



Safety Data Sheet

Canada

Section 1. Identification

Product name

Sodium Perchlorate 5M; part of 'DNA Extraction Kit BACC3'

Catalogue Number

RPN8512



9 0 R P N 8 5 1 2

Product type

Liquid.

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

Identified uses

Analytical chemistry.
Laboratory chemicals
Scientific research and development

Supplier Cytiva
Amersham Place
Little Chalfont
Buckinghamshire
HP7 9NA United Kingdom
+44 1494 508000

Importer Cytiva Canada
1055 Vernon Dr
Vancouver BC V6A 3P4
Canada
+1 778-956-2584

In case of emergency

INFOTRAC

Outside of the United States, call 24 Hour number: 001-352-323-3500 (Call Collect)
In the United States, call 24 Hour number: 1-800-535-5053

Section 2. Hazard identification

Classification of the substance or mixture OXIDIZING LIQUIDS - Category 2
EYE IRRITATION - Category 2A
SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) - Category 1

GHS label elements

Hazard pictograms



Signal word

Danger

Hazard statements

May intensify fire; oxidizer.
Causes serious eye irritation.
Causes damage to organs through prolonged or repeated exposure.

Precautionary statements

Prevention

Wear protective gloves, protective clothing, eye protection, face protection, or hearing protection.
Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
Keep away from clothing and other combustible materials. Do not breathe vapor. Do not eat, drink or smoke when using this product. Wash thoroughly after handling.

Response

Get medical advice or attention if you feel unwell. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice or attention.



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| Storage | Not applicable. |
| Disposal | Dispose of contents and container in accordance with all local, regional, national and international regulations. |

Section 3. Composition/information on ingredients

Substance/mixture Mixture
Other means of identification Not available.

| Ingredient name | Synonyms | % (w/w) | CAS number |
|------------------------|---|----------------|-------------------|
| Sodium perchlorate | Perchloric acid, sodium salt (1:1); Perchloric acid, sodium salt; compound stabilisers containing by weight 15 % or more but not more than 40 % of sodium perchlorate (CAS RN 7601-89-0) and not more than 70 % of 2-(2-methoxyethoxy) ethanol (CAS RN 111-77-3); perchloric acid sodium salt; Inenat; Perchlorate Salts; Perchloric acid, sodium salt (1:1), Sodium perchlorate | ≥60 - ≤80 | CAS: 7601-89-0 |

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified and hence require reporting in this section.

Occupational exposure limits, if available, are listed in Section 8.

Section 4. First-aid measures

Description of necessary first aid measures

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| 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 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 following exposure or if feeling unwell. 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. |
| Skin contact | Rinse immediately contaminated clothing and skin with plenty of water. Remove contaminated clothing and shoes. Continue to rinse for at least 10 minutes. Get medical attention following exposure or if feeling unwell. 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 following exposure or if feeling unwell. 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. |

Most important symptoms/effects, acute and delayed

Potential acute health effects

| | |
|---------------------|---|
| Eye contact | Causes serious eye irritation. |
| Inhalation | No known significant effects or critical hazards. |
| Skin contact | No known significant effects or critical hazards. |
| 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 | No specific data. |
| Skin contact | No specific data. |
| Ingestion | No specific data. |

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

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| Notes to physician | Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled. |
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| Specific treatments | No specific treatment. |
| Protection of first-aiders | No action shall be taken involving any personal risk or without suitable training. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. |

See toxicological information (Section 11)**Section 5. Fire-fighting measures****Extinguishing media**

| | |
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| Suitable extinguishing media | Use an extinguishing agent suitable for the surrounding fire. |
| Unsuitable extinguishing media | None known. |

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| Specific hazards arising from the chemical | Oxidizing material. May intensify fire. In a fire or if heated, a pressure increase will occur and the container may burst. |
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| Hazardous thermal decomposition products | Decomposition products may include the following materials: halogenated compounds metal oxide/oxides |
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| Special protective actions 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. Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool. |
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| 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. |
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Section 6. Accidental release measures**Personal precautions, protective equipment and emergency procedures**

| | |
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| 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 spilled material. Shut off all ignition sources. No flares, smoking or flames in hazard area. Avoid breathing vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment. |
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| For emergency responders | If specialized 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". |
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| Environmental precautions | Avoid dispersal of spilled 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). |
|----------------------------------|---|

Methods and materials for containment and cleaning up

| | |
|--------------------|---|
| Small spill | Stop leak if without risk. Move containers from spill area. Use spark-proof tools and explosion-proof equipment. Absorb with an inert material and place in an appropriate waste disposal container. Do not absorb in sawdust or other combustible material. It may lead to a fire risk when it dries out. Dispose of via a licensed waste disposal contractor. |
|--------------------|---|

| | |
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| Large spill | Stop leak if without risk. Move containers from spill area. Use spark-proof tools and explosion-proof equipment. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Do not absorb in sawdust or other combustible material. It may lead to a fire risk when it dries out. Wash spillages into an effluent treatment plant or proceed as follows. Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilled product. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations. |
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Section 7. Handling and storage**Precautions for safe handling**

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| Protective measures | Put on appropriate personal protective equipment (see Section 8). Do not breathe vapor or mist. Do not ingest. Avoid contact with eyes, skin and clothing. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Keep away from clothing, incompatible materials and combustible materials. Keep away from heat. Empty containers retain product residue and can be hazardous. Do not reuse container. |
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| 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. |
|---|---|



**Conditions for safe storage,
including any incompatibilities**

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. Separate from reducing agents and combustible materials. Store away from grease and oil. 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 unlabeled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use.

Section 8. Exposure controls/personal protection**Control parameters****Occupational exposure limits**

None.

Biological exposure indices

No exposure indices known.

**Appropriate engineering
controls**

If user operations generate dust, fumes, gas, vapor 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.

**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.

Individual protection measures**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.

Section 9. Physical and chemical properties and safety characteristics

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

Appearance**Physical state**

Liquid.

Color

Colorless.

Odor

Odorless.

Odor threshold

Not available.

pH

8 [Conc. (% w/w): 100%]

Melting point/freezing point

Not available.

**Boiling point or initial boiling
point and boiling range**

Not available.

Flash point

Not applicable.

Burning time

Not applicable.

Burning rate

Not applicable.



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| Evaporation rate | Not available. | | | | | | | | | | | |
|---|---|-------------------------------|------------|---------------|-------------------------------|------------|--------------|---------------|------------|----------------|-----------|----------------|
| Flammability | Not available. | | | | | | | | | | | |
| Lower and upper explosive (flammable) limits | Not available. | | | | | | | | | | | |
| Vapor pressure | Not available. | | | | | | | | | | | |
| | | Vapor Pressure at 20°C | | | Vapor pressure at 50°C | | | | | | | |
| | Ingredient name | mm Hg | kPa | Method | mm Hg | kPa | | | | | | |
| | water | 17.5 | 2.3 | | | | | | | | | |
| Relative vapor density | Not available. | | | | | | | | | | | |
| Relative density | Not available. | | | | | | | | | | | |
| Solubility(ies) | <table> <thead> <tr> <th>Media</th><th>Result</th></tr> </thead> <tbody> <tr> <td>cold water</td><td>Easily soluble</td></tr> <tr> <td>hot water</td><td>Easily soluble</td></tr> </tbody> </table> | | | | | | Media | Result | cold water | Easily soluble | hot water | Easily soluble |
| Media | Result | | | | | | | | | | | |
| cold water | Easily soluble | | | | | | | | | | | |
| hot water | Easily soluble | | | | | | | | | | | |
| Solubility in water | Not available. | | | | | | | | | | | |
| Partition coefficient: n-octanol/water | Not applicable. | | | | | | | | | | | |
| Auto-ignition temperature | Not available. | | | | | | | | | | | |
| Decomposition temperature | Not available. | | | | | | | | | | | |
| SADT | Not available. | | | | | | | | | | | |
| Viscosity | Not available. | | | | | | | | | | | |
| Flow time (ISO 2431) | Not available. | | | | | | | | | | | |
| Particle characteristics | | | | | | | | | | | | |
| Median particle size | Not applicable. | | | | | | | | | | | |

Section 10. Stability and reactivity

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| Reactivity | No specific test data related to reactivity available for this product or its ingredients. |
| Chemical stability | The product is stable. |
| Possibility of hazardous reactions | Hazardous reactions or instability may occur under certain conditions of storage or use. Conditions may include the following: contact with combustible materials Reactions may include the following: risk of causing or intensifying fire |
| Conditions to avoid | Drying on clothing or other combustible materials may cause fire. |
| Incompatible materials | Reactive or incompatible with the following materials: combustible materials reducing materials |
| Hazardous decomposition products | Under normal conditions of storage and use, hazardous decomposition products should not be produced. |

Section 11. Toxicological information

Information on toxicological effects

Acute toxicity

| | | |
|-------------------------------------|----------------|--|
| Product/ingredient name | | Result |
| Sodium perchlorate | | Rat - Oral - LD50 2100 mg/kg Toxic effects: Behavioral - Excitement Lung, Thorax, or Respiration - Dyspnea Changes in Chemistry or Temperature - Body temperature decrease |
| Conclusion/Summary [Product] | Not available. | |
| | | |

Skin corrosion/irritation

Not available.

| | |
|-------------------------------------|----------------|
| Conclusion/Summary [Product] | Not available. |
| | |

Serious eye damage/eye irritation



Not available.

Conclusion/Summary [Product] Not available.

Respiratory corrosion/irritation

Not available.

Conclusion/Summary [Product] Not available.

Respiratory or skin sensitization

Not available.

Skin

Conclusion/Summary [Product] Not available.

Respiratory

Conclusion/Summary [Product] Not available.

Germ cell mutagenicity

Not available.

Conclusion/Summary [Product] Not available.

Carcinogenicity

Not available.

Conclusion/Summary [Product] Not available.

Reproductive toxicity

Not available.

Conclusion/Summary [Product] Not available.

Specific target organ toxicity (single exposure)

Not available.

Specific target organ toxicity (repeated exposure)

Product/ingredient name

Sodium perchlorate

Result

SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) - Category 1

Aspiration hazard

Not available.

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

Potential acute health effects

Eye contact Causes serious eye irritation.



| | |
|---------------------|---|
| Inhalation | No known significant effects or critical hazards. |
| Skin contact | No known significant effects or critical hazards. |
| Ingestion | No known significant effects or critical hazards. |

Symptoms related to the physical, chemical and toxicological characteristics

| | |
|---------------------|--|
| Eye contact | Adverse symptoms may include the following: pain or irritation watering redness |
| Inhalation | No specific data. |
| Skin contact | No specific data. |
| Ingestion | No specific data. |

Delayed and immediate effects and also 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

Not available.

| | |
|-------------------------------------|---|
| Conclusion/Summary [Product] | Not available. |
| General | Causes damage to organs through prolonged or repeated exposure. |
| 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. |

Numerical measures of toxicity**Acute toxicity estimates**

| Product/ingredient name | Oral (mg/kg) | Dermal (mg/kg) | Inhalation (gases) (ppm) | Inhalation (vapors) (mg/l) | Inhalation (dusts and mists) (mg/l) |
|---|--------------|----------------|--------------------------|----------------------------|-------------------------------------|
| Sodium Perchlorate, 5 M; part of 'DNA Extraction Kit BACC3' | 3360.0 | N/A | N/A | N/A | N/A |
| Sodium perchlorate | 2100 | N/A | N/A | N/A | N/A |

| | |
|--------------------------|---|
| Other information | Adverse symptoms include the following: methemoglobinemia |
|--------------------------|---|

Section 12. Ecological information**Toxicity**

| Product/ingredient name | Result |
|-------------------------|--|
| Sodium perchlorate | Chronic - NOEC - Fresh water Fish - Eastern mosquitofish - <i>Gambusia holbrooki</i> - Adult 7.31 mg/l [8 weeks] <u>Effect:</u> Reproduction |
| | Chronic - EC10 - Fresh water OECD Daphnia - Water flea - <i>Daphnia magna</i> - Neonate Age: <24 hours 104.23 mg/l [21 days] <u>Effect:</u> Reproduction |
| | Acute - LC50 - Fresh water US EPA, ASTM Crustaceans - Water flea - <i>Ceriodaphnia dubia</i> - Neonate Age: <8 hours 64.77235 mg/l [48 hours] <u>Effect:</u> Mortality |
| | Acute - LC50 - Fresh water |



US EPA, ASTM
 Fish - Fathead minnow - *Pimephales promelas* - Larvae
Age: <24 hours
 397 mg/l [96 hours]
Effect: Mortality

Conclusion/Summary [Product] Not available.

Persistence and degradability

Not available.

Conclusion/Summary [Product] Not available.

Bioaccumulative potential

| Product/ingredient name | LogP _{ow} | BCF | Potential |
|-------------------------|--------------------|---------------------------|-----------|
| Sodium perchlorate | - | 0.06 to 0.14 [OECD 305 B] | Low |

Mobility in soil

Soil/Water partition coefficient Not available.

Other adverse effects No known significant effects or critical hazards.

Section 13. Disposal considerations

Disposal methods

The generation of waste should be avoided or minimized 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. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. 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 spilled material and runoff and contact with soil, waterways, drains and sewers.

Section 14. Transport information

| | TDG Classification | DOT Classification | ADR/RID | IMDG | IATA |
|-------------------------------------|---|---|---|---|---|
| UN number | UN3211 | UN3211 | UN3211 | UN3211 | UN3211 |
| UN proper shipping name | PERCHLORATES, INORGANIC, AQUEOUS SOLUTION, N.O.S. (5M Sodium perchlorate solution) (sodium perchlorate) | PERCHLORATES, INORGANIC, AQUEOUS SOLUTION, N.O.S. (5M Sodium perchlorate solution) (sodium perchlorate) | PERCHLORATES, INORGANIC, AQUEOUS SOLUTION, N.O.S. (5M Sodium perchlorate solution) (sodium perchlorate) | PERCHLORATES, INORGANIC, AQUEOUS SOLUTION, N.O.S. (5M Sodium perchlorate solution) (sodium perchlorate) | PERCHLORATES, INORGANIC, AQUEOUS SOLUTION, N.O.S. (5M Sodium perchlorate solution) (sodium perchlorate) |
| Transport hazard class(es) | 5.1 | 5.1 | 5.1 | 5.1 | 5.1 |
| | | | | | |
| Packing group | II | II | II | II | II |
| Environmental hazards | No. | No. | No. | No. | No. |
| Additional information | - | - | - | - | - |
| 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. | | | | |



Transport in bulk according to IMO instruments Not available.

Section 15. Regulatory information

Canadian lists

| | |
|------------------------------|------------------------------------|
| Canadian NPRI | None of the components are listed. |
| CEPA Toxic substances | None of the components are listed. |

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

| | |
|----------------------|--|
| Canada | All components are listed or exempted. |
| United States | All components are active or exempted. |

Section 16. Other information

History

Date of printing 2/20/2026

Date of issue/Date of revision 2/20/2026

Date of previous issue 7/23/2025

Version 11.02

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Key to abbreviations

ATE = Acute Toxicity Estimate
BCF = Bioconcentration Factor
GHS = Globally Harmonized System of Classification and Labelling of Chemicals
HPR = Hazardous Products Regulations
IATA = International Air Transport Association
IBC = Intermediate Bulk Container
IMDG = International Maritime Dangerous Goods
LogPow = logarithm of the octanol/water partition coefficient
MARPOL = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution)
N/A = Not available
UN = United Nations

Procedure used to derive the classification

| Classification | Justification |
|----------------|---------------|
|----------------|---------------|

| | |
|---|--------------------|
| OXIDIZING LIQUIDS - Category 2 | Expert judgment |
| EYE IRRITATION - Category 2A | Calculation method |
| SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) - Category 1 | Calculation method |

References

Not available.



Indicates information that has changed from previously issued version.

Notice to reader

To the best of our knowledge, the information contained herein is accurate. However, neither the above-named supplier, nor any of its subsidiaries, assumes any liability whatsoever for the accuracy or completeness of the information contained herein. Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.





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