SAFETY DATA SHEET
Perfluorotributylamine, Part Number MV-T-50010-30059

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

1.1 Product identifier
Product name: Perfluorotributylamine, Part Number MV-T-50010-30059
EC number: 206-223-1
CAS number: 311-89-7
Part no.: MV-T-50010-30059
Chemical formula: C₁₂F₂₇N

1.2 Relevant identified uses of the substance or mixture and uses advised against
Identified uses: Reagents and Standards for Analytical Chemistry Laboratory Use
1 x 1 ml vial
Uses advised against: None known.

1.3 Details of the supplier of the safety data sheet
Agilent Technologies Deutschland GmbH
Hewlett-Packard-Str. 8
76337 Waldbronn
Germany
0800 603 1000
e-mail address of person responsible for this SDS: pdl-msds_author@agilent.com

1.4 Emergency telephone number
Emergency telephone number (with hours of operation): CHEMTREC®: +(44)-870-8200418

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture
Product definition: Mono-constituent substance
Classification according to Regulation (EC) No. 1272/2008 [CLP/GHS]
H315 SKIN CORROSION/IRRITATION Category 2
H319 SERIOUS EYE DAMAGE/EYE IRRITATION Category 2
H335 SPECIFIC TARGET ORGAN TOXICITY - SINGLE EXPOSURE (Respiratory tract irritation) Category 3

The product is classified as hazardous according to Regulation (EC) 1272/2008 as amended.
See Section 16 for the full text of the H statements declared above.
See Section 11 for more detailed information on health effects and symptoms.

2.2 Label elements
Hazard pictograms:

Signal word: Warning
Hazard statements:
H315 - Causes skin irritation.
H319 - Causes serious eye irritation.
H335 - May cause respiratory irritation.
**SECTION 2: Hazards identification**

**Precautionary statements**

**Prevention**
- P280 - Wear protective gloves. Wear eye or face protection.
- P261 - Avoid breathing vapour.
- P264 - Wash thoroughly after handling.

**Response**
- P304 + P312 - IF INHALED: Call a POISON CENTER or doctor if you feel unwell.

**Storage**
- P403 + P233 - Store in a well-ventilated place. Keep container tightly closed.

**Disposal**
- P501 - Dispose of contents and container in accordance with all local, regional, national and international regulations.

**Supplemental label elements**
- Not applicable.

**Annex XVII - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles**
- Not applicable.

**Tactile warning of danger**
- Not applicable.

**Special packaging requirements**

2.3 Other hazards

**Product meets the criteria for PBT or vPvB according to Regulation (EC) No. 1907/2006, Annex XIII**

<table>
<thead>
<tr>
<th></th>
<th>PBT</th>
<th>P</th>
<th>B</th>
<th>T</th>
<th>vPvB</th>
<th>vP</th>
<th>vB</th>
</tr>
</thead>
<tbody>
<tr>
<td>No</td>
<td>N/A</td>
<td>N/A</td>
<td>No</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td></td>
</tr>
</tbody>
</table>

**Other hazards which do not result in classification**
- None known.

**SECTION 3: Composition/information on ingredients**

3.1 Substances

**Mono-constituent substance**

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>Identifiers</th>
<th>%</th>
<th>Classification</th>
<th>Specific Conc. Limits, M-factors and ATEs</th>
<th>Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tris(Perfluorobutyl)amine</td>
<td>EC: 206-223-1, CAS: 311-89-7</td>
<td>100</td>
<td>Skin Irrit. 2, H315 Eye Irrit. 2, H319 STOT SE 3, H335 See Section 16 for the full text of the H statements declared above.</td>
<td>-</td>
<td>[1]</td>
</tr>
</tbody>
</table>

There are no additional ingredients present which, within the current knowledge of the supplier, are classified and contribute to the classification of the substance and hence require reporting in this section.

**Type**

[1] Constituent

Occupational exposure limits, if available, are listed in Section 8.
SECTION 4: First aid measures

4.1 Description of first aid measures

Eye contact: Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Get medical attention.

Inhalation: Remove victim to fresh air and keep at rest in a position comfortable for breathing. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Get medical attention. If necessary, call a poison center or physician. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband. In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.

Skin contact: Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Get medical attention. Continue to rinse for at least 10 minutes. Get medical attention. Wash clothing before reuse. Clean shoes thoroughly before reuse.

Ingestion: Wash out mouth with water. Remove dentures if any. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Get medical attention if adverse health effects persist or are severe. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

Protection of first-aiders: No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation.

4.2 Most important symptoms and effects, both acute and delayed

Potential acute health effects

Eye contact: Causes serious eye irritation.

Inhalation: May cause respiratory irritation.

Skin contact: Causes skin irritation.

Ingestion: No known significant effects or critical hazards.

Over-exposure signs/symptoms

Eye contact: Adverse symptoms may include the following: pain or irritation, watering, redness.

Inhalation: Adverse symptoms may include the following: respiratory tract irritation, coughing.

Skin contact: Adverse symptoms may include the following: irritation, redness.

Ingestion: No specific data.

4.3 Indication of any immediate medical attention and special treatment needed

Notes to physician: In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.

Specific treatments: No specific treatment.
SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media: Use an extinguishing agent suitable for the surrounding fire.

Unsuitable extinguishing media: None known.

5.2 Special hazards arising from the substance or mixture

Hazardous combustion products: Decomposition products may include the following materials:
- carbon dioxide
- carbon monoxide
- nitrogen oxides
- halogenated compounds
- fluorides

In a fire or if heated, a pressure increase will occur and the container may burst.

5.3 Advice for firefighters

Special precautions for fire-fighters: Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.

Special protective equipment for fire-fighters: Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode. Clothing for fire-fighters (including helmets, protective boots and gloves) conforming to European standard EN 469 will provide a basic level of protection for chemical incidents.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

For non-emergency personnel: No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilt material. Avoid breathing vapour or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.

For emergency responders: If specialised clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

6.2 Environmental precautions: Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

6.3 Methods and material for containment and cleaning up

Methods for cleaning up: Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.

6.4 Reference to other sections: See Section 1 for emergency contact information. See Section 8 for information on appropriate personal protective equipment. See Section 13 for additional waste treatment information.
SECTION 7: Handling and storage

7.1 Precautions for safe handling

Protective measures: Put on appropriate personal protective equipment (see Section 8). Do not ingest. Avoid contact with eyes, skin and clothing. Avoid breathing vapour or mist. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain product residue and can be hazardous. Do not reuse container.

Advice on general occupational hygiene: Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

7.2 Conditions for safe storage, including any incompatibilities

Storage: Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Store locked up. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabelled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use.

7.3 Specific end use(s)

Recommendations: Industrial applications, Professional applications.

Industrial sector specific solutions: Not available.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Occupational exposure limits
No exposure limit value known.

Biological exposure indices
None known.

Recommended monitoring procedures: Reference should be made to monitoring standards, such as the following: European Standard EN 689 (Workplace atmospheres - Guidance for the assessment of exposure by inhalation to chemical agents for comparison with limit values and measurement strategy) European Standard EN 14042 (Workplace atmospheres - Guide for the application and use of procedures for the assessment of exposure to chemical and biological agents) European Standard EN 482 (Workplace atmospheres - General requirements for the performance of procedures for the measurement of chemical agents) Reference to national guidance documents for methods for the determination of hazardous substances will also be required.

DNELs/DMELs
No DNELs/DMELs available.

PNECs
No PNECs available

8.2 Exposure controls

Appropriate engineering controls: Use only with adequate ventilation. If user operations generate dust, fumes, gas, vapour or mist, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits.

Individual protection measures
SECTION 8: Exposure controls/personal protection

Hygiene measures: Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Eye/face protection: Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: chemical splash goggles.

Skin protection

Hand protection: Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated.

Body protection: Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Other skin protection: Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Respiratory protection: Based on the hazard and potential for exposure, select a respirator that meets the appropriate standard or certification. Respirators must be used according to a respiratory protection program to ensure proper fitting, training, and other important aspects of use.

Environmental exposure controls: Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

SECTION 9: Physical and chemical properties

The conditions of measurement of all properties are at standard temperature and pressure unless otherwise indicated.

9.1 Information on basic physical and chemical properties

Appearance

Physical state: Liquid. [Hygroscopic.]
Colour: Clear.
Odour: Odourless.
Odour threshold: Not available.
Melting point/freezing point: -50°C
Initial boiling point and boiling range: 178°C
Flammability: Not applicable.
Upper/lower flammability or explosive limits: Not available.
Flash point: Not available.
Auto-ignition temperature: Not available.
Decomposition temperature: Not available.
pH: Not available.
Viscosity: Not available.
CONFORMS TO REGULATION (EC) NO. 1907/2006 (REACH), ANNEX II, AS AMENDED BY COMMISSION REGULATION (EU) 2020/878 - IRELAND

PERFLUOROTRIBUTYLAMINE, PART NUMBER MV-T-50010-30059

SECTION 9: Physical and chemical properties

**Solubility(ies)**

<table>
<thead>
<tr>
<th>Media</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>methanol</td>
<td>Insoluble</td>
</tr>
<tr>
<td>water</td>
<td>Insoluble</td>
</tr>
</tbody>
</table>

**Miscible with water**: No.

**Partition coefficient: n-octanol/water**: Not available.

**Vapour pressure**: 0.074 kPa (0.552 mm Hg)

**Evaporation rate**: Not available.

**Relative density**: 1.883

**Density**: 1.884 g/cm³ [20°C]

**Vapour density**: 23.3 [Air = 1]

**Explosive properties**: Not available.

**Oxidising properties**: Not available.

**Partition coefficient**: n-octanol/water

**Partition coefficient**: Not available.

**Evaporation rate**: Not available.

**Relative density**: Not available.

**Density**: Not available.

**Vapour pressure**: Not available.

**Explosive properties**: Not available.

**Oxidising properties**: Not available.

**Particle characteristics**

**Median particle size**: Not applicable.

9.2 Other information

No additional information.

SECTION 10: Stability and reactivity

10.1 Reactivity

No specific test data related to reactivity available for this product or its ingredients.

10.2 Chemical stability

The product is stable.

10.3 Possibility of hazardous reactions

Under normal conditions of storage and use, hazardous reactions will not occur.

10.4 Conditions to avoid

No specific data.

10.5 Incompatible materials

May react or be incompatible with oxidising materials.

Reactive or incompatible with the following materials: acids.

10.6 Hazardous decomposition products

Under normal conditions of storage and use, hazardous decomposition products should not be produced.

SECTION 11: Toxicological information

11.1 Information on toxicological effects

**Acute toxicity**

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>Result</th>
<th>Species</th>
<th>Dose</th>
<th>Exposure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tris(Perfluorobutyl)amine</td>
<td>LD50 Oral</td>
<td>Rat</td>
<td>&gt;10 g/kg</td>
<td>-</td>
</tr>
</tbody>
</table>

**Acute toxicity estimates**

N/A

**Irritation/Corrosion**

**Conclusion/Summary**: Not available.

**Sensitiser**

**Conclusion/Summary**: Not available.

**Mutagenicity**

**Conclusion/Summary**: Not available.

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Date of previous issue: 18/10/2022

Version: 2
SECTION 11: Toxicological information

Carcinogenicity
Conclusion/Summary: Not available.

Reproductive toxicity
Conclusion/Summary: Not available.

Teratogenicity
Conclusion/Summary: Not available.

Specific target organ toxicity (single exposure)

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>Category</th>
<th>Route of exposure</th>
<th>Target organs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tris(Perfluorobutyl)amine</td>
<td>Category 3</td>
<td>-</td>
<td>Respiratory tract irritation</td>
</tr>
</tbody>
</table>

Specific target organ toxicity (repeated exposure)
Not available.

Aspiration hazard
Not available.

Information on likely routes of exposure: Routes of entry anticipated: Oral, Dermal, Inhalation, Eyes.

Potential acute health effects

Inhalation: May cause respiratory irritation.
Ingestion: No known significant effects or critical hazards.
Skin contact: Causes skin irritation.
Eye contact: Causes serious eye irritation.

Symptoms related to the physical, chemical and toxicological characteristics

Inhalation: Adverse symptoms may include the following: respiratory tract irritation, coughing.
Ingestion: No specific data.
Skin contact: Adverse symptoms may include the following: irritation, redness.
Eye contact: Adverse symptoms may include the following: pain or irritation, watering, redness.

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

Short term exposure
Potential immediate effects: Not available.
Potential delayed effects: Not available.

Long term exposure
Potential immediate effects: Not available.
Potential delayed effects: Not available.

Potential chronic health effects

General: No known significant effects or critical hazards.
Carcinogenicity: No known significant effects or critical hazards.
Mutagenicity: No known significant effects or critical hazards.
Reproductive toxicity: No known significant effects or critical hazards.
SECTION 11: Toxicological information

11.2 Information on other hazards
11.2.1 Endocrine disrupting properties
Not available.
11.2.2 Other information
Not available.

SECTION 12: Ecological information

12.1 Toxicity
Conclusion/Summary: Not available.

12.2 Persistence and degradability
Not available.

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>Aquatic half-life</th>
<th>Photolysis</th>
<th>Biodegradability</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tris(Perfluorobutyl)amine</td>
<td>-</td>
<td>-</td>
<td>Not readily</td>
</tr>
</tbody>
</table>

12.3 Bioaccumulative potential
Not available.

12.4 Mobility in soil
Soil/water partition coefficient (KOC): 1200000000
Mobility: Not available.

12.5 Results of PBT and vPvB assessment

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>PBT</th>
<th>P</th>
<th>B</th>
<th>T</th>
<th>vPvB</th>
<th>vP</th>
<th>vB</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tris(Perfluorobutyl)amine</td>
<td>No</td>
<td>N/A</td>
<td>N/A</td>
<td>No</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
</tbody>
</table>

12.6 Endocrine disrupting properties
Not available.

12.7 Other adverse effects
No known significant effects or critical hazards.

SECTION 13: Disposal considerations

13.1 Waste treatment methods
Product
Methods of disposal: The generation of waste should be avoided or minimised wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction.

Hazardous waste
Methods of disposal: The classification of the product may meet the criteria for a hazardous waste.

Packaging
Methods of disposal: The generation of waste should be avoided or minimised wherever possible. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible.

Date of issue/Date of revision: 18/10/2022 
Date of previous issue: 18/10/2022 
Version: 2

**Perfluorotributylamine, Part Number MV-T-50010-30059**

### SECTION 13: Disposal considerations

**Special precautions**

This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers.

### SECTION 14: Transport information

<table>
<thead>
<tr>
<th>ADR/RID</th>
<th>IMDG</th>
<th>IATA</th>
</tr>
</thead>
<tbody>
<tr>
<td>14.1 UN number or ID number</td>
<td>Not regulated.</td>
<td>Not regulated.</td>
</tr>
<tr>
<td>14.2 UN proper shipping name</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>14.3 Transport hazard class(es)</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>14.4 Packing group</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>14.5 Environmental hazards</td>
<td>No.</td>
<td>No.</td>
</tr>
</tbody>
</table>

**Additional information**

**14.6 Special precautions for user**

Transport within user’s premises: always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

**14.7 Transport in bulk according to IMO instruments**

Not available.

### SECTION 15: Regulatory information

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

**EU Regulation (EC) No. 1907/2006 (REACH)**

Annex XIV - List of substances subject to authorisation

- **Annex XIV**
  - None of the components are listed.

- **Substances of very high concern**
  - None of the components are listed.

Annex XVII - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles

- Not listed.

**Label**

- Not applicable.

**Other EU regulations**

- **Ozone depleting substances (1005/2009/EU)**
  - Not listed.

- **Prior Informed Consent (PIC) (649/2012/EU)**
  - Not listed.

- **Persistent Organic Pollutants**
  - Not listed.
Perfluorotributylamine, Part Number MV-T-50010-30059

SECTION 15: Regulatory information

**Seveso Directive**
This product is not controlled under the Seveso Directive.

**International regulations**

**Chemical Weapon Convention List Schedules I, II & III Chemicals**
Not listed.

**Montreal Protocol**
Not listed.

**Stockholm Convention on Persistent Organic Pollutants**
Not listed.

**Rotterdam Convention on Prior Informed Consent (PIC)**
Not listed.

**UNECE Aarhus Protocol on POPs and Heavy Metals**
Not listed.

**Inventory list**

- **Australia**: This material is listed or exempted.
- **Canada**: This material is not listed in DSL but is listed in NDSL.
- **China**: This material is listed or exempted.
- **Eurasian Economic Union**: **Russian Federation inventory**: This material is listed or exempted.
- **Japan**: **Japan inventory (CSCL)**: This material is listed or exempted. **Japan inventory (ISHL)**: This material is listed or exempted.
- **New Zealand**: This material is listed or exempted.
- **Philippines**: This material is listed or exempted.
- **Republic of Korea**: This material is listed or exempted.
- **Taiwan**: This material is listed or exempted.
- **Thailand**: Not determined.
- **Turkey**: Not determined.
- **United States**: This material is active or exempted.
- **Viet Nam**: This material is listed or exempted.

**15.2 Chemical safety assessment**
This product contains substances for which Chemical Safety Assessments might still be required.

SECTION 16: Other information

- Indicates information that has changed from previously issued version.

**Abbreviations and acronyms**
- ATE = Acute Toxicity Estimate
- CLP = Classification, Labelling and Packaging Regulation [Regulation (EC) No. 1272/2008]
- DMEL = Derived Minimal Effect Level
- DNEL = Derived No Effect Level
- EUH statement = CLP-specific Hazard statement
- N/A = Not available
- PBT = Persistent, Bioaccumulative and Toxic
- PNEC = Predicted No Effect Concentration
- RRN = REACH Registration Number
- vPvB = Very Persistent and Very Bioaccumulative

**Procedure used to derive the classification according to Regulation (EC) No. 1272/2008 [CLP/GHS]**
SECTION 16: Other information

<table>
<thead>
<tr>
<th>Classification</th>
<th>Justification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Skin Irrit. 2, H315</td>
<td>Expert judgment</td>
</tr>
<tr>
<td>Eye Irrit. 2, H319</td>
<td>Expert judgment</td>
</tr>
<tr>
<td>STOT SE 3, H335</td>
<td>Expert judgment</td>
</tr>
</tbody>
</table>

**Full text of abbreviated H statements**

H315: Causes skin irritation.  
H319: Causes serious eye irritation.  
H335: May cause respiratory irritation.  

**Full text of classifications [CLP/GHS]**

| Eye Irrit. 2         | SERIOUS EYE DAMAGE/EYE IRRITATION - Category 2 |
| Skin Irrit. 2        | SKIN CORROSION/IRRITATION - Category 2         |
| STOT SE 3            | SPECIFIC TARGET ORGAN TOXICITY - SINGLE EXPOSURE - Category 3 |

**Notice to reader**

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