

SECTION 1: Identification

1.1. Identification

Product form : Mixture
Trade name : Poly(ethylene oxide) [MW 200,000]
Product code : 17503
Formula : (CH₂CH₂O)_x

1.2. Recommended use and restrictions on use

Recommended use : Use as laboratory reagent, Manufacture of substances

1.3. Supplier

Supplier

Polysciences
400 Valley Road
Warrington, PA 18976 - United States
T +1 215 343 6484 - F +1 215 343 0214
info@polysciences.com - www.polysciences.com

1.4. Emergency telephone number

Emergency number : 24-hour emergency phone number ChemTel 1-800-255-3924

SECTION 2: Hazard(s) identification

2.1. Classification of the substance or mixture

GHS US classification

Serious eye damage/eye irritation Category 2A Causes serious eye irritation

2.2. GHS Label elements, including precautionary statements

GHS US labeling

Hazard pictograms (GHS US) :



Signal word (GHS US) :

Warning

Hazard statements (GHS US) :

Causes serious eye irritation

Precautionary statements (GHS US) :

Wash hands, forearms and face thoroughly after handling.
Wear protective gloves/protective clothing/eye protection/face protection.
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/attention

2.3. Other hazards which do not result in classification

No additional information available

2.4. Unknown acute toxicity (GHS US)

Not applicable

SECTION 3: Composition/Information on ingredients

3.1. Substances

Not applicable

3.2. Mixtures

| Name | Product identifier | % | GHS US classification |
|---------------------|----------------------|----------|-----------------------|
| Polyethylene glycol | (CAS-No.) 25322-68-3 | 90 – 100 | STOT SE 3, H335 |

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| Name | Product identifier | % | GHS US classification |
|----------------|---------------------|-------|--|
| Ammonia | (CAS-No.) 7664-41-7 | 0 – 5 | Flam. Gas 2, H221 Acute Tox. 3 (Inhalation), H331 Acute Tox. 3 (Inhalation:gas), H331 Skin Corr. 1, H314 Eye Dam. 1, H318 Aquatic Acute 1, H400 |
| Ethylene oxide | (CAS-No.) 75-21-8 | 0 – 5 | Flam. Gas 1, H220 Press. Gas (Liq.), H280 Acute Tox. 4 (Oral), H302 Acute Tox. 3 (Inhalation), H331 Acute Tox. 3 (Inhalation:gas), H331 Skin Irrit. 2, H315 Eye Irrit. 2, H319 Muta. 1B, H340 Carc. 1A, H350 STOT SE 3, H335 Aquatic Acute 3, H402 |
| Ethylamine | (CAS-No.) 75-04-7 | 0 – 5 | Acute Tox. 4 (Inhalation:gas), H332 Eye Irrit. 2, H319 STOT SE 3, H335 Aquatic Acute 3, H402 |

Full text of hazard classes and H-statements : see section 16

SECTION 4: First-aid measures

4.1. Description of first aid measures

- First-aid measures after inhalation : Remove person to fresh air and keep comfortable for breathing.
- First-aid measures after skin contact : Wash skin with plenty of water.
- First-aid measures after eye contact : 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/attention.
- First-aid measures after ingestion : Call a poison center/doctor/physician if you feel unwell.

4.2. Most important symptoms and effects (acute and delayed)

- Symptoms/effects after eye contact : Eye irritation.

4.3. Immediate medical attention and special treatment, if necessary

Treat symptomatically.

SECTION 5: Fire-fighting measures

5.1. Suitable (and unsuitable) extinguishing media

- Suitable extinguishing media : Water spray. Dry powder. Foam.

5.2. Specific hazards arising from the chemical

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

5.3. Special protective equipment and precautions for fire-fighters

- Protection during firefighting : Do not attempt to take action without suitable protective equipment. Self-contained breathing apparatus. Complete protective clothing.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel

- Emergency procedures : Ventilate spillage area. Avoid contact with skin and eyes.

6.1.2. For emergency responders

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

6.2. Environmental precautions

Avoid release to the environment.

6.3. Methods and material for containment and cleaning up

- Methods for cleaning up : Mechanically recover the product.

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

6.4. Reference to other sections

For further information refer to section 13.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Precautions for safe handling : Ensure good ventilation of the work station. Wear personal protective equipment. Avoid contact with skin and eyes.

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

7.2. Conditions for safe storage, including any incompatibilities

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

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

| | |
|---|---|
| Poly(ethylene oxide) [MW 200,000] | |
| No additional information available | |
| Ammonia (7664-41-7) | |
| USA - ACGIH - Occupational Exposure Limits | |
| Local name | Ammonia |
| ACGIH TWA (ppm) | 25 ppm |
| ACGIH STEL (ppm) | 35 ppm |
| Remark (ACGIH) | TLV® Basis: Eye dam; URT irr |
| Regulatory reference | ACGIH 2020 |
| USA - OSHA - Occupational Exposure Limits | |
| Local name | Ammonia |
| OSHA PEL (TWA) (mg/m ³) | 35 mg/m ³ |
| OSHA PEL (TWA) (ppm) | 50 ppm |
| Regulatory reference (US-OSHA) | OSHA Annotated Table Z-1 |
| USA - IDLH - Occupational Exposure Limits | |
| US IDLH (ppm) | 300 ppm |
| USA - NIOSH - Occupational Exposure Limits | |
| NIOSH REL (TWA) (mg/m ³) | 18 mg/m ³ |
| NIOSH REL TWA [ppm] | 25 ppm |
| NIOSH REL (STEL) (mg/m ³) | 27 mg/m ³ |
| NIOSH REL STEL [ppm] | 35 ppm |
| Ethylene oxide (75-21-8) | |
| USA - ACGIH - Occupational Exposure Limits | |
| Local name | Ethylene oxide |
| ACGIH TWA (ppm) | 1 ppm |
| Remark (ACGIH) | TLV® Basis: Cancer; CNS impair. Notations: A2 (Suspected Human Carcinogen) |
| ACGIH chemical category | Suspected Human Carcinogen |
| Regulatory reference | ACGIH 2020 |
| USA - ACGIH - Biological Exposure Indices | |
| Local name | ETHYLENE OXIDE |
| Biological Exposure Indices (BEI) | 5000 pmol/g Globin Parameter: N-(2-hydroxyethyl)valine (HEV) - Medium: hemoglobin adducts - Sampling time: Not critical - Notations: Ns 5 µg/g Kreatinin Parameter: S-(2-hydroxyethyl)mercapturic acid (HEMA) - Medium: urine - Sampling time: End of shift - Notations: Pop, Ns |
| ACGIH remark (BEI) | The value of HEV hemoglobin adducts applies to workers having representative Ethylene oxide exposure during the previous 120 days |
| Regulatory reference | ACGIH 2020 |
| USA - OSHA - Occupational Exposure Limits | |
| OSHA PEL (TWA) (ppm) | 1 ppm |
| OSHA PEL (STEL) (ppm) | 5 ppm (see 29 CFR 1910.1047) |

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| USA - IDLH - Occupational Exposure Limits | |
|--|--|
| US IDLH (ppm) | 800 ppm |
| USA - NIOSH - Occupational Exposure Limits | |
| NIOSH REL (TWA) (mg/m ³) | 0.18 mg/m ³ (less than stated value) |
| NIOSH REL TWA [ppm] | 0.1 ppm (less than stated value) |
| NIOSH REL (ceiling) (mg/m ³) | 9 mg/m ³ |
| NIOSH REL C [ppm] | 5 ppm |
| Ethylamine (75-04-7) | |
| USA - ACGIH - Occupational Exposure Limits | |
| Local name | Ethylamine |
| ACGIH TWA (ppm) | 5 ppm |
| ACGIH STEL (ppm) | 15 ppm |
| Remark (ACGIH) | TLV® Basis: URT irr. Notations: Skin |
| ACGIH chemical category | Skin - potential significant contribution to overall exposure by the cutaneous route |
| Regulatory reference | ACGIH 2020 |
| USA - OSHA - Occupational Exposure Limits | |
| Local name | Ethylamine |
| OSHA PEL (TWA) (mg/m ³) | 18 mg/m ³ |
| OSHA PEL (TWA) (ppm) | 10 ppm |
| Regulatory reference (US-OSHA) | OSHA Annotated Table Z-1 |
| USA - IDLH - Occupational Exposure Limits | |
| US IDLH (ppm) | 600 ppm |
| USA - NIOSH - Occupational Exposure Limits | |
| NIOSH REL (TWA) (mg/m ³) | 18 mg/m ³ |
| NIOSH REL TWA [ppm] | 10 ppm |
| Polyethylene glycol (25322-68-3) | |
| USA - AIHA - Occupational Exposure Limits | |
| WEEL TWA (mg/m ³) | 10 mg/m ³ (MW>200-aerosol) |

8.2. Appropriate engineering controls

- Appropriate engineering controls : Ensure good ventilation of the work station.
Environmental exposure controls : Avoid release to the environment.

8.3. Individual protection measures/Personal protective equipment

Hand protection:

Protective gloves

Eye protection:

Safety glasses

Skin and body protection:

Wear suitable protective clothing

Respiratory protection:

In case of insufficient ventilation, wear suitable respiratory equipment

Personal protective equipment symbol(s):



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SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

| | |
|---|---|
| Physical state | : Solid |
| Appearance | : White powder. |
| Color | : Mixture contains one or more component(s) which have the following colour(s): Colorless |
| Odor | : There may be no odour warning properties, odour is subjective and inadequate to warn of overexposure. Mixture contains one or more component(s) which have the following odour: sharp intensely irritating ammonia-like |
| Odor threshold | : No data available |
| pH | : No data available |
| Melting point | : 143 |
| Freezing point | : Not applicable |
| Boiling point | : no data |
| Flash point | : no data |
| Relative evaporation rate (butyl acetate=1) | : No data available |
| Flammability (solid, gas) | : Non flammable. |
| Vapor pressure | : no data |
| Relative vapor density at 20°C | : no data |
| Relative density | : No data available |
| Solubility | : No data available |
| Partition coefficient n-octanol/water (Log Pow) | : No data available |
| Auto-ignition temperature | : Not applicable |
| Decomposition temperature | : No data available |
| Viscosity, kinematic | : No data available |
| Viscosity, dynamic | : No data available |
| Explosion limits | : Not applicable |
| Explosive properties | : No data available |
| Oxidizing properties | : No data available |

9.2. Other information

No additional information available

SECTION 10: Stability and reactivity

10.1. Reactivity

The product is non-reactive under normal conditions of use, storage and transport.

10.2. Chemical stability

Stable under normal conditions.

10.3. Possibility of hazardous reactions

No dangerous reactions known under normal conditions of use.

10.4. Conditions to avoid

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

10.5. Incompatible materials

No additional information available

10.6. Hazardous decomposition products

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 (oral) | : Not classified |
| Acute toxicity (dermal) | : Not classified |
| Acute toxicity (inhalation) | : Not classified |

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| Poly(ethylene oxide) [MW 200,000] | |
|--|------------------|
| LD50 oral rat | > ≥ 4 µg/kg g/Kg |

| Ammonia (7664-41-7) | |
|-----------------------------|-------------|
| LD50 oral rat | 350 mg/kg |
| LC50 Inhalation - Rat [ppm] | 2000 ppm/4h |

| Ethylene oxide (75-21-8) | |
|---------------------------------|------------|
| LD50 oral rat | 72 mg/kg |
| LC50 Inhalation - Rat [ppm] | 800 ppm/4h |

| Ethylamine (75-04-7) | |
|-----------------------------|-------------|
| LD50 oral rat | 400 mg/kg |
| LD50 dermal rabbit | 390 mg/kg |
| LC50 Inhalation - Rat [ppm] | 5540 ppm/1h |

| Polyethylene glycol (25322-68-3) | |
|---|-----------|
| LD50 oral rat | 22 g/kg |
| LD50 dermal rabbit | > 20 g/kg |

| | |
|-----------------------------------|----------------------------------|
| Skin corrosion/irritation | : Not classified |
| Serious eye damage/irritation | : Causes serious eye irritation. |
| Respiratory or skin sensitization | : Not classified |
| Germ cell mutagenicity | : Not classified |
| Carcinogenicity | : Not classified |

| Ethylene oxide (75-21-8) | |
|--|----------------------------|
| IARC group | 1 - Carcinogenic to humans |
| National Toxicity Program (NTP) Status | Known Human Carcinogens |
| In OSHA Hazard Communication Carcinogen list | Yes |
| In OSHA Specifically Regulated Carcinogen list | Yes |

Reproductive toxicity : Not classified

STOT-single exposure : Not classified

| Ethylene oxide (75-21-8) | |
|---------------------------------|-----------------------------------|
| STOT-single exposure | May cause respiratory irritation. |

| Ethylamine (75-04-7) | |
|-----------------------------|-----------------------------------|
| STOT-single exposure | May cause respiratory irritation. |

| Polyethylene glycol (25322-68-3) | |
|---|-----------------------------------|
| STOT-single exposure | May cause respiratory irritation. |

STOT-repeated exposure : Not classified

| | |
|------------------------------------|---------------------|
| Aspiration hazard | : Not classified |
| Viscosity, kinematic | : No data available |
| Symptoms/effects after eye contact | : Eye irritation. |

SECTION 12: Ecological information

12.1. Toxicity

Ecology - general : The product is not considered harmful to aquatic organisms or to cause long-term adverse effects in the environment.

| Ammonia (7664-41-7) | |
|----------------------------|--|
| LC50 fish 1 | 0.44 mg/l (Exposure time: 96 h - Species: Cyprinus carpio) |
| EC50 Daphnia 1 | 25.4 mg/l (Exposure time: 48 h - Species: Daphnia magna) |
| LC50 fish 2 | 0.26 – 4.6 mg/l (Exposure time: 96 h - Species: Lepomis macrochirus) |

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| Ethylene oxide (75-21-8) | |
|---------------------------------|---|
| LC50 fish 1 | 73 – 96 mg/l (Exposure time: 96 h - Species: Pimephales promelas) |
| EC50 Daphnia 1 | 137 – 300 mg/l (Exposure time: 48 h - Species: Daphnia magna) |
| Ethylamine (75-04-7) | |
| LC50 fish 1 | ≈ 46 mg/l Test organisms (species): Leuciscus idus |
| LC50 fish 2 | > 500 mg/l Test organisms (species): Leuciscus idus |
| LOEC (chronic) | 6.1 mg/l Test organisms (species): Ceriodaphnia dubia Duration: '7 d' |
| NOEC (chronic) | 3.2 mg/l Test organisms (species): Ceriodaphnia dubia Duration: '7 d' |

12.2. Persistence and degradability

No additional information available

12.3. Bioaccumulative potential

| Ammonia (7664-41-7) | |
|---|------------------|
| Partition coefficient n-octanol/water (Log Pow) | -1.14 (at 25 °C) |
| Ethylene oxide (75-21-8) | |
| Partition coefficient n-octanol/water (Log Pow) | -0.3 (at 25 °C) |
| Ethylamine (75-04-7) | |
| Partition coefficient n-octanol/water (Log Pow) | -0.27 |

12.4. Mobility in soil

No additional information available

12.5. Other adverse effects

No additional information available

SECTION 13: Disposal considerations

13.1. Disposal methods

Waste treatment methods : Dispose of contents/container in accordance with licensed collector's sorting instructions.

SECTION 14: Transport information

Department of Transportation (DOT)

In accordance with DOT

Not applicable

Transportation of Dangerous Goods

Not applicable

Transport by sea

Not applicable

Air transport

Not applicable

SECTION 15: Regulatory information

15.1. US Federal regulations

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| Ammonia (7664-41-7) | |
|--|---|
| Listed on the United States TSCA (Toxic Substances Control Act) inventory Subject to reporting requirements of United States SARA Section 313 | |
| CERCLA RQ | 100 lb |
| Section 302 EPCRA Reportable Quantity (RQ) | 100 lb |
| SARA Section 302 Threshold Planning Quantity (TPQ) | 500 lb |
| Ethylene oxide (75-21-8) | |
| Listed on the United States TSCA (Toxic Substances Control Act) inventory Subject to reporting requirements of United States SARA Section 313 Listed on EPA Hazardous Air Pollutant (HAPS) | |
| CERCLA RQ | 10 lb |
| RQ (Reportable quantity, section 304 of EPA's List of Lists) | 10 lb |
| Section 302 EPCRA Reportable Quantity (RQ) | 10 lb |
| SARA Section 302 Threshold Planning Quantity (TPQ) | 1000 lb |
| Ethylamine (75-04-7) | |
| Listed on the United States TSCA (Toxic Substances Control Act) inventory | |
| CERCLA RQ | 100 lb |
| Polyethylene glycol (25322-68-3) | |
| Listed on the United States TSCA (Toxic Substances Control Act) inventory | |
| EPA TSCA Regulatory Flag | XU - XU - indicates a substance exempt from reporting under the Chemical Data Reporting Rule, (40 CFR 711). |

15.2. International regulations

CANADA

| Ammonia (7664-41-7) | |
|---|-----|
| Listed on the Canadian DSL (Domestic Substances List) | |
| Toxic Substance (CEPA – Schedule I) | Yes |
| Ethylene oxide (75-21-8) | |
| Listed on the Canadian DSL (Domestic Substances List) | |
| Toxic Substance (CEPA – Schedule I) | Yes |
| Ethylamine (75-04-7) | |
| Listed on the Canadian DSL (Domestic Substances List) | |
| Polyethylene glycol (25322-68-3) | |
| Listed on the Canadian DSL (Domestic Substances List) | |

EU-Regulations

| Ammonia (7664-41-7) | |
|--|--|
| Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances) | |
| Ethylene oxide (75-21-8) | |
| Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances) | |
| Ethylamine (75-04-7) | |
| Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances) | |
| Polyethylene glycol (25322-68-3) | |
| Listed on the EU NLP (No Longer Polymers) inventory | |

National regulations

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Ammonia (7664-41-7)

Listed introduction on Australian Industrial Chemicals Introduction Scheme (AICIS Inventory)
 Listed on IECSC (Inventory of Existing Chemical Substances Produced or Imported in China)
 Listed on the Japanese ENCS (Existing & New Chemical Substances) inventory
 Listed on the Japanese ISHL (Industrial Safety and Health Law)
 Listed on KECL/KECI (Korean Existing Chemicals Inventory)
 Listed on NZIoC (New Zealand Inventory of Chemicals)
 Listed on PICCS (Philippines Inventory of Chemicals and Chemical Substances)
 Japanese Poisonous and Deleterious Substances Control Law
 Listed on INSQ (Mexican National Inventory of Chemical Substances)
 Listed on CICR (Turkish Inventory and Control of Chemicals)
 Listed on the TCSI (Taiwan Chemical Substance Inventory)

Ethylene oxide (75-21-8)

Listed on IARC (International Agency for Research on Cancer)
 Listed introduction on Australian Industrial Chemicals Introduction Scheme (AICIS Inventory)
 Listed on IECSC (Inventory of Existing Chemical Substances Produced or Imported in China)
 Listed on the Japanese ENCS (Existing & New Chemical Substances) inventory
 Listed on the Japanese ISHL (Industrial Safety and Health Law)
 Listed on KECL/KECI (Korean Existing Chemicals Inventory)
 Listed on NZIoC (New Zealand Inventory of Chemicals)
 Listed on PICCS (Philippines Inventory of Chemicals and Chemical Substances)
 Japanese Poisonous and Deleterious Substances Control Law
 Japanese Pollutant Release and Transfer Register Law (PRTR Law)
 Listed as carcinogen on NTP (National Toxicology Program)
 Listed on INSQ (Mexican National Inventory of Chemical Substances)
 Listed on CICR (Turkish Inventory and Control of Chemicals)
 Listed on the TCSI (Taiwan Chemical Substance Inventory)

Ethylamine (75-04-7)

Listed introduction on Australian Industrial Chemicals Introduction Scheme (AICIS Inventory)
 Listed on IECSC (Inventory of Existing Chemical Substances Produced or Imported in China)
 Listed on the Japanese ENCS (Existing & New Chemical Substances) inventory
 Listed on the Japanese ISHL (Industrial Safety and Health Law)
 Listed on KECL/KECI (Korean Existing Chemicals Inventory)
 Listed on NZIoC (New Zealand Inventory of Chemicals)
 Listed on PICCS (Philippines Inventory of Chemicals and Chemical Substances)
 Listed on INSQ (Mexican National Inventory of Chemical Substances)
 Listed on the TCSI (Taiwan Chemical Substance Inventory)

Polyethylene glycol (25322-68-3)

Listed introduction on Australian Industrial Chemicals Introduction Scheme (AICIS Inventory)
 Listed on IECSC (Inventory of Existing Chemical Substances Produced or Imported in China)
 Listed on the Japanese ENCS (Existing & New Chemical Substances) inventory
 Listed on the Japanese ISHL (Industrial Safety and Health Law)
 Listed on KECL/KECI (Korean Existing Chemicals Inventory)
 Listed on NZIoC (New Zealand Inventory of Chemicals)
 Listed on PICCS (Philippines Inventory of Chemicals and Chemical Substances)
 Listed on CICR (Turkish Inventory and Control of Chemicals)
 Listed on the TCSI (Taiwan Chemical Substance Inventory)

15.3. US State regulations

Ethylene oxide (75-21-8)

| U.S. - California - Proposition 65 - Carcinogens List | U.S. - California - Proposition 65 - Developmental Toxicity | U.S. - California - Proposition 65 - Reproductive Toxicity - Female | U.S. - California - Proposition 65 - Reproductive Toxicity - Male | No significant risk level (NSRL) | Maximum allowable dose level (MADL) |
|---|---|---|---|----------------------------------|-------------------------------------|
| Yes | Yes | Yes | Yes | 2 µg/day | 20 µg/day |

| Component | State or local regulations |
|--------------------|--|
| Ammonia(7664-41-7) | U.S. - Massachusetts - Right To Know List; U.S. - New Jersey - Right to Know Hazardous Substance List; U.S. - Pennsylvania - RTK (Right to Know) - Environmental Hazard List; U.S. - Pennsylvania - RTK (Right to Know) List |

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| Component | State or local regulations |
|-------------------------|--|
| Ethylene oxide(75-21-8) | U.S. - Massachusetts - Right To Know List; U.S. - New Jersey - Right to Know Hazardous Substance List; U.S. - Pennsylvania - RTK (Right to Know) - Environmental Hazard List; U.S. - Pennsylvania - RTK (Right to Know) - Special Hazardous Substances; U.S. - Pennsylvania - RTK (Right to Know) List |
| Ethylamine(75-04-7) | U.S. - Massachusetts - Right To Know List; U.S. - New Jersey - Right to Know Hazardous Substance List; U.S. - Pennsylvania - RTK (Right to Know) - Environmental Hazard List; U.S. - Pennsylvania - RTK (Right to Know) List |

SECTION 16: Other information

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SDS US (GHS HazCom 2012)

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