



Safety Data Sheet

HiTEC® 307 Performance Additive

SDS no. H307

Section 1. Identification

Product identifier : HiTEC® 307 Performance Additive
Product use : Petrochemical industry: Industrial Gear Additive

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In case of emergency - Chemical

+1-703-527-3887 (International)
+65-3158-1349 (Asia Pacific)
+61-290372994 (Australia)
4001-204937 (China)
+81-345209637 (Japan)
00-308-13-2549 (South Korea)
+1-703-741-5979 (Spanish language)
+44-870-8200418 (UK)
1-800-424-9300 (US & Canada)

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Section 2. Hazards identification

Classification of the substance or mixture : SKIN CORROSION/IRRITATION - Category 2
SERIOUS EYE DAMAGE/EYE IRRITATION - Category 2A
SHORT-TERM (ACUTE) AQUATIC HAZARD - Category 2
LONG-TERM (CHRONIC) AQUATIC HAZARD - Category 2

GHS label elements

Hazard pictograms



Signal word

: Warning

Hazard statements

: Causes skin irritation.
Causes serious eye irritation.
Toxic to aquatic life with long lasting effects.

Precautionary statements

Prevention

: Wear protective gloves. Wear eye or face protection. Avoid release to the environment. Wash thoroughly after handling.

Response

: Collect spillage. Take off contaminated clothing and wash it before reuse. IF ON SKIN: Wash with plenty of water. If skin irritation occurs: Get medical advice or attention. 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 in a well-ventilated place.

Disposal

: Dispose of contents and container in accordance with all local, regional, national and international regulations.

Other hazards which do not result in classification : None known.

Please note some GHS hazard classifications listed above may not be applicable in your country or region and are shown for informational purposes only.

For other GHS hazard classifications not listed above, the classification is not applicable in your region.

Section 3. Composition/information on ingredients

Substance/mixture : Mixture

| Ingredient name | CAS number | % | GHS Classification | Type |
|--|------------|-----------|---|------|
| 1-Propene, 2-methyl-, sulfurized | 68511-50-2 | ≥35 - ≤45 | FLAMMABLE LIQUIDS - Category 4 | [1] |
| Distillates (petroleum), hydrotreated heavy paraffinic | 64742-54-7 | ≥15 - ≤25 | Not classified. | [2] |
| Amines, C12-14-tert-alkyl | 68955-53-3 | ≥3 - ≤5 | FLAMMABLE LIQUIDS - Category 4 ACUTE TOXICITY (oral) - Category 4 ACUTE TOXICITY (dermal) - Category 3 ACUTE TOXICITY (inhalation) - | [1] |

Section 3. Composition/information on ingredients

| | | | | |
|---|-------------|---------------------|--|-----|
| Alkyl phosphonate | Proprietary | $\geq 1 - \leq 3$ | <p>Category 2 SKIN CORROSION/IRRITATION - Category 1B SERIOUS EYE DAMAGE/EYE IRRITATION - Category 1 SKIN SENSITISATION - Category 1A SHORT-TERM (ACUTE) AQUATIC HAZARD - Category 1 (M=1) LONG-TERM (CHRONIC) AQUATIC HAZARD - Category 1 (M=1)</p> <p>ACUTE TOXICITY (oral) - Category 5 ACUTE TOXICITY (dermal) - Category 5</p> <p>SKIN CORROSION/IRRITATION - Category 2 SERIOUS EYE DAMAGE/EYE IRRITATION - Category 2A SHORT-TERM (ACUTE) AQUATIC HAZARD - Category 3 LONG-TERM (CHRONIC) AQUATIC HAZARD - Category 3</p> | [1] |
| 2,5-bis(tert-nonyldithio)-1,3,4-thiadiazole | 89347-09-1 | $\geq 1 - \leq 3$ | <p>SKIN CORROSION/IRRITATION - Category 3 SHORT-TERM (ACUTE) AQUATIC HAZARD - Category 3 LONG-TERM (CHRONIC) AQUATIC HAZARD - Category 3</p> | [1] |
| bis(2-ethylhexyl) hydrogen phosphate | 298-07-7 | $\geq 1 - < 2.7$ | <p>FLAMMABLE LIQUIDS - Category 4 ACUTE TOXICITY (oral) - Category 5 SKIN CORROSION/IRRITATION - Category 1B SERIOUS EYE DAMAGE/EYE IRRITATION - Category 1 SHORT-TERM (ACUTE) AQUATIC HAZARD - Category 3</p> | [1] |
| Alcohols, C12-16, ethoxylated | 68551-12-2 | $\geq 1 - \leq 2.3$ | <p>SERIOUS EYE DAMAGE/EYE IRRITATION - Category 1 SHORT-TERM (ACUTE) AQUATIC HAZARD - Category 1 (M=1) LONG-TERM (CHRONIC) AQUATIC HAZARD - Category 3</p> | [1] |
| 2-ethylhexyl dihydrogen phosphate | 1070-03-7 | $\geq 1 - < 2.2$ | <p>FLAMMABLE LIQUIDS - Category 4 ACUTE TOXICITY (oral) - Category 5 SKIN CORROSION/IRRITATION - Category 1B SERIOUS EYE DAMAGE/EYE IRRITATION - Category 1 SHORT-TERM (ACUTE) AQUATIC HAZARD - Category 3</p> | [1] |
| (Z)-octadec-9-enylamine | 112-90-3 | $\geq 0.5 - < 1$ | <p>ACUTE TOXICITY (oral) - Category 4 SKIN CORROSION/IRRITATION - Category 1B SERIOUS EYE DAMAGE/EYE</p> | [1] |

Section 3. Composition/information on ingredients

| | | | | |
|------------|----------|-------------|---|-----|
| octylamine | 111-86-4 | ≥0.3 - ≤0.5 | <p>IRRITATION - Category 1 SPECIFIC TARGET ORGAN TOXICITY - SINGLE EXPOSURE (Respiratory tract irritation) - Category 3 SPECIFIC TARGET ORGAN TOXICITY - REPEATED EXPOSURE (gastrointestinal tract, immune system, liver) - Category 2 ASPIRATION HAZARD - Category 1 SHORT-TERM (ACUTE) AQUATIC HAZARD - Category 1 (M=10) LONG-TERM (CHRONIC) AQUATIC HAZARD - Category 1 (M=10)</p> <p>FLAMMABLE LIQUIDS - Category 3 ACUTE TOXICITY (oral) - Category 3 ACUTE TOXICITY (dermal) - Category 3 ACUTE TOXICITY (inhalation) - Category 4 SKIN CORROSION/IRRITATION - Category 1A SERIOUS EYE DAMAGE/EYE IRRITATION - Category 1 SPECIFIC TARGET ORGAN TOXICITY - SINGLE EXPOSURE (Respiratory tract irritation) - Category 3 SHORT-TERM (ACUTE) AQUATIC HAZARD - Category 1 (M=1) LONG-TERM (CHRONIC) AQUATIC HAZARD - Category 2</p> | [1] |
|------------|----------|-------------|---|-----|

There are no ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

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

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

Please note some GHS hazard classifications listed above may not be applicable in your country or region and are shown for informational purposes only.

Type

[1] Substance classified with a physical, health or environmental hazard

[2] Substance with a workplace exposure limit

Section 4. First aid measures

Description of necessary first aid measures

Eye contact

: Immediately flush eyes with plenty of water for at least 15 minutes, 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.

Section 4. First aid measures

- Inhalation** : If inhaled, remove to fresh air. 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 adverse health effects persist or are severe. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband. In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours. If not breathing, give artificial respiration. If breathing is difficult, administer oxygen.
- Skin contact** : Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention. Wash clothing before reuse. Clean shoes thoroughly before reuse. Continue to rinse for at least 15 minutes.
- Ingestion** : Wash out mouth with water. Remove dentures if any. Remove victim to fresh air and keep at rest in a position comfortable for breathing. 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.

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** : Causes skin irritation.
- Ingestion** : No known significant effects or critical hazards.

Over-exposure signs/symptoms

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

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

- Notes to physician** : In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.
- Specific treatments** : No specific treatment.
- 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. Firefighting measures

Extinguishing media

Suitable extinguishing media : In case of fire, use water spray (fog), foam, dry chemical or CO₂.

Unsuitable extinguishing media : Do not use water jet.

Specific hazards arising from the chemical : In a fire or if heated, a pressure increase will occur and the container may burst. This material is toxic to aquatic life with long lasting effects. Fire water contaminated with this material must be contained and prevented from being discharged to any waterway, sewer or drain.

Hazardous thermal decomposition products : Decomposition products may include the following materials:
carbon dioxide
carbon monoxide
nitrogen oxides
sulfur oxides
phosphorus oxides
metal oxide/oxides

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.

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.

HazChem Code (Australia) : 3Z

Section 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

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

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

Environmental precautions : Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air). Water polluting material. May be harmful to the environment if released in large quantities. Collect spillage.

Methods and material for containment and cleaning up

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

Section 6. Accidental release measures

- Large spill** : Stop leak if without risk. Move containers from spill area. Approach the release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. 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 (see Section 13). Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spill product. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

Section 7. Handling and storage

Precautions for safe handling

- Protective measures** : Put on appropriate personal protective equipment (see Section 8). Do not ingest. Avoid contact with eyes, skin and clothing. Avoid breathing vapour or mist. Avoid release to the environment. 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** : 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. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabelled containers. Use appropriate containment to avoid environmental contamination.

Section 8. Exposure controls/personal protection

Control parameters

Occupational exposure limits

| Ingredient name | Exposure limits |
|--|--|
| Distillates (petroleum), hydrotreated heavy paraffinic | Safe Work Australia (Australia, 12/2019). [Oil mist, refined mineral] TWA: 5 mg/m ³ 8 hours. Form: Mist |

- Appropriate engineering controls** : Good general ventilation should be sufficient to control worker exposure to airborne contaminants.

- 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

Section 8. Exposure controls/personal protection

- Hygiene measures** : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.
- Eye/face protection** : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: safety glasses with side-shields.
- Skin protection**
- Hand protection** : Hand Protection: Wear chemical resistant gloves. Nitrile gloves of minimum thickness 0.4 mm have an expected breakthrough time of 480 minutes or less when in frequent contact with the product. Due to variable exposure conditions the user must consider that the practical use of a chemical-protective glove in practice may be much shorter than the permeation time above. Manufacturer's directions for use, especially about the minimum thickness and the minimum breakthrough time, must be observed. This information does not replace suitability tests by the end user since glove protection varies depending on the conditions under which the product is used.
- 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

- Physical state** : Liquid. [Clear.]
- Colour** : Amber. [Dark]
- Odour** : Pungent.
- Odour threshold** : Not available.
- pH** : Not available.
- Melting point** : Not available.
- Boiling point** : Not available.
- Flash point** : Closed cup: 94°C (201.2°F) [Pensky-Martens. Minimum]
- Evaporation rate** : Not available.
- Flammability (solid, gas)** : Not available.
- Lower and upper explosive (flammable) limits** : Not available.
- Vapour pressure** : Not available.
- Relative vapour density** : Not available.
- Vapour density** : Not available.

Section 9. Physical and chemical properties

Density : 0.998 g/cm³ [60.1°F (15.6°C)]

Relative density : 1

Solubility(ies) :

| Media | Result |
|------------|-------------|
| cold water | Not soluble |

Partition coefficient: n-octanol/water : Not applicable.

Auto-ignition temperature : Not available.

Decomposition temperature : Not available.

Viscosity : Kinematic (40°C): 110 mm²/s (110 cSt) Minimum
11 cSt @ 100°C

Explosive properties : Not available.

Oxidising properties : Not available.

Particle characteristics

Median particle size : Not applicable.

Section 10. Stability and reactivity

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

Conditions to avoid : High temperatures, sparks, and open flames.

Incompatible materials : Strong oxidising and reducing agents.

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

Section 11. Toxicological information

| Product/ingredient name | Test | Result | Species | Dose | Exposure | Remarks |
|--|--|---------------------------------|---------|--------------|----------|--|
| 1-Propene, 2-methyl-, sulfurized | None available. | LC50 Inhalation Vapour | Rat | >2 mg/l | 6 hours | - |
| Distillates (petroleum), hydrotreated heavy paraffinic | None available. | LD50 Dermal | Rabbit | >7940 mg/kg | - | - |
| | None available. | LD50 Oral | Rat | 9800 mg/kg | - | - |
| | 403 Acute Inhalation Toxicity | LC50 Inhalation Dusts and mists | Rat | >5.53 mg/l | 4 hours | Based on data for a similar substance. |
| | 402 Acute Dermal Toxicity | LD50 Dermal | Rabbit | >5000 mg/kg | - | Based on data for a similar substance. |
| Amines, C12-14-tert-alkyl | 401 Acute Oral Toxicity | LD50 Oral | Rat | >5000 mg/kg | - | Based on data for a similar substance. |
| | 403 Acute Inhalation Toxicity | LC50 Inhalation Vapour | Rat | 1.19 mg/l | 4 hours | - |
| | 402 Acute Dermal Toxicity | LD50 Dermal | Rat | 251 mg/kg | - | - |
| Alkyl phosphonate | 401 Acute Oral Toxicity | LD50 Oral | Rat | 612 mg/kg | - | - |
| | 433 Acute Inhalation Toxicity | LC50 Inhalation Vapour | Rat | >22 mg/l | 1 hours | - |
| | 434 Acute Dermal Toxicity-Fixed Dose Procedure | LD50 Dermal | Rabbit | 5000 mg/kg | - | - |
| | 420 Acute Oral Toxicity - Fixed Dose Method | LD50 Oral | Rat | >3000 mg/kg | - | - |
| 2,5-bis(tert-nonyldithio)-1,3,4-thiadiazole | 403 Acute Inhalation Toxicity | LC50 Inhalation Vapour | Rat | >2.75 mg/l | 4 hours | Based on data for a similar substance. |
| | 402 Acute Dermal Toxicity | LD50 Dermal | Rabbit | >2000 mg/kg | - | Based on data for a similar substance. |
| | 401 Acute Oral Toxicity | LD50 Oral | Rat | >10000 mg/kg | - | Based on data for a similar substance. |
| bis(2-ethylhexyl) hydrogen phosphate | 402 Acute Dermal Toxicity | LD50 Dermal | Rabbit | >2000 mg/kg | - | - |
| | 423 Acute Oral toxicity - Acute Toxic Class Method | LD50 Oral | Rat | 2500 mg/kg | - | Based on data for a similar substance. |
| Alcohols, C12-16, ethoxylated | 403 Acute Inhalation Toxicity | LC50 Inhalation Vapour | Rat | >1.6 mg/l | 4 hours | Based on data for a similar substance. |
| | 402 Acute Dermal Toxicity | LD50 Dermal | Rabbit | >2000 mg/kg | - | Based on data for a similar substance. |
| | 401 Acute Oral Toxicity | LD50 Oral | Rat | >2000 mg/kg | - | - |
| 2-ethylhexyl dihydrogen phosphate | None available. | LD50 Dermal | Rabbit | >4640 mg/kg | - | - |
| | 423 Acute Oral | LD50 Oral | Rat | 2500 mg/kg | - | Based on data |

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| | toxicity - Acute Toxic Class Method | | | | | for a similar substance. |
|-------------------------|---|------------------------------------|--------|----------------------|---------|-----------------------------|
| (Z)-octadec-9-enylamine | 402 Acute Dermal Toxicity | LD50 Dermal | Rat | >2000 mg/kg | - | - |
| octylamine | 401 Acute Oral Toxicity | LD50 Oral | Rat | 1689 mg/kg | - | - |
| | 403 Acute Inhalation Toxicity | LC50 Inhalation Dusts and mists | Rat | 1.6 mg/l | 4 hours | - |
| | 402 Acute Dermal Toxicity | LD50 Dermal | Rabbit | 200 to 2000 mg/kg | - | - |
| | 401 Acute Oral Toxicity | LD50 Oral | Rat | <200 mg/kg | - | - |

Conclusion/Summary : Acute inhalation toxicity: Not classified. On basis of test data

Irritation/Corrosion

| Product/ingredient name | Test | Species | Result | Remarks |
|---|--|----------------------------|---|--|
| 1-Propene, 2-methyl-, sulfurized | None available. | Rabbit | Eyes - Not an Irritant | - |
| Distillates (petroleum), hydrotreated heavy paraffinic | None available. 405 Acute Eye Irritation/Corrosion | Rabbit Rabbit | Skin - Not an Irritant Eyes - Not an Irritant | - Based on data for a similar substance. |
| Amines, C12-14-tert-alkyl | 404 Acute Dermal Irritation/Corrosion | Rabbit | Skin - Not an Irritant | - Based on data for a similar substance. |
| Alkyl phosphonate | None available. 405 Acute Eye Irritation/Corrosion | Rabbit Rabbit Rabbit | Eyes - Visible necrosis Skin - Visible necrosis Eyes - Irritant | - - - |
| 2,5-bis(tert-nonyldithio) -1,3,4-thiadiazole | 404 Acute Dermal Irritation/Corrosion | Rabbit | Skin - Irritant | - |
| bis(2-ethylhexyl) hydrogen phosphate | 405 Acute Eye Irritation/Corrosion | Rabbit | Eyes - Not an Irritant | - Based on data for a similar substance. |
| | 404 Acute Dermal Irritation/Corrosion | Rabbit | Skin - Mild irritant | - Based on data for a similar substance. |
| Alcohols, C12-16, ethoxylated | None available. 405 Acute Eye Irritation/Corrosion | Rabbit Rabbit | Eyes - Visible necrosis Skin - Visible necrosis | - Based on data for a similar substance. |
| | 404 Acute Dermal Irritation/Corrosion | Rabbit | Eyes - Severe irritant | - |
| 2-ethylhexyl dihydrogen phosphate | 404 Acute Dermal Irritation/Corrosion | Rabbit | Skin - Not irritant | - |
| (Z)-octadec-9-enylamine | 404 Acute Dermal Irritation/Corrosion | Rabbit | Skin - Visible necrosis | - Based on data for a similar substance. |
| | 405 Acute Eye Irritation/Corrosion | Rabbit | Eyes - Severe irritant | - Based upon data for a similar product. |
| octylamine | 404 Acute Dermal Irritation/Corrosion | Rabbit | Skin - Visible necrosis | - |
| | 405 Acute Eye Irritation/Corrosion | Rabbit | Eyes - Visible necrosis | - |
| | 404 Acute Dermal Irritation/Corrosion | Rabbit | Skin - Visible necrosis | - |

Skin : Causes skin irritation. Based on test data for this or similar products.

Section 11. Toxicological information

Eyes : Causes serious eye irritation. Based on test data for this or similar products.

Respiratory : Based on available data, the classification criteria are not met.

Sensitisation

| Product/ingredient name | Test | Route of exposure | Species | Result | Remarks |
|--|------------------------|-------------------|------------|-----------------|--|
| 1-Propene, 2-methyl-, sulfurized | None available. | skin | Guinea pig | Not sensitizing | - |
| Distillates (petroleum), hydrotreated heavy paraffinic | 406 Skin Sensitization | skin | Guinea pig | Not sensitizing | Based on data for a similar substance. |
| Amines, C12-14-tert-alkyl | None available. | skin | Guinea pig | Sensitising | - |
| 2,5-bis(tert-nonyldithio) | 406 Skin Sensitization | skin | Guinea pig | Not sensitizing | Based on data for a similar substance. |
| -1,3,4-thiadiazole | 406 Skin Sensitization | skin | Guinea pig | Not sensitizing | - |
| Alcohols, C12-16, ethoxylated | 406 Skin Sensitization | skin | Guinea pig | Not sensitizing | - |
| (Z)-octadec-9-enylamine | 406 Skin Sensitization | skin | Guinea pig | Not sensitizing | Based upon data for a similar product. |

Conclusion/Summary

Skin : Not classified as a skin sensitizer. Based on test data for this or similar products.

Respiratory : Based on available data, the classification criteria are not met.

Mutagenicity

| Product/ingredient name | Test | Experiment | Result | Remarks |
|--|--|---|----------|--|
| 1-Propene, 2-methyl-, sulfurized | None available. | Experiment: In vitro Subject: Bacteria | Negative | - |
| | None available. | Experiment: In vitro Subject: Mammalian-Animal | Negative | - |
| Distillates (petroleum), hydrotreated heavy paraffinic | 471 Bacterial Reverse Mutation Test | Experiment: In vitro Subject: Bacteria | Negative | Based on data for a similar substance. |
| | 473 In vitro Mammalian Chromosomal Aberration Test | Experiment: In vitro Subject: Mammalian-Animal | Negative | Based on data for a similar substance. |
| | 476 In vitro Mammalian Cell Gene Mutation Test | Experiment: In vitro Subject: Mammalian-Animal | Negative | Based on data for a similar substance. |
| | 474 Mammalian Erythrocyte Micronucleus Test | Experiment: In vivo Subject: Mammalian-Animal | Negative | Based on data for a similar substance. |
| Amines, C12-14-tert-alkyl | 471 Bacterial Reverse Mutation Test | Experiment: In vitro Subject: Bacteria | Negative | - |
| | 476 In vitro Mammalian Cell Gene Mutation Test | Experiment: In vitro Subject: Mammalian-Animal | Negative | - |
| Alkyl phosphonate | 471 Bacterial Reverse Mutation Test | Experiment: In vitro Subject: Bacteria | Negative | - |
| | 473 In vitro Mammalian Chromosomal Aberration Test | Experiment: In vitro Subject: Mammalian-Animal | Negative | - |
| 2,5-bis(tert-nonyldithio) | 471 Bacterial Reverse Mutation Test | Experiment: In vitro Subject: Bacteria | Negative | Based on data for a similar substance. |
| -1,3,4-thiadiazole | 473 In vitro Mammalian Chromosomal Aberration Test | Experiment: In vitro Subject: Mammalian-Animal | Negative | Based on data for a similar substance. |
| bis(2-ethylhexyl) hydrogen phosphate | 471 Bacterial Reverse Mutation Test | Experiment: In vitro Subject: Bacteria | Negative | Based on data for a similar substance. |
| | 487 In vitro Micronucleus | Experiment: In vitro | Negative | - |

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| | | | | |
|-----------------------------------|--|---|----------|--|
| Alcohols, C12-16, ethoxylated | Test 473 In vitro Mammalian Chromosomal Aberration Test | Subject: Mammalian-Animal Experiment: In vitro Subject: Mammalian-Human | Negative | Based on data for a similar substance. |
| | 471 Bacterial Reverse Mutation Test | Experiment: In vitro Subject: Bacteria | Negative | - |
| 2-ethylhexyl dihydrogen phosphate | 473 In vitro Mammalian Chromosomal Aberration Test | Experiment: In vitro Subject: Mammalian-Animal | Negative | Based on data for a similar substance. |
| | 471 Bacterial Reverse Mutation Test | Experiment: In vitro Subject: Bacteria | Negative | Based on data for a similar substance. |
| | 476 In vitro Mammalian Cell Gene Mutation Test | Experiment: In vitro Subject: Mammalian-Animal | Negative | Based on data for a similar substance. |
| | 473 In vitro Mammalian Chromosomal Aberration Test | Experiment: In vitro Subject: Mammalian-Human | Negative | Based on data for a similar substance. |
| (Z)-octadec-9-enylamine | 471 Bacterial Reverse Mutation Test | Experiment: In vitro Subject: Bacteria | Negative | - |
| | 476 In vitro Mammalian Cell Gene Mutation Test | Experiment: In vitro Subject: Mammalian-Animal | Negative | - |
| octylamine | 471 Bacterial Reverse Mutation Test | Experiment: In vitro Subject: Bacteria | Negative | - |
| | 476 In vitro Mammalian Cell Gene Mutation Test | Experiment: In vitro Subject: Mammalian-Animal | Negative | - |

Conclusion/Summary : Based on available data, the classification criteria are not met.

Carcinogenicity

| Product/ingredient name | Test | Species | Exposure | Result | Remarks |
|--|-----------------------------|---------|----------|---------------------------------|--|
| Distillates (petroleum), hydrotreated heavy paraffinic | 451 Carcinogenicity Studies | Mouse | 78 weeks | Negative - Dermal - NOAEL | Based on data for a similar substance. |
| Alkyl phosphonate | None available. | Rat | 2 years | Negative - Oral - NOAEL | - |

Conclusion/Summary : Based on available data, the classification criteria are not met.

Reproductive toxicity

| Product/ingredient name | Test | Route of exposure | Species | Maternal toxicity | Fertility | Developmental toxin | Remarks |
|--|---|-------------------|---------|-------------------|-----------|---------------------|--|
| Distillates (petroleum), hydrotreated heavy paraffinic | 421 Reproduction/ Developmental Toxicity Screening Test | Oral | Rat | Negative | Negative | Negative | Based on data for a similar substance. |
| Amines, C12-14-tert-alkyl | 415 One-Generation Reproduction Toxicity Study | Oral | Rat | Positive | Negative | Negative | - |
| Alkyl phosphonate | 416 Two-Generation Reproduction Toxicity Study | Oral | Rat | Positive | Negative | Equivocal | Based on data for a similar substance. WOE does not support classification |
| 2,5-bis(tert-nonyldithio) | 421 Reproduction/ | Oral | Rat | Negative | Negative | Negative | Based on |

Section 11. Toxicological information

| | | | | | | | |
|--------------------------------------|--|--------|-----|----------|----------|----------|--|
| -1,3,4-thiadiazole | Developmental Toxicity Screening Test | | | | | | data for a similar substance. |
| bis(2-ethylhexyl) hydrogen phosphate | 422 Combined Repeated Dose Toxicity Study with the Reproduction/ Developmental Toxicity Screening Test | Oral | Rat | Positive | Negative | Negative | Based on data for a similar substance. |
| Alcohols, C12-16, ethoxylated | 416 Two-Generation Reproduction Toxicity Study | Dermal | Rat | Positive | Negative | Negative | Based on data for a similar substance. |
| 2-ethylhexyl dihydrogen phosphate | 422 Combined Repeated Dose Toxicity Study with the Reproduction/ Developmental Toxicity Screening Test | Oral | Rat | Negative | Negative | Negative | Based on data for a similar substance. |
| (Z)-octadec-9-enylamine | 421 Reproduction/ Developmental Toxicity Screening Test | Oral | Rat | Positive | Negative | Negative | Based on data for a similar substance. |
| octylamine | 422 Combined Repeated Dose Toxicity Study with the Reproduction/ Developmental Toxicity Screening Test | Oral | Rat | Negative | Negative | Negative | - |

Conclusion/Summary : Based on available data, the classification criteria are not met.

Teratogenicity

| Product/ingredient name | Test | Species | Result | Remarks |
|--|---|---------|-------------------|--|
| Distillates (petroleum), hydrotreated heavy paraffinic Amines, C12-14-tert-alkyl | 414 Prenatal Developmental Toxicity Study | Rat | Negative - Dermal | Based on data for a similar substance. |
| | 414 Prenatal Developmental Toxicity Study | Rat | Negative - Dermal | - |
| Alkyl phosphonate | None available. | Rat | Negative - Oral | Based on data for a similar substance. |
| bis(2-ethylhexyl) hydrogen phosphate | 414 Prenatal Developmental Toxicity Study | Rat | Negative - Oral | Based on data for a similar substance. |
| (Z)-octadec-9-enylamine | None available. | Rat | Negative - Oral | - |

Conclusion/Summary : Based on available data, the classification criteria are not met.

Specific target organ toxicity (single exposure)

| Name | Category | Route of exposure | Target organs |
|-------------------------|------------|-------------------|------------------------------|
| (Z)-octadec-9-enylamine | Category 3 | - | Respiratory tract irritation |
| octylamine | Category 3 | - | Respiratory tract irritation |

Section 11. Toxicological information

Specific target organ toxicity (repeated exposure)

| Name | Category | Route of exposure | Target organs |
|-------------------------|------------|-------------------|--|
| (Z)-octadec-9-enylamine | Category 2 | - | gastrointestinal tract, immune system, liver |

Aspiration hazard

| Name | Result |
|-------------------------|--------------------------------|
| (Z)-octadec-9-enylamine | ASPIRATION HAZARD - Category 1 |

Information on likely routes of exposure : Skin, Eyes, Ingestion, and Inhalation

Potential acute health effects

- Eye contact** : Causes serious eye irritation.
- Inhalation** : No known significant effects or critical hazards.
- Skin contact** : Causes skin irritation.
- 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** : Adverse symptoms may include the following:
irritation
redness
- Ingestion** : No specific data.

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

Short term exposure

- Potential immediate effects** : Inhalation of oil mist or vapours at elevated temperatures may cause respiratory irritation. Ingestion may cause gastrointestinal irritation and diarrhoea.
- Potential delayed effects** : Not available.

Long term exposure

- Potential immediate effects** : Repeated or prolonged contact with the mixture may cause removal of natural fat from the skin, resulting in non-allergic contact dermatitis and absorption through the skin.
- Potential delayed effects** : Not available.

Potential chronic health effects

Section 11. Toxicological information

| Product/ingredient name | Test | Species | Dose | Exposure | Result | Remarks |
|--|--|---------|----------------------|-----------|--|--|
| 1-Propene, 2-methyl-, sulfurized Distillates (petroleum), hydrotreated heavy paraffinic | None available. | Rat | 100 mg/kg | - | Sub-acute NOAEL Dermal | - |
| | 408 Repeated Dose 90-Day Oral Toxicity Study in Rodents | Rat | 125 mg/kg | - | Sub-chronic LOAEL Oral | Based on data for a similar substance. |
| | 410 Repeated Dose Dermal Toxicity: 21/28-day Study | Rabbit | 1000 mg/kg | - | Sub-acute NOAEL Dermal | Based on data for a similar substance. |
| | 411 Subchronic Dermal Toxicity: 90-day Study | Rat | 30 mg/kg | - | Sub-chronic NOAEL Dermal | Based on data for a similar substance. |
| | None available. | Rat | 0.15 mg/l | 13 weeks | Sub-chronic NOAEL Inhalation Dusts and mists | Based on data for a similar substance. |
| Amines, C12-14-tert-alkyl | None available. | Rat | 0.22 mg/l | 4 weeks | Sub-chronic NOAEL Inhalation Dusts and mists | Based on data for a similar substance. |
| | 410 Repeated Dose Dermal Toxicity: 21/28-day Study | Rat | 20 mg/kg | - | Sub-acute NOAEL Dermal | - |
| Alkyl phosphonate | 412 Repeated Dose Inhalation Toxicity: 28-day or 14-day Study | Rat | 19 mg/m ³ | 4 weeks | Sub-acute NOAEL Inhalation Vapour | - |
| | None available. | Rabbit | 20 mg/kg | - | Sub-acute NOAEL Dermal | Based on data for a similar substance. |
| | 422 Combined Repeated Dose Toxicity Study with the Reproduction/ Developmental Toxicity Screening Test | Rat | 250 mg/kg | - | Sub-acute NOAEL Oral | Based on data for a similar substance. |
| | 408 Repeated Dose 90-Day Oral Toxicity Study in Rodents | Rat | 125 mg/kg | - | Sub-chronic NOAEL Oral | Based on data for a similar substance. |
| | 453 Combined Chronic Toxicity/ Carcinogenicity Studies | Rat | 0.13 mg/l | 12 months | Chronic NOEL Inhalation Dusts and mists | Based on data for a similar substance. |
| 2,5-bis(tert-nonyldithio)-1,3,4-thiadiazole | 407 Repeated Dose 28-day Oral Toxicity Study in Rodents | Rat | 200 mg/kg | - | Sub-acute NOAEL Oral | Based on data for a similar substance. |
| | None available. | Rat | 1000 mg/kg | - | Sub-acute NOAEL Oral | - |
| | 421 Reproduction/ Developmental Toxicity Screening Test | Rat | 250 mg/kg | - | Sub-acute NOAEL Oral | - |
| bis(2-ethylhexyl) hydrogen phosphate | 407 Repeated Dose 28-day Oral Toxicity | Rat | 150 mg/kg | - | Sub-acute NOAEL Oral | - |

Section 11. Toxicological information

| | | | | | | |
|--------------------------------------|--|-----|------------|---|---------------------------|--|
| | Study in Rodents 422 Combined Repeated Dose Toxicity Study with the Reproduction/ Developmental Toxicity Screening Test | Rat | 125 mg/kg | - | Sub-acute NOAEL Oral | Based on data for a similar substance. |
| Alcohols, C12-16, ethoxylated | 407 Repeated Dose 28-day Oral Toxicity Study in Rodents | Rat | 100 mg/kg | - | Sub-acute NOAEL Oral | - |
| 2-ethylhexyl dihydrogen phosphate | 422 Combined Repeated Dose Toxicity Study with the Reproduction/ Developmental Toxicity Screening Test | Rat | 125 mg/kg | - | Sub-acute NOAEL Oral | Based on data for a similar substance. |
| | 408 Repeated Dose 90-Day Oral Toxicity Study in Rodents | Rat | 250 mg/kg | - | Sub-chronic NOAEL Oral | Based on data for a similar substance. |
| (Z)-octadec-9-enylamine | 407 Repeated Dose 28-day Oral Toxicity Study in Rodents | Rat | 3.25 mg/kg | - | Sub-acute NOAEL Oral | - |
| octylamine | 422 Combined Repeated Dose Toxicity Study with the Reproduction/ Developmental Toxicity Screening Test | Rat | 100 mg/kg | - | Sub-chronic NOAEL Oral | Based on data for a similar substance. |

Conclusion/Summary : Based on available data, the classification criteria are not met.

General : No known significant effects or critical hazards.

Carcinogenicity : No known significant effects or critical hazards.

Mutagenicity : No known significant effects or critical hazards.

Teratogenicity : No known significant effects or critical hazards.

Developmental effects : No known significant effects or critical hazards.

Fertility effects : No known significant effects or critical hazards.

Section 12. Ecological information

Toxicity

Section 12. Ecological information

| Product/ingredient name | Result | Species | Exposure | Remarks |
|--|-------------------------|---|------------|--|
| 1-Propene, 2-methyl-, sulfurized | Acute EL50 >100 mg/l | Algae - Pseudokirchneriella subcapitata | 72 hours | No effects at saturation. |
| | Acute EL50 >1000 mg/l | Daphnia - Daphnia magna | 48 hours | No effects at saturation. |
| Distillates (petroleum), hydrotreated heavy paraffinic | Acute LL50 10000 mg/l | Fish - Cyprinodon variegatus | 96 hours | - |
| | Chronic NOEL 5 mg/l | Algae - Pseudokirchneriella subcapitata | 72 hours | No effects at saturation. |
| | Acute EL50 >10000 mg/l | Daphnia - Daphnia magna | 48 hours | Based on data for a similar substance. |
| | Acute LL50 >100 mg/l | Fish - Pimephales promelas | 96 hours | Based on data for a similar substance. |
| | Chronic NOEL ≥100 mg/l | Algae - Pseudokirchneriella subcapitata | 72 hours | Based on data for a similar substance. |
| | Chronic NOEL 10 mg/l | Daphnia - Daphnia magna | 21 days | Based on data for a similar substance. |
| Amines, C12-14-tert-alkyl | Chronic NOEL 1000 mg/l | Fish - Oncorhynchus mykiss | 14 days | QSAR result. |
| | Acute EL50 0.44 mg/l | Algae - Pseudokirchneriella subcapitata | 72 hours | - |
| | Acute EL50 2.5 mg/l | Daphnia - Daphnia magna | 48 hours | - |
| | Acute EL50 63.5 mg/l | Micro-organism | 30 minutes | - |
| | Acute LL50 1.3 mg/l | Fish - Oncorhynchus mykiss | 96 hours | - |
| Alkyl phosphonate | Chronic NOEC 0.078 mg/l | Fish - Oncorhynchus mykiss | 96 days | - |
| | Chronic NOEL 0.05 mg/l | Algae - Pseudokirchneriella subcapitata | 72 hours | - |
| | Acute EC50 14.4 mg/l | Algae - Pseudokirchneriella subcapitata | 72 hours | - |
| | Acute EL50 >10000 mg/l | Micro-organism | 3 hours | Based on data for a similar substance. |
| | Acute IC50 20.8 mg/l | Daphnia - Daphnia magna | 48 hours | - |
| | Acute LC50 63.4 mg/l | Fish - Danio rerio | 96 hours | - |
| | Chronic EC10 5.1 mg/l | Algae - Pseudokirchneriella subcapitata | 72 hours | - |
| | Chronic NOEL 4.1 mg/l | Daphnia - Daphnia magna | 21 days | Based on data for a similar substance. |
| 2,5-bis(tert-nonyldithio)-1,3,4-thiadiazole | Acute EC50 ≥8000 mg/l | Micro-organism | 16 hours | Based on data for a similar substance. |
| | Acute EL50 >100 mg/l | Algae - Pseudokirchneriella subcapitata | 72 hours | - |
| bis(2-ethylhexyl) hydrogen phosphate | Acute EL50 41 mg/l | Daphnia - Daphnia magna | 48 hours | - |
| | Acute LL50 >1000 mg/l | Fish - Pimephales promelas | 96 hours | - |
| | Chronic EL10 >100 mg/l | Algae - Pseudokirchneriella subcapitata | 72 hours | - |
| | Acute EL50 >100 mg/l | Algae - Desmodesmus subspicatus | 72 hours | Based on data for a similar substance. |
| | Acute EL50 890 mg/l | Micro-organism | 3 hours | - |

Section 12. Ecological information

| | | | | |
|-----------------------------------|-------------------------|---|----------|--|
| Alcohols, C12-16, ethoxylated | Acute LL50 60.7 mg/l | Daphnia - Daphnia magna | 48 hours | - |
| | Acute LL50 20 mg/l | Fish - Oncorhynchus mykiss | 96 hours | - |
| | Chronic EL10 76 mg/l | Algae - Desmodesmus subspicatus | 72 hours | Based on data for a similar substance. |
| | Chronic NOEL 20.6 mg/l | Fish - Oncorhynchus mykiss | 48 days | - |
| | Acute EL50 0.41 mg/l | Algae - Pseudokirchneriella subcapitata | 72 hours | Based on data for a similar substance. |
| | Acute EL50 0.39 mg/l | Daphnia - Daphnia magna | 48 hours | Based on data for a similar substance. |
| | Acute EL50 >2 mg/l | Micro-organism | 5 hours | Based on data for a similar substance. |
| 2-ethylhexyl dihydrogen phosphate | Acute LC50 0.876 mg/l | Fish - Danio rerio | 96 hours | Based on data for a similar substance. |
| | Chronic NOEC 0.77 mg/l | Daphnia - Daphnia magna | 21 days | Based on data for a similar substance. |
| | Chronic NOEC 0.16 mg/l | Fish - Pimephales promelas | 10 days | Based on data for a similar substance. |
| | Chronic NOEL 0.31 mg/l | Algae - Pseudokirchneriella subcapitata | 72 hours | Based on data for a similar substance. |
| | Acute EL50 49 mg/l | Algae - Pseudokirchneriella subcapitata | 72 hours | Based on data for a similar substance. |
| | Acute EL50 >100 mg/l | Daphnia - Daphnia magna | 48 hours | Based on data for a similar substance. |
| | Acute EL50 420 mg/l | Micro-organism | 3 hours | Based on data for a similar substance. |
| (Z)-octadec-9-enylamine | Acute LL50 >100 mg/l | Fish - Oncorhynchus mykiss | 96 hours | Based on data for a similar substance. |
| | Chronic NOEL 25 mg/l | Algae - Pseudokirchneriella subcapitata | 72 hours | Based on data for a similar substance. |
| | Acute EL50 0.04 mg/l | Algae - Selenastrum capricornutum | 96 hours | - |
| | Acute EL50 0.011 mg/l | Daphnia - Daphnia magna | 48 hours | - |
| | Acute EL50 222.5 mg/l | Micro-organism | 3 hours | Based on data for a similar substance. |
| | Acute LL50 0.06 mg/l | Fish - Pimephales promelas | 96 hours | - |
| | Chronic NOEL 0.01 mg/l | Algae - Selenastrum capricornutum | 96 hours | - |
| octylamine | Chronic NOEL 0.013 mg/l | Daphnia - Daphnia magna | 21 days | - |
| | Acute EC50 1.9 mg/l | Daphnia - Daphnia magna | 48 hours | - |
| | Acute EL50 0.23 mg/l | Algae - Desmodesmus subspicatus | 72 hours | - |
| | Acute LC50 5.19 mg/l | Fish - Pimephales promelas | 96 hours | - |

Section 12. Ecological information

| | | | | |
|--|------------------------|---------------------------------|----------|---|
| | Chronic EL10 0.07 mg/l | Algae - Desmodesmus subspicatus | 72 hours | - |
|--|------------------------|---------------------------------|----------|---|

Conclusion/Summary : Toxic to aquatic life with long lasting effects.

Persistence and degradability

| Product/ingredient name | Test | Result | Remarks |
|--|---|--------------------------------|---|
| 1-Propene, 2-methyl-, sulfurized | OECD 301B Ready Biodegradability - CO2 Evolution Test | 0.3 % - Not readily - 28 days | - |
| Distillates (petroleum), hydrotreated heavy paraffinic | OECD 301F Ready Biodegradability - Manometric Respirometry Test | 31 % - Not readily - 28 days | Based on data for a similar substance. |
| Amines, C12-14-tert-alkyl | OECD 301D Ready Biodegradability - Closed Bottle Test | 21.8 % - Not readily - 28 days | - |
| Alkyl phosphonate | OECD 301F Ready Biodegradability - Manometric Respirometry Test | 89.8 % - Inherent - 28 days | Readily biodegradable but failing the 10-day window |
| 2,5-bis(tert-nonyldithio)-1,3,4-thiadiazole | OECD 301C Ready Biodegradability - Modified MITI Test (I) | 2 % - Not readily - 28 days | Based on data for a similar substance. |
| bis(2-ethylhexyl) hydrogen phosphate | OECD 301F Ready Biodegradability - Manometric Respirometry Test | 75 % - Readily - 28 days | - |
| Alcohols, C12-16, ethoxylated | OECD 301F Ready Biodegradability - Manometric Respirometry Test | 95 % - Readily - 28 days | Based on data for a similar substance. |
| 2-ethylhexyl dihydrogen phosphate | OECD 301B Ready Biodegradability - CO2 Evolution Test | 98 % - Readily - 28 days | Based on data for a similar substance. |
| (Z)-octadec-9-enylamine | OECD 301B Ready Biodegradability - CO2 Evolution Test | 66 % - Readily - 28 days | - |

Section 12. Ecological information

| | | | |
|------------|--|--------------------------|---|
| octylamine | OECD 301A Ready Biodegradability - DOC Die-Away Test | 99 % - Readily - 11 days | - |
|------------|--|--------------------------|---|

Bioaccumulative potential

| Product/ingredient name | LogP _{ow} | BCF | Potential |
|--------------------------------------|--------------------|----------|-----------|
| Amines, C12-14-tert-alkyl | 2.9 | - | low |
| Alkyl phosphonate | 1.81 | - | low |
| bis(2-ethylhexyl) hydrogen phosphate | 2.67 | 2.7 to 6 | low |
| octylamine | 2.9 | - | low |

Mobility in soil

Soil/water partition coefficient (K_{oc}) : Not available.

Mobility : Not available.

Hazardous to the ozone layer : Not applicable.

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

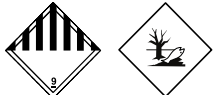
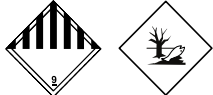
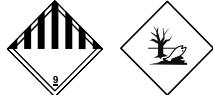

Section 13. Disposal considerations

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

Section 14. Transport information

| | UN | ADG | IMDG | IATA |
|-------------------------------------|--|--|--|--|
| 14.1 UN number | UN3082 | UN3082 | UN3082 | UN3082 |
| 14.2 UN proper shipping name | Environmentally hazardous substance, liquid, n.o.s. (Long-chain alkyl amine) | Environmentally hazardous substance, liquid, n.o.s. (Long-chain alkyl amine) | Environmentally hazardous substance, liquid, n.o.s. (Long-chain alkyl amine) Marine pollutant | Environmentally hazardous substance, liquid, n.o.s. (Long-chain alkyl amine) |
| | | 9 | 9 | 9 |

Section 14. Transport information

| | | | | |
|---|--|---|--|---|
| 14.3 Transport hazard class (es) | 9  |  |  |  |
| 14.4 Packing group | III | III | III | III |
| 14.5 Environmental hazards | Yes. | Yes. | Yes. | Yes. |

Additional information
Hazchem code

3Z

14.6 Special precautions for user

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

14.7 Transport in bulk according to IMO instruments

: Not available.

Section 15. Regulatory information

China

List of Goods banned for Importing

None of the components are listed.

List of Goods banned for Exporting

None of the components are listed.

List of Toxic Chemicals Severely Restricted for Importing & Exporting by China

None of the components are listed.

Singapore

Singapore - hazardous chemicals under government control

| Ingredient name | Status |
|------------------------------------|--------|
| None of the components are listed. | |

Australia

Standard for the Uniform Scheduling of Medicines and Poisons

Not applicable.

Model Work Health and Safety Regulations - Scheduled Substances

No listed substance

Japan

Fire Service Law

Section 15. Regulatory information

| Category | Substance name/Type | Danger category |
|-------------|---------------------|-----------------|
| Category IV | Class III petroleum | III |

Industrial Safety and Health Act

Label Requirements and Chemicals Requiring Notification

| Ingredient name | % |
|-----------------|-----------|
| Mineral oil | ≥15 - ≤25 |

Chemical Substances Control Law (CSCL)

| Ingredient name | % | Status | Reference number |
|--|-------------|---------------------|------------------|
| alpha-Alkyl(C12-15)-omega-hydroxypoly(oxyethylene) (It is limited that a number-average molecular weight of the polymer is less than 1,000.) | ≥1.0 - ≤3.0 | Priority assessment | 189 |

Poisonous and Deleterious Substances

| Ingredient name | % | Status | Reference number |
|------------------------------------|-------|--------|------------------|
| None of the components are listed. | ≤0.10 | | |

Pollutant Release and Transfer Registers (PRTR)

| Ingredient name | % | Measured as | Status | Control number |
|--|-------------|-------------|---------|----------------|
| Alkan-1-amine (limited to those the alkane is linear chain and C8,10,12,14,16 or 18 and the mixture thereof) | ≥1.0 - ≤3.0 | | Class 1 | 576 |

Japan - Water Pollution Control Law

| Ingredient name |
|--|
| n-Hexane Extracts (mineral oil) Boron compounds |

Korea

Regulation according to ISHA

ISHA article 117 : None of the components are listed.

(Harmful substances prohibited from manufacture)

ISHA article 118 : None of the components are listed.

(Harmful substances requiring permission)

Regulation according to K-REACH/CCA

Chemical name

%

Remarks

Date of issue/Date of revision

: 3/15/2023

Date of previous issue

: 3/10/2023

Version : 1.17

23/26

Section 15. Regulatory information

K-REACH/CCA Toxic chemicals : None of the components are listed.

K-REACH/CCA - Banned : None of the components are listed.

K-REACH/CCA - Restricted : None of the components are listed.

K-REACH/CCA Article - TRI : None of the components are listed.

Dangerous Materials Safety Management Act : **Class:** Class 4 - Flammable Liquid
Item: 5. Class 3 petroleum - Water-insoluble liquid
Threshold: 2000 L
Danger category: III
Signal word: Contact with sources of ignition prohibited

New Zealand

HSNO Approval Number : HSR002606

International Inventory Status

Australia : All components are listed or exempted.

Canada : All components are listed or exempted.

China : All components are listed or exempted.

Europe : For information on compliance with this regulation please contact your Afton representative
 (EHS.CustomerVolumes@AftonChemical.com).

Japan : All components are listed or exempted.

Republic of Korea : All components are listed or exempted.

New Zealand : All components are listed or exempted.

Philippines : All components are listed or exempted.

Switzerland : For information on compliance with this regulation please contact your Afton representative
 (EHS.CustomerVolumes@AftonChemical.com).

Turkey : For information on compliance with this regulation please contact your Afton representative
 (EHS.CustomerVolumes@AftonChemical.com).

Taiwan : All components are listed or exempted.

United Kingdom (UK) : For information on compliance with this regulation please contact your Afton representative
 (EHS.CustomerVolumes@AftonChemical.com).

United States Active : All components are active or exempted.

Section 16. Other information

History

Date of issue/Date of revision : 3/15/2023

EHS Department (Tel: +1 804 788 5800)

Section 16. Other information

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)
- UN = United Nations
- WOE = Weight of Evidence

Procedure used to derive the classification

| Classification | Justification |
|---|--------------------|
| SKIN CORROSION/IRRITATION - Category 2 | Calculation method |
| SERIOUS EYE DAMAGE/EYE IRRITATION - Category 2A | Calculation method |
| SHORT-TERM (ACUTE) AQUATIC HAZARD - Category 2 | Calculation method |
| LONG-TERM (CHRONIC) AQUATIC HAZARD - Category 2 | Calculation method |

Toxicological and Ecotoxicological Test Data Summary(s) : AT_A1, CORR_A5, ECO_A16, SEN_A9

 Indicates information that has changed from previously issued version.

Notice to reader

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