ethylenediamine tetraacetic acid 60-00-4 | - | - | 43 mg/L | 0.72 mg/kg soil dw | - |
| Potassium Chloride 7447-40-7 | - | - | 10 mg/L | - | - |

8.2. Exposure controls

Engineering controls No information available.

Individual protection measures, such as personal protective equipment**Eye/face protection** No special protective equipment required.**Skin and body protection** No special protective equipment required.**Respiratory protection** No protective equipment is needed under normal use conditions. If exposure limits are exceeded or irritation is experienced, ventilation and evacuation may be required.**General hygiene considerations** Handle in accordance with good industrial hygiene and safety practice.**Environmental exposure controls** No information available.**SECTION 9: Physical and chemical properties****9.1. Information on basic physical and chemical properties**

| | |
|-----------------------|--------------------------|
| Physical state | Liquid |
| Appearance | Colorless |
| Color | No information available |
| Odor | Mild. |
| Odor threshold | No information available |

| <u>Property</u> | <u>Values</u> | <u>Remarks • Method</u> |
|--|--------------------------|-------------------------|
| Melting point / freezing point | No data available | None known |
| Initial boiling point and boiling range | No data available | None known |
| Flammability (solid, gas) | No data available | None known |
| Flammability Limit in Air | | None known |
| Upper flammability or explosive limits | No data available | |
| Lower flammability or explosive limits | No data available | |
| Flash point | No data available | None known |
| Autoignition temperature | 392.78 °C | |
| Decomposition temperature | | None known |
| pH | No data available | None known |
| pH (as aqueous solution) | No data available | None known |
| Kinematic viscosity | No data available | None known |
| Dynamic viscosity | No data available | None known |
| Water solubility | No data available | None known |
| Solubility(ies) | No data available | None known |
| Partition coefficient | No data available | None known |
| Vapor pressure | No data available | None known |
| Relative density | No data available | None known |
| Bulk density | No data available | |
| Liquid Density | No data available | |
| Vapor density | No data available | None known |
| Particle characteristics | | |
| Particle Size | No information available | |
| Particle Size Distribution | No information available | |

9.2. Other information

9.2.1. Information with regard to physical hazard classes
Not applicable

9.2.2. Other safety characteristics
No information available

SECTION 10: Stability and reactivity

10.1. Reactivity

Reactivity No information available.

10.2. Chemical stability

Stability Stable under normal conditions.

Explosion data

Sensitivity to mechanical impact None.

Sensitivity to static discharge None.

10.3. Possibility of hazardous reactions

Possibility of hazardous reactions None under normal processing.

10.4. Conditions to avoid

Conditions to avoid None known based on information supplied.

10.5. Incompatible materials

Incompatible materials None known based on information supplied.

10.6. Hazardous decomposition products

Hazardous decomposition products None known based on information supplied.

SECTION 11: Toxicological information

11.1. Information on hazard classes as defined in Regulation (EC) No 1272/2008

Information on likely routes of exposure

Product Information

Inhalation Specific test data for the substance or mixture is not available.

Eye contact Specific test data for the substance or mixture is not available.

Skin contact Specific test data for the substance or mixture is not available.

Ingestion Specific test data for the substance or mixture is not available.

Symptoms related to the physical, chemical and toxicological characteristics

Symptoms No information available.

Acute toxicity

Numerical measures of toxicity

The following values are calculated based on chapter 3.1 of the GHS document

ATEmix (oral) 21,970.40 mg/kg

| | |
|-------------------------------|-----------------|
| ATEmix (dermal) | 19,323.70 mg/kg |
| ATEmix (inhalation-gas) | 99,999.00 ppm |
| ATEmix (inhalation-vapor) | 99,999.00 mg/l |
| ATEmix (inhalation-dust/mist) | 99,999.00 mg/l |

| Chemical name | Oral LD50 | Dermal LD50 | Inhalation LC50 |
|-----------------|------------------|--------------------------|-----------------------|
| Sodium Chloride | = 3 g/kg (Rat) | > 10000 mg/kg (Rabbit) | > 42 mg/L (Rat) 1 h |

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Skin corrosion/irritation No information available.

Serious eye damage/eye irritation No information available.

Respiratory or skin sensitization No information available.

Germ cell mutagenicity No information available.

Carcinogenicity No information available.

Reproductive toxicity No information available.

STOT - single exposure No information available.

STOT - repeated exposure No information available.

Aspiration hazard No information available.

11.2. Information on other hazards

11.2.1. Endocrine disrupting properties

Endocrine disrupting properties No information available.

11.2.2. Other information

Other adverse effects No information available.

SECTION 12: Ecological information

12.1. Toxicity

Ecotoxicity

Unknown aquatic toxicity Contains 0 % of components with unknown hazards to the aquatic environment.

| Chemical name | Algae/aquatic plants | Fish | Toxicity to | Crustacea |
|---------------|----------------------|------|-------------|-----------|
|---------------|----------------------|------|-------------|-----------|

| | | | microorganisms | |
|-----------------|---|---|----------------|--|
| Sodium Chloride | - | LC50: 5560 - 6080mg/L (96h, Lepomis macrochirus) LC50: =12946mg/L (96h, Lepomis macrochirus) LC50: 6020 - 7070mg/L (96h, Pimephales promelas) LC50: =7050mg/L (96h, Pimephales promelas) LC50: 6420 - 6700mg/L (96h, Pimephales promelas) LC50: 4747 - 7824mg/L (96h, Oncorhynchus mykiss) | - | EC50: =1000mg/L (48h, Daphnia magna) EC50: 340.7 - 469.2mg/L (48h, Daphnia magna) |

12.2. Persistence and degradability

Persistence and degradability No information available.

12.3. Bioaccumulative potential

Bioaccumulation

12.4. Mobility in soil

Mobility in soil No information available.

12.5. Results of PBT and vPvB assessment

PBT and vPvB assessment No information available.

| Chemical name | PBT and vPvB assessment |
|-----------------|---------------------------------|
| Sodium Chloride | The substance is not PBT / vPvB |

12.6. Endocrine disrupting properties

Endocrine disrupting properties No information available.

12.7. Other adverse effects

No information available.

SECTION 13: Disposal considerations**13.1. Waste treatment methods**

Waste from residues/unused products Dispose of in accordance with local regulations. Dispose of waste in accordance with environmental legislation.

Contaminated packaging Do not reuse empty containers.

SECTION 14: Transport information**IATA**

| | |
|------------------------------------|----------------|
| 14.1 UN number or ID number | Not regulated |
| 14.2 Extended Proper Shipping Name | Not regulated |
| 14.3 Transport hazard class(es) | Not regulated |
| 14.4 Packing group | Not regulated |
| 14.5 Environmental hazard | Not applicable |
| 14.6 Special precautions for user | |
| Special Provisions | None |

IMDG

| | |
|--|--------------------------|
| 14.1 UN number or ID number | Not regulated |
| 14.2 Extended Proper Shipping Name | Not regulated |
| 14.3 Transport hazard class(es) | Not regulated |
| 14.4 Packing group | Not regulated |
| 14.5 Environmental hazard | Not applicable |
| 14.6 Special precautions for user | |
| Special Provisions | None |
| 14.7 Maritime transport in bulk according to IMO instruments | No information available |

RID

| | |
|------------------------------------|----------------|
| 14.1 UN/ID No | Not regulated |
| 14.2 Extended Proper Shipping Name | Not regulated |
| 14.3 Transport hazard class(es) | Not regulated |
| 14.4 Packing group | Not regulated |
| 14.5 Environmental hazard | Not applicable |
| 14.6 Special precautions for user | |
| Special Provisions | None |

ADR

| | |
|-----------------------------------|----------------|
| 14.1 UN number or ID number | Not regulated |
| 14.2 UN proper shipping name | Not regulated |
| 14.3 Transport hazard class(es) | Not regulated |
| 14.4 Packing group | Not regulated |
| 14.5 Environmental hazard | Not applicable |
| 14.6 Special precautions for user | |
| Special Provisions | None |

SECTION 15: Regulatory information**15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture**

| Chemical name | French RG number |
|-----------------------------|------------------|
| Sodium Chloride - 7647-14-5 | RG 78 |

European Union

Take note of Directive 98/24/EC on the protection of the health and safety of workers from the risks related to chemical agents at work.

Authorizations and/or restrictions on use:

This product does not contain substances subject to authorization (Regulation (EC) No. 1907/2006 (REACH), Annex XIV) This product does not contain substances subject to restriction (Regulation (EC) No. 1907/2006 (REACH), Annex XVII)

Persistent Organic Pollutants

Not applicable

Ozone-depleting substances (ODS) regulation (EC) 1005/2009

Not applicable

| | |
|-----------------------------|---|
| Chemical name | EU - Plant Protection Products (1107/2009/EC) |
| Sodium Chloride - 7647-14-5 | Plant protection agent |
| Chemical name | Biocidal Products Regulation (EU) No 528/2012 (BPR) |
| Sodium Chloride - 7647-14-5 | Product-type 1: Human hygiene |

International Inventories

| | |
|----------------------|--|
| TSCA | Contact supplier for inventory compliance status |
| DSL/NDL | Contact supplier for inventory compliance status |
| EINECS/ELINCS | Contact supplier for inventory compliance status |
| ENCS | Contact supplier for inventory compliance status |
| IECSC | Contact supplier for inventory compliance status |
| KECL | Contact supplier for inventory compliance status |
| PICCS | Contact supplier for inventory compliance status |
| AIC | Contact supplier for inventory compliance status |
| NZIoC | Contact supplier for inventory compliance status |

Legend:

- TSCA** - United States Toxic Substances Control Act Section 8(b) Inventory
DSL/NDL - Canadian Domestic Substances List/Non-Domestic Substances List
EINECS/ELINCS - European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances
ENCS - Japan Existing and New Chemical Substances
IECSC - China Inventory of Existing Chemical Substances
KECL - Korean Existing and Evaluated Chemical Substances
PICCS - Philippines Inventory of Chemicals and Chemical Substances
AICS - Australian Inventory of Chemical Substances
NZIoC - New Zealand Inventory of Chemicals

15.2. Chemical safety assessment**Chemical Safety Report** No information available**SECTION 16: Other information****Key or legend to abbreviations and acronyms used in the safety data sheet****Legend**

SVHC: Substances of Very High Concern for Authorization:

Legend Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

| | | | |
|---------|-----------------------------|------|----------------------------------|
| TWA | TWA (time-weighted average) | STEL | STEL (Short Term Exposure Limit) |
| Ceiling | Maximum limit value | * | Skin designation |
| + | Sensitizers | | |

Key literature references and sources for data used to compile the SDS

Agency for Toxic Substances and Disease Registry (ATSDR)
 U.S. Environmental Protection Agency ChemView Database
 European Food Safety Authority (EFSA)
 European Chemicals Agency (ECHA) Committee for Risk Assessment (ECHA_RAC)
 European Chemicals Agency (ECHA) (ECHA_API)
 EPA (Environmental Protection Agency)
 Acute Exposure Guideline Level(s) (AEGl(s))
 U.S. Environmental Protection Agency Federal Insecticide, Fungicide, and Rodenticide Act
 U.S. Environmental Protection Agency High Production Volume Chemicals

Food Research Journal
Hazardous Substance Database
International Uniform Chemical Information Database (IUCLID)
National Institute of Technology and Evaluation (NITE)
Australia National Industrial Chemicals Notification and Assessment Scheme (NICNAS)
NIOSH (National Institute for Occupational Safety and Health)
National Library of Medicine's ChemID Plus (NLM CIP)
National Library of Medicine's PubMed database (NLM PUBMED)
National Toxicology Program (NTP)
New Zealand's Chemical Classification and Information Database (CCID)
Organization for Economic Co-operation and Development Environment, Health, and Safety Publications
Organization for Economic Co-operation and Development High Production Volume Chemicals Program
Organization for Economic Co-operation and Development Screening Information Data Set
World Health Organization

Prepared by Environmental, Health and Safety

Revision note SDS is valid 3 years from revision date. Contact info@neb.com for latest revision.

Revision date 06-May-2023

This material safety data sheet complies with the requirements of Regulation (EC) No. 1907/2006

Disclaimer

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End of Safety Data Sheet