

SECTION 1: Identification

1.1. Identification

Product form : Mixture
 Product name : 4300AM-A
 Product code : 4300AM-A
 Other means of identification : 4300AM-A/5, 4300AM-A/5SF

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

No additional information available

1.3. Details of the supplier of the safety data sheet

Protective Industrial Polymers
 7875 Bliss Parkway
 North Ridgeville, Ohio 44039 - USA-Ohio
 T 440-327-0015
www.protectpoly.com

1.4. Emergency telephone number

Emergency number : Chemtrec: 800-427-9300 (Outside USA) 703-527-3887

SECTION 2: Hazard(s) identification

2.1. Classification of the substance or mixture

GHS-US classification

Sensitisation — Skin, Category 1 H317

Full text of H statements : see section 16

2.2. Label elements

GHS-US labelling

Hazard pictograms (GHS-US) :



GHS07

Signal word (GHS-US) : Warning
 Hazard statements (GHS-US) : H317 - May cause an allergic skin reaction
 Precautionary statements (GHS-US) : P261 - Avoid breathing vapours
 P272 - Contaminated work clothing must not be allowed out of the workplace
 P280 - Wear protective clothing
 P302+P352 - If on skin: Wash with plenty of soap
 P321 - Specific treatment (see a doctor if symptoms do not go away, on this label)
 P333+P313 - If skin irritation or rash occurs: Get medical advice/attention
 P363 - Wash contaminated clothing before reuse
 P501 - Dispose of contents/container to in accordance with local regulations

2.3. Other hazards

No additional information available

2.4. Unknown acute toxicity (GHS US)

Not applicable

SECTION 3: Composition/information on ingredients

3.1. Substance

Not applicable

3.2. Mixture

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| Name | Product identifier | % | GHS-US classification |
|--|--------------------|----------|---|
| 2-Butenedioic acid (E)-, diethyl ester | (CAS No) 623-91-6 | 0 - 1 | Acute Tox. 4 (Oral), H302 |
| Bentonite | (CAS No) 1302-78-9 | 0 - 1 | Not classified |
| Pimelic Ketone | (CAS No) 108-94-1 | 0 - 0.1 | Flam. Liq. 3, H226 Acute Tox. 4 (Oral), H302 Acute Tox. 3 (Dermal), H311 Acute Tox. 4 (Inhalation:dust,mist), H332 |
| (1-Hexadecyl)trimethylammonium bromide | (CAS No) 57-09-0 | 0 - 0.1 | Acute Tox. 4 (Oral), H302 |
| 1-octene | (CAS No) 111-66-0 | 0 - 0.01 | Flam. Liq. 2, H225 |
| Silver | (CAS No) 7440-22-4 | 0 - 0.01 | Not classified |

Full text of 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. Take off contaminated clothing. If skin irritation or rash occurs: Get medical advice/attention.
- First-aid measures after eye contact : Rinse eyes with water as a precaution.
- First-aid measures after ingestion : Call a poison center or a doctor if you feel unwell.

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

- Symptoms/injuries after skin contact : May cause an allergic skin reaction.

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

Treat symptomatically.

SECTION 5: Firefighting measures

5.1. Extinguishing media

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

5.2. Special hazards arising from the substance or mixture

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

5.3. Advice for firefighters

- 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. Avoid breathing dust/fume/gas/mist/vapours/spray.

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 : Take up liquid spill into absorbent material.
- 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. Avoid contact with skin and eyes. Avoid breathing vapours. Wear personal protective equipment.

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Hygiene measures : Contaminated work clothing should not be allowed out of the workplace. Wash contaminated clothing before reuse. 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 in a well-ventilated place. Keep cool.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

| 2-Butenedioic acid (E)-, diethyl ester (623-91-6) | | |
|---|-------------------------------------|--|
| Not applicable | | |
| 1-octene (111-66-0) | | |
| Not applicable | | |
| Pimelic Ketone (108-94-1) | | |
| ACGIH | ACGIH TWA (ppm) | 20 ppm (Cyclohexanone; USA; Time-weighted average exposure limit 8 h; TLV - Adopted Value) |
| ACGIH | ACGIH STEL (ppm) | 50 ppm (Cyclohexanone; USA; Short time value; TLV - Adopted Value) |
| ACGIH | Remark (ACGIH) | Eye & URT irr |
| OSHA | OSHA PEL (TWA) (mg/m ³) | 200 mg/m ³ |
| OSHA | OSHA PEL (TWA) (ppm) | 50 ppm |
| Bentonite (1302-78-9) | | |
| Not applicable | | |
| (1-Hexadecyl)trimethylammonium bromide (57-09-0) | | |
| Not applicable | | |
| Silver (7440-22-4) | | |
| ACGIH | ACGIH TWA (mg/m ³) | 0.1 mg/m ³ (Silver, metal, dust and fume; USA; Time-weighted average exposure limit 8 h; TLV - Adopted Value) |
| OSHA | OSHA PEL (TWA) (mg/m ³) | 0.01 mg/m ³ |

8.2. Exposure controls

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

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state : Liquid
Appearance : Yellow liquid. Colorless to pale yellow liquid.
Colour : Mixture contains one or more component(s) which have the following colour(s):
Colourless On exposure to air: light yellow Off-white to light grey White Metallic grey On exposure to air: turns grey-black
Odour : Ammonical
Odour threshold : No data available
pH : No data available
Melting point : Not applicable
Freezing point : No data available
Boiling point : No data available
Flash point : > 93.4 °C

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| | |
|--|---|
| Relative evaporation rate (butylacetate=1) | : No data available |
| Flammability (solid, gas) | : No data available |
| Explosive limits | : No data available |
| Explosive properties | : No data available |
| Oxidising properties | : No data available |
| Vapour pressure | : No data available |
| Relative density | : No data available |
| Relative vapour density at 20 °C | : No data available |
| Solubility | : Water: Solubility in water of component(s) of the mixture : • 1-octene: 0.0004 g/100ml • Pimelic Ketone: 8.6 g/100ml (20 °C, moderately soluble) • Bentonite: insoluble • (1-Hexadecyl)trimethylammonium bromide: soluble • Silver: < 0.1 mg/l |
| Log Pow | : No data available |
| Auto-ignition temperature | : No data available |
| Decomposition temperature | : No data available |
| Viscosity | : No data available |
| Viscosity, kinematic | : No data available |
| Viscosity, dynamic | : 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 : Not classified

| 2-Butenedioic acid (E)-, diethyl ester (623-91-6) | |
|--|---|
| LD50 oral rat | 1780 mg/kg (Rat) |
| ATE US (oral) | 1780.000 mg/kg bodyweight |
| 1-octene (111-66-0) | |
| LD50 oral rat | > 5000 mg/kg (Rat) |
| LD50 dermal rabbit | > 2000 mg/kg (Rabbit) |
| LC50 inhalation rat (mg/l) | 37 mg/l/4h (Rat) |
| LC50 inhalation rat (ppm) | 8050 ppm/4h (Rat) |
| ATE US (gases) | 8050.000 ppmv/4h |
| ATE US (vapours) | 37.000 mg/l/4h |
| ATE US (dust,mist) | 37.000 mg/l/4h |
| Pimelic Ketone (108-94-1) | |
| LD50 oral rat | 1535 mg/kg (Rat; BASF test; Experimental value; 2650 mg/kg bodyweight; Rat) |
| ATE US (oral) | 1535.000 mg/kg bodyweight |
| ATE US (dermal) | 948.000 mg/kg bodyweight |

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| Pimelic Ketone (108-94-1) | |
|----------------------------------|------------------|
| ATE US (gases) | 2639.000 ppmv/4h |
| ATE US (vapours) | 11.000 mg/l/4h |
| ATE US (dust,mist) | 1.500 mg/l/4h |

| (1-Hexadecyl)trimethylammonium bromide (57-09-0) | |
|---|--------------------------|
| LD50 oral rat | 410 mg/kg (Rat) |
| ATE US (oral) | 410.000 mg/kg bodyweight |

| Silver (7440-22-4) | |
|---------------------------|--|
| LD50 oral rat | > 10000 mg/kg (Rat; OECD 401: Acute Oral Toxicity; Experimental value; > 5000 mg/kg bodyweight; Rat) |
| LD50 dermal rat | > 2000 mg/kg (Rat; Literature study) |

Skin corrosion/irritation : Not classified
Serious eye damage/irritation : Not classified
Respiratory or skin sensitisation : May cause an allergic skin reaction.
Germ cell mutagenicity : Not classified
Carcinogenicity : Not classified

| Pimelic Ketone (108-94-1) | |
|----------------------------------|----------------------|
| IARC group | 3 - Not classifiable |

Reproductive toxicity : Not classified
Specific target organ toxicity (single exposure) : Not classified

Specific target organ toxicity (repeated exposure) : Not classified

Aspiration hazard : Not classified
Symptoms/injuries after skin contact : May cause an allergic skin reaction.

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.

| 1-octene (111-66-0) | |
|----------------------------|----------------------------|
| LC50 fish 1 | 3.2 - 10 mg/l (LC50; 96 h) |
| EC50 Daphnia 1 | 3.2 - 10 mg/l (EC50; 48 h) |

| Pimelic Ketone (108-94-1) | |
|----------------------------------|--|
| LC50 fish 1 | 527 - 732 mg/l (LC50; US EPA; 96 h; Pimephales promelas; Flow-through system; Fresh water; Experimental value) |

| (1-Hexadecyl)trimethylammonium bromide (57-09-0) | |
|---|------------------------|
| LC50 fish 1 | 1 mg/l (LC50; 24 h) |
| Threshold limit algae 2 | 0.09 mg/l (EC50; 96 h) |

| Silver (7440-22-4) | |
|---------------------------|---|
| LC50 fish 2 | 1.2 µg/l (LC50; 96 h; Pimephales promelas; Semi-static system; Fresh water) |
| EC50 Daphnia 2 | 0.22 µg/l (LC50; 48 h; Daphnia magna; Semi-static system; Fresh water) |
| Threshold limit algae 1 | 4.61 µg/l (IC50; US EPA; 96 h; Pseudokirchneriella subcapitata; Static system; Fresh water; Experimental value) |

12.2. Persistence and degradability

| 2-Butenedioic acid (E)-, diethyl ester (623-91-6) | |
|--|--|
| Persistence and degradability | Biodegradability in soil: no data available. |

| 1-octene (111-66-0) | |
|-------------------------------|---------------------------------|
| Persistence and degradability | Readily biodegradable in water. |

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| Pimelic Ketone (108-94-1) | |
|---|--|
| Persistence and degradability | Readily biodegradable in water. Biodegradable in the soil. Highly mobile in soil. |
| Biochemical oxygen demand (BOD) | 1.232 g O ₂ /g substance |
| Chemical oxygen demand (COD) | 2.605 g O ₂ /g substance |
| ThOD | 2.605 g O ₂ /g substance |
| BOD (% of ThOD) | 0.32 - 0.47 (Literature study) |
| Bentonite (1302-78-9) | |
| Persistence and degradability | Biodegradability: not applicable. |
| Biochemical oxygen demand (BOD) | Not applicable |
| Chemical oxygen demand (COD) | Not applicable |
| ThOD | Not applicable |
| (1-Hexadecyl)trimethylammonium bromide (57-09-0) | |
| Persistence and degradability | Readily biodegradable in water. |
| Silver (7440-22-4) | |
| Persistence and degradability | Biodegradability: not applicable. Biodegradability in soil: not applicable. Adsorbs into the soil. |
| ThOD | Not applicable (inorganic) |

12.3. Bioaccumulative potential

| 2-Butenedioic acid (E)-, diethyl ester (623-91-6) | |
|--|---|
| Bioaccumulative potential | No bioaccumulation data available. |
| 1-octene (111-66-0) | |
| Log Pow | 4.57 |
| Bioaccumulative potential | Bioaccumable. |
| Pimelic Ketone (108-94-1) | |
| BCF other aquatic organisms 1 | 2.4 (BCF) |
| Log Pow | 0.86 (Experimental value; OECD 107: Partition Coefficient (n-octanol/water): Shake Flask Method; 25 °C) |
| Bioaccumulative potential | Low potential for bioaccumulation (Log Kow < 4). |
| Bentonite (1302-78-9) | |
| Bioaccumulative potential | No bioaccumulation data available. |
| (1-Hexadecyl)trimethylammonium bromide (57-09-0) | |
| Log Pow | 3.18 |
| Silver (7440-22-4) | |
| Bioaccumulative potential | Low potential for bioaccumulation (BCF < 500). |

12.4. Mobility in soil

| 1-octene (111-66-0) | |
|----------------------------------|---|
| Surface tension | 0.022 N/m (20 °C) |
| Pimelic Ketone (108-94-1) | |
| Surface tension | 0.034 N/m (20 °C) |
| Log Koc | log Koc, SRC PCKOCWIN v1.66; 1.18; Calculated value |

12.5. Other adverse effects

Effect on the global warming : No known ecological damage caused by this product.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Waste treatment methods : Contain and dispose of waste according to local regulations.

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SECTION 14: Transport information

Department of Transportation (DOT)

In accordance with DOT
Not regulated for transport

TDG

No additional information available

Transport by sea

No additional information available

Air transport

No additional information available

SECTION 15: Regulatory information

15.1. US Federal regulations

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Listed on the United States TSCA (Toxic Substances Control Act) inventory

2-Butenedioic acid (E)-, diethyl ester (623-91-6)

Listed on the United States TSCA (Toxic Substances Control Act) inventory

1-octene (111-66-0)

Listed on the United States TSCA (Toxic Substances Control Act) inventory

Pimelic Ketone (108-94-1)

Listed on the United States TSCA (Toxic Substances Control Act) inventory
Not subject to reporting requirements of the United States SARA Section 313

| | |
|-----------|---------|
| CERCLA RQ | 5000 lb |
|-----------|---------|

Bentonite (1302-78-9)

Listed on the United States TSCA (Toxic Substances Control Act) inventory

(1-Hexadecyl)trimethylammonium bromide (57-09-0)

Listed on the United States TSCA (Toxic Substances Control Act) inventory

Silver (7440-22-4)

Listed on the United States TSCA (Toxic Substances Control Act) inventory
Subject to reporting requirements of United States SARA Section 313
Not subject to reporting requirements of the United States SARA Section 313

| | |
|-----------|------|
| CERCLA RQ | 1 lb |
|-----------|------|

15.2. International regulations

CANADA

No additional information available

EU-Regulations

No additional information available

National regulations

No additional information available

15.3. US State regulations

Pimelic Ketone (108-94-1)

U.S. - New Jersey - Right to Know Hazardous Substance List
U.S. - Pennsylvania - RTK (Right to Know) List

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Silver (7440-22-4)

U.S. - New Jersey - Right to Know Hazardous Substance List
U.S. - Pennsylvania - RTK (Right to Know) List

SECTION 16: Other information

Other information

: Disclaimer: This SDS to the best of our knowledge conforms to the requirements of OSHA 20 CFR 1910.1200 and summarizes the health and safety hazard information and general guidance on how to safely handle the material at the date of issue. Each user must review the SDS in the context of how the product will be handled and used in the workplace.

Full text of H-statements:

| | |
|------|-------------------------------------|
| H225 | Highly flammable liquid and vapour |
| H226 | Flammable liquid and vapour |
| H302 | Harmful if swallowed |
| H311 | Toxic in contact with skin |
| H317 | May cause an allergic skin reaction |
| H332 | Harmful if inhaled |

NFPA health hazard

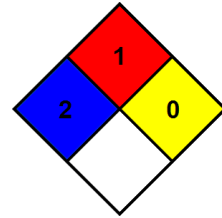
: 2 - Intense or continued exposure could cause temporary incapacitation or possible residual injury unless prompt medical attention is given.

NFPA fire hazard

: 1 - Must be preheated before ignition can occur.

NFPA reactivity

: 0 - Normally stable, even under fire exposure conditions, and are not reactive with water.



HMIS III Rating

Health

: 2 Moderate Hazard - Temporary or minor injury may occur

Flammability

: 1 Slight Hazard - Materials that must be preheated before ignition will occur. Includes liquids, solids and semi solids having a flash point above 200 F. (Class IIIB)

Physical

: 0 Minimal Hazard - Materials that are normally stable, even under fire conditions, and will NOT react with water, polymerize, decompose, condense, or self-react. Non-Explosives.

SDS US (GHS HazCom 2012)

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product