



# SAFETY DATA SHEET

United States

## Section 1. Identification

Product name

**Lysis buffer type 2; part of 'bacterial genomicPrep Mini Spin Kit, 250 purifications'**

Catalogue Number

**28-9042-59**



9 0 2 8 9 0 4 2 5 9

Chemical name

Proteinase K

Other means of identification

Not available.

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

Cytiva USA  
100 Results Way  
Marlborough, MA 01752  
1-800-526-3593

In case of emergency

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

## Section 2. Hazards identification

OSHA/HCS status

This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

Classification of the substance or mixture

SKIN IRRITATION - Category 2  
EYE IRRITATION - Category 2A  
RESPIRATORY SENSITIZATION - Category 1  
SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3  
Percentage of the mixture consisting of ingredient(s) of unknown hazards to the aquatic environment: 100%

### GHS label elements

Hazard pictograms



Signal word

Danger

Hazard statements

Causes skin irritation.  
Causes serious eye irritation.  
May cause allergy or asthma symptoms or breathing difficulties if inhaled.  
May cause respiratory irritation.

### Precautionary statements

Prevention

Wear protective gloves. Wear eye or face protection. Wear respiratory protection. Use only outdoors or in a well-ventilated area. Avoid breathing vapor. Wash thoroughly after handling.



Response	IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER or doctor if you feel unwell. If experiencing respiratory symptoms: Call a POISON CENTER or doctor. IF ON SKIN: Wash with plenty of water. If skin irritation occurs: Get medical advice or attention. Take off contaminated clothing and wash it before reuse. 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.
Storage	Store locked up. Store in a well-ventilated place. Keep container tightly closed.
Disposal	Dispose of contents and container in accordance with all local, regional, national and international regulations.
Hazards not otherwise classified	None known.
Hazards identified when used	No known significant effects or critical hazards.

Section 3. Composition/information on ingredients

Substance/mixture	Mixture		
Chemical name	Proteinase K		
Other means of identification	Not available.		
Ingredient name	Synonyms	%	Identifiers
proteases	Proteinase K; Protease E.C.3.4.21.62 (bacillus licheniformis, into which protease producing gene of bacilluslentus was introduced); Tritirachium album serine proteinase; (4-nitrophenyl)methyl (4R,5S,6S)-6-[(1R)-1-hydroxyethyl]-4-methyl-7-oxo-3,4-diphenoxy-5-phosphonooxy-1-azabicyclo[3.2.0]hept-2-ene-2-carboxylate	≥80	CAS: 39450-01-6
sodium dodecyl sulphate	Sulfuric acid monododecyl ester sodium salt (1:1); Sulfuric acid monododecyl ester sodium salt; Sulfuric acid, monododecyl ester, sodium salt; Dodecyl hydrogen sulfate; Sodium dodecyl sulfate; SODIUM LAURYL SULFATE; Dodecyl sodium sulphate; ethylcellulose, in the form of an aqueous dispersion containing hexadecan-1-ol (CAS RN 36653-82-4) and sodium dodecyl sulphate (CAS RN 151-21-3), containing by weight 27 (± 3) % of ethylcellulose; SODIUM MONODODECYL SULFATE; SODIUM LAURYL SULFATE, DENTAL GRADE; SODIUM LAURYL SULFATE 30%	≥0.1 - ≤1	CAS: 151-21-3

Any concentration shown as a range is to protect confidentiality or is due to batch variation.

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

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 the event of any complaints or symptoms, avoid further exposure.
Skin contact	Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Continue to rinse for at least 10 minutes. Get medical attention. Wash clothing before reuse. Clean shoes thoroughly before reuse.

<b>Ingestion</b>	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.
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**Most important symptoms/effects, acute and delayed****Potential acute health effects**

<b>Eye contact</b>	Causes serious eye irritation.
<b>Inhalation</b>	May cause respiratory irritation. May cause allergy or asthma symptoms or breathing difficulties if inhaled.
<b>Skin contact</b>	Causes skin irritation.
<b>Ingestion</b>	No known significant effects or critical hazards.

**Over-exposure signs/symptoms**

<b>Eye contact</b>	Adverse symptoms may include the following: pain or irritation watering redness
<b>Inhalation</b>	Adverse symptoms may include the following: respiratory tract irritation coughing wheezing and breathing difficulties asthma
<b>Skin contact</b>	Adverse symptoms may include the following: irritation redness
<b>Ingestion</b>	No specific data.

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

<b>Notes to physician</b>	Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
<b>Specific treatments</b>	No specific treatment.
<b>Protection of first-aiders</b>	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.

See toxicological information (Section 11)

**Section 5. Fire-fighting measures****Extinguishing media**

<b>Suitable extinguishing media</b>	Use an extinguishing agent suitable for the surrounding fire.
<b>Unsuitable extinguishing media</b>	None known.
<b>Specific hazards arising from the chemical</b>	In a fire or if heated, a pressure increase will occur and the container may burst.
<b>Hazardous thermal decomposition products</b>	No specific data.
<b>Special protective actions for fire-fighters</b>	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.
<b>Special protective equipment for fire-fighters</b>	Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

**Section 6. Accidental release measures****Personal precautions, protective equipment and emergency procedures**

<b>For non-emergency personnel</b>	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. Avoid breathing vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.
<b>For emergency responders</b>	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".
<b>Environmental precautions</b>	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. Absorb with an inert material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.
Large spill	Stop leak if without risk. Move containers from spill area. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. 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.

Section 7. Handling and storage

Precautions for safe handling

Protective measures	Put on appropriate personal protective equipment (see Section 8). Persons with a history of asthma, allergies or chronic or recurrent respiratory disease should not be employed in any process in which this product is used. Do not get in eyes or on skin or clothing. Do not ingest. Avoid breathing vapor 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.
Conditions for safe storage, including any incompatibilities	Do not store above the following temperature: -20°C (-4°F). 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 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

Ingredient name	Exposure limits
proteases	None.
sodium dodecyl sulphate	None.

Biological exposure indices

No exposure indices known.

Appropriate engineering controls	Use only with adequate ventilation. 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.

Section 9. Physical and chemical properties

<b>Physical state</b>	Liquid.
<b>Color</b>	Colorless.
<b>Odor</b>	Odorless.
<b>Odor threshold</b>	Not available.
<b>pH</b>	8
<b>Melting point/freezing point</b>	Decomposes
<b>Boiling point or initial boiling point and boiling range</b>	Decomposes
<b>Flash point</b>	Not applicable.
<b>Burning time</b>	Not applicable.
<b>Burning rate</b>	Not applicable.
<b>Evaporation rate</b>	Not available.
<b>Flammability</b>	Non-flammable but will burn on prolonged exposure to flame or high temperature.
<b>Lower and upper explosive (flammable) limits</b>	Not available.
<b>Vapor pressure</b>	Not available.

Relative vapor density	Not available.
Relative density	Not available.
Solubility(ies)	

<b>Solubility in water</b>	Not available.
<b>Partition coefficient: n-octanol/ water</b>	Not applicable.

Flow time (ISO 2431)	Not available.
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<b>Median particle size</b>	Not applicable.
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## Section 10. Stability and reactivity

Article Number :

Section 11. Toxicological information

Information on toxicological effects

Acute toxicity

Product/ingredient name  
sodium dodecyl sulphate

Result  
Rat - Oral - LD50  
1288 mg/kg

Conclusion/Summary  
[Product] Not available.

Ingredient name  
proteases

Conclusion/Summary  
To the best of our knowledge, the toxicological properties of this substance have not been thoroughly investigated.

Skin corrosion/irritation

Product/ingredient name  
sodium dodecyl sulphate

Result  
Human - Skin - Mild irritant  
Duration of treatment/exposure: 48 hours  
Amount/concentration applied: 5 %  
Human - Skin - Severe irritant  
Duration of treatment/exposure: 24 hours  
Amount/concentration applied: 10 %  
Guinea pig - Skin - Mild irritant  
Duration of treatment/exposure: 336 hours  
Amount/concentration applied: 25250 ppm  
Guinea pig - Skin - Mild irritant  
Duration of treatment/exposure: 24 hours  
Amount/concentration applied: 25250 ppm  
Guinea pig - Skin - Severe irritant  
Duration of treatment/exposure: 48 hours  
Amount/concentration applied: 25250 ppm  
Guinea pig - Skin - Severe irritant  
Duration of treatment/exposure: 72 hours  
Amount/concentration applied: 25250 ppm  
Human - Skin - Mild irritant  
Duration of treatment/exposure: 24 hours  
Amount/concentration applied: 0.5 %  
Human - Skin - Moderate irritant  
Duration of treatment/exposure: 24 hours  
Amount/concentration applied: 10 pph  
Man - Skin - Mild irritant  
Duration of treatment/exposure: 24 hours  
Amount/concentration applied: 5 %  
Mouse - Skin - Moderate irritant  
Duration of treatment/exposure: 24 hours  
Amount/concentration applied: 5 %  
Rabbit - Skin - Moderate irritant  
Duration of treatment/exposure: 24 hours  
Amount/concentration applied: 5 %  
Rabbit - Skin - Severe irritant  
Duration of treatment/exposure: 24 hours  
Amount/concentration applied: 2.5 %  
Mouse - Skin - Severe irritant  
Duration of treatment/exposure: 4 hours  
Amount/concentration applied: 1 pph  
Rabbit - Skin - Mild irritant  
Duration of treatment/exposure: 1 hours  
Amount/concentration applied: 5 %

Conclusion/Summary  
[Product] Not available.

Serious eye damage/eye irritation

Product/ingredient name

Result



**Rabbit - Eyes - Mild irritant**  
Duration of treatment/exposure: 1 hours  
Amount/concentration applied: 5 pph  
**Rabbit - Eyes - Severe irritant**  
Duration of treatment/exposure: 1 hours  
Amount/concentration applied: 1 %  
**Rabbit - Eyes - Severe irritant**  
Duration of treatment/exposure: 1 hours  
Amount/concentration applied: 1 %

**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.

**Ingredient name**  
proteases

**Conclusion/Summary**  
To the best of our knowledge, the toxicological properties of this substance have not been thoroughly investigated.

**Reproductive toxicity**

Not available.

**Conclusion/Summary [Product]** Not available.

**Specific target organ toxicity (single exposure)**

**Product/ingredient name**  
proteases

**Result**  
SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE)  
(Respiratory tract irritation) - Category 3

**Specific target organ toxicity (repeated exposure)**

Not available.

**Aspiration hazard**

Not available.

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

**Potential acute health effects**

<b>Eye contact</b>	Causes serious eye irritation.
<b>Inhalation</b>	May cause respiratory irritation. May cause allergy or asthma symptoms or breathing difficulties if inhaled.
<b>Skin contact</b>	Causes skin irritation.
<b>Ingestion</b>	No known significant effects or critical hazards.

**Symptoms related to the physical, chemical and toxicological characteristics**

<b>Eye contact</b>	Adverse symptoms may include the following: pain or irritation watering redness
<b>Inhalation</b>	Adverse symptoms may include the following: respiratory tract irritation coughing wheezing and breathing difficulties asthma
<b>Skin contact</b>	Adverse symptoms may include the following: irritation redness
<b>Ingestion</b>	No specific data.

**Delayed and immediate effects and also chronic effects from short and long term exposure****Short term exposure**

<b>Potential immediate effects</b>	Not available.
<b>Potential delayed effects</b>	Not available.

**Long term exposure**

<b>Potential immediate effects</b>	Not available.
<b>Potential delayed effects</b>	Not available.

**Potential chronic health effects**

Not available.

<b>Conclusion/Summary [Product]</b>	Not available.
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<b>General</b>	Once sensitized, a severe allergic reaction may occur when subsequently exposed to very low levels.
<b>Carcinogenicity</b>	No known significant effects or critical hazards.
<b>Mutagenicity</b>	No known significant effects or critical hazards.
<b>Reproductive toxicity</b>	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 dodecyl sulphate	1288	N/A	N/A	N/A	N/A

**Section 12. Ecological information****Toxicity**

Product/ingredient name	Result
sodium dodecyl sulphate	<b>Acute - LC50 - Fresh water</b> Fish - Carp, hawk fish - <i>Cirrhinus mrigala</i> - Larvae Age: 2 days; Size: 4.5 mm; Weight: 51 mg 590 µg/l [96 hours] Effect: Mortality <b>Acute - EC50 - Marine water</b> Algae - Diatom - <i>Skeletonema costatum</i> 1200 µg/l [96 hours] Effect: Population





		<b>Acute - LC50 - Marine water</b> Crustaceans - Brine shrimp - <i>Artemia salina</i> - Adult <u>Age</u> : 25 days; <u>Size</u> : 3.5 to 4.5 mm 900 µg/l [48 hours] <u>Effect</u> : Mortality <b>Chronic - NOEC - Marine water</b> Algae - Sea Lettuce - <i>Ulva fasciata</i> - Zoea 1.25 mg/l [96 hours] <u>Effect</u> : Reproduction <b>Chronic - NOEC - Fresh water</b> OECD Crustaceans - Water flea - <i>Pseudosida ramosa</i> - Neonate <u>Age</u> : <24 hours 1 mg/l [21 days] <u>Effect</u> : Reproduction <b>Chronic - NOEC - Fresh water</b> OECD Fish - Eastern mosquitofish - <i>Gambusia holbrooki</i> <u>Weight</u> : 0.14 g 0.8 mg/l [28 days] <u>Effect</u> : Enzymes
<b>Conclusion/Summary [Product]</b>	Not available.	

Persistence and degradability

Not available.

<b>Product/ingredient name</b> sodium dodecyl sulphate	<b>Aquatic half-life</b> -	<b>Photolysis</b> >60%; 28 day(s)	<b>Biodegradability</b> Readily
<b>Bioaccumulative potential</b>			
<b>Product/ingredient name</b> sodium dodecyl sulphate	<b>LogP<sub>ow</sub></b> -2.03	<b>BCF</b> -	<b>Potential</b> Low
<b>Mobility in soil</b>			
<b>Soil/Water partition coefficient</b>	Not available.		
<b>Other adverse effects</b>	No known significant effects or critical hazards.		

Section 13. Disposal considerations

<b>Disposal methods</b>	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.
<b>RCRA classification</b>	Not classified

Section 14. Transport information

Product is not regulated as dangerous goods for transport.

Section 15. Regulatory information

<b>U.S. Federal regulations</b>	<b>TSCA 8(a) CDR Exempt/Partial exemption</b> : Not determined <b>Clean Water Act (CWA) 311</b> : edetic acid
<b>TSCA 12(b) - Chemical export notification</b>	
Not applicable.	
<b>Clean Air Act Section 112(b) Hazardous Air Pollutants (HAPs)</b>	Not listed
<b>Clean Air Act Section 602 Class I Substances</b>	Not listed
<b>Clean Air Act Section 602 Class II Substances</b>	Not listed

**DEA List I Chemicals (Precursor Chemicals)** Not listed

**DEA List II Chemicals (Essential Chemicals)** Not listed

#### **SARA 302/304**

##### **Composition/information on ingredients**

No products were found.

**SARA 304 RQ** Not applicable.

#### **SARA 311/312**

**Classification** SKIN IRRITATION - Category 2  
EYE IRRITATION - Category 2A  
RESPIRATORY SENSITIZATION - Category 1  
SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3

##### **Composition/information on ingredients**

<b>Name</b>	<b>%</b>	<b>Classification</b>
proteases	100	SKIN IRRITATION - Category 2 EYE IRRITATION - Category 2A RESPIRATORY SENSITIZATION - Category 1 SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3

#### **State regulations**

**Massachusetts** None of the components are listed.

**New York** None of the components are listed.

**New Jersey** None of the components are listed.

**Pennsylvania** None of the components are listed.

#### **California Prop. 65**

This product does not require a Safe Harbor warning under California Prop. 65.

#### **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**

**United States** Not determined.

**Canada inventory** Not determined.

## Section 16. Other information

#### **National Fire Protection Association (U.S.A.)**




#### **Procedure used to derive the classification**

<b>Classification</b>	<b>Justification</b>
SKIN IRRITATION - Category 2	Calculation method
EYE IRRITATION - Category 2A	Calculation method
RESPIRATORY SENSITIZATION - Category 1	Calculation method
SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3	Calculation method

#### **History**



Date of printing	2/20/2026
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Date of previous issue	7/21/2025
Version	5.02
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Key to abbreviations	ATE = Acute Toxicity Estimate
	BCF = Bioconcentration Factor
	GHS = Globally Harmonized System of Classification and Labelling of Chemicals
	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
References	Not available.

 Indicates information that has changed from previously issued version.

**Notice to reader**

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