# PermaGrip PG-107XM, PermaGrip PG-107XMG, PermaGrip PG107XMR

## ICP Construction Inc.

Version No: **5.6**
Safety Data Sheet according to OSHA HazCom Standard (2024) requirements

Initial Date: **03/01/2025**
Revision Date: **06/18/2025**
Print Date: **06/18/2025**
S.GHS.USA.EN

## SECTION 1 Identification

### Product Identifier

| | |
|---|---|
| **Product name** | PermaGrip PG-107XM, PermaGrip PG-107XMG, PermaGrip PG107XMR |
| **Synonyms** | Not Available |
| **Proper shipping name** | Chemical under pressure, flammable, n.o.s. (contains dimethyl ether, butane and propane) |
| **Other means of identification** | Not Available |

### Recommended use of the chemical and restrictions on use

| | |
|---|---|
| **Relevant identified uses** | Contact Adhesive |

### Name, address, and telephone number of the chemical manufacturer, importer, or other responsible party

| | |
|---|---|
| **Registered company name** | **ICP Construction Inc.** |
| **Address** | 150 Dascomb Road Andover, MA 01810 United States |
| **Telephone** | 1-866-667-5119\|1-978-623-9987 |
| **Fax** | Not Available |
| **Website** | www.icpgroup.com |
| **Email** | sds@icpgroup.com |

### Emergency phone number

| | |
|---|---|
| **Association / Organisation** | **ChemTel** |
| **Emergency telephone number(s)** | **1-800-255-3924** |
| **Other emergency telephone number(s)** | **1-813-248-0585** |

## SECTION 2 Hazard(s) identification

### Classification of the substance or mixture

**NFPA 704 diamond**


Note: The hazard category numbers found in GHS classification in section 2 of this SDSs are NOT to be used to fill in the NFPA 704 diamond. Blue = Health Red = Fire Yellow = Reactivity White = Special (Oxidizer or water reactive substances)

| | |
|---|---|
| **Classification** | Chemical Under Pressure Category 2, Skin Corrosion/Irritation Category 2, Serious Eye Damage/Eye Irritation Category 2A, Specific Target Organ Toxicity - Single Exposure (Narcotic Effects) Category 3, Reproductive Toxicity Category 1B, Specific Target Organ Toxicity - Repeated Exposure Category 2, Hazardous to the Aquatic Environment Acute Hazard Category 2, Hazardous to the Aquatic Environment Long-Term Hazard Category 1, Simple Asphyxiant |

### Label elements

| | |
|---|---|
| **Hazard pictogram(s)** |  |
| **Signal word** | **Danger** |

### Hazard statement(s)

**Page 1 continued...**

| | |
|---|---|
| **H283** | Flammable chemical under pressure: May explode if heated |
| **H315** | Causes skin irritation. |
| **H319** | Causes serious eye irritation. |
| **H336** | May cause drowsiness or dizziness. |
| **H360** | May damage fertility or the unborn child. |
| **H373** | May cause damage to organs through prolonged or repeated exposure. (Respiratory system) (Inhalation) |
| **H401** | Toxic to aquatic life. |
| **H410** | Very toxic to aquatic life with long lasting effects. |
| | May displace oxygen and cause rapid suffocation |

**Hazard(s) not otherwise classified**

Not Applicable

**Precautionary statement(s) Prevention**

| | |
|---|---|
| **P201** | Obtain special instructions before use. |
| **P260** | Do not breathe gas. |
| **P271** | Use only outdoors or in a well-ventilated area. |
| **P280** | Wear protective gloves, protective clothing, eye protection and face protection. |
| **P273** | Avoid release to the environment. |
| **P202** | Do not handle until all safety precautions have been read and understood. |
| **P264** | Wash all exposed external body areas thoroughly after handling. |

**Precautionary statement(s) Response**

| | |
|---|---|
| **P308+P313** | IF exposed or concerned: Get medical advice/ attention. |
| **P370+P378** | In case of fire: Use alcohol resistant foam or fine spray/water fog to extinguish. |
| **P376** | Stop leak if safe to do so. |
| **P381** | Eliminate all ignition sources if safe to do so. |
| **P305+P351+P338** | IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. |
| **P337+P313** | If eye irritation persists: Get medical advice/attention. |
| **P391** | Collect spillage. |
| **P302+P352** | IF ON SKIN: Wash with plenty of water and soap. |
| **P304+P340** | IF INHALED: Remove person to fresh air and keep comfortable for breathing. |
| **P362+P364** | Take off contaminated clothing and wash it before reuse. |

**Precautionary statement(s) Storage**

| | |
|---|---|
| **P405** | Store locked up. |
| **P410+P403** | Protect from sunlight. Store in a well-ventilated place. |
| **P403+P233** | Store in a well-ventilated place. Keep container tightly closed. |

**Precautionary statement(s) Disposal**

| | |
|---|---|
| **P501** | Dispose of contents/container to authorised hazardous or special waste collection point in accordance with any local regulation. |

## SECTION 3 Composition / information on ingredients

**Substances**

See section below for composition of Mixtures

**Mixtures**

| CAS No | %[weight] | Name |
|---|---|---|
| 67-64-1 | 10.548 | acetone |
| 108-88-3 | <0.025197 | toluene |
| 71-43-2 | <0.000252 | benzene |
| 100-41-4 | 0.000266-0.000311 | ethylbenzene |
| 98-82-8 | <0.000252 | cumene |
| 64742-49-0 | 25.196852 | Naphtha (petroleum), hydrotreated light |
| 110-54-3 | <0.025197 | n-hexane |
| 25085-50-1 | >3.346253 | p-tert-butylphenol/ formaldehyde resin |
| 7732-18-5 | 0.06816 | water |
| 108-88-3 | 3.110822 | toluene |
| 25038-32-8 | 9.918 | styrene/ isoprene copolymer |
| 9003-31-0 | >1.88298 | isoprene homopolymer |
| Not Available | <0.013314 | Solvent(n-hexane) |
| Not Available | 0.001902 | Antioxidant(2,6-di-t-butyl-4-cresol) |
| 64742-16-1 | 3.222732 | hydrocarbon resin, postpolymerised with maleic anhydride |
| 2082-79-3 | 0.24 | 3,5-bis(butyl)-4-hydroxyhydrocinnamic stearate |
| Not Available | >2.059872 | Proprietary Rosin Phenolic Resin |

**Continued...**

| CAS No | %[weight] | Name |
|---|---|---|
| Not Available | 0.002064-0.004128 | Proprietary Antioxidant |
| 64742-53-6 | 0.002992-0.004189 | naphthenic distillate, light, hydrotreated (mild) |
| 92257-31-3 | 0.002992-0.004189 | C.I. Solvent Red 164 |
| 74-98-6 | 8.096 | propane |
| 106-97-8. | 7.904 | butane |
| 115-10-6 | 24 | dimethyl ether |

## SECTION 4 First-aid measures

### Description of first aid measures

| | |
|---|---|
| **Eye Contact** | If this product comes in contact with the eyes:<br>▸ Wash out immediately with fresh running water.<br>▸ Ensure complete irrigation of the eye by keeping eyelids apart and away from eye and moving the eyelids by occasionally lifting the upper and lower lids.<br>▸ Seek medical attention without delay; if pain persists or recurs seek medical attention.<br>▸ Removal of contact lenses after an eye injury should only be undertaken by skilled personnel. |
| **Skin Contact** | If skin contact occurs:<br>▸ Immediately remove all contaminated clothing, including footwear.<br>▸ Flush skin and hair with running water (and soap if available).<br>▸ Seek medical attention in event of irritation.<br>For thermal burns:<br>▸ Decontaminate area around burn.<br>▸ Consider the use of cold packs and topical antibiotics.<br>For first-degree burns (affecting top layer of skin)<br>▸ Hold burned skin under cool (not cold) running water or immerse in cool water until pain subsides.<br>▸ Use compresses if running water is not available.<br>▸ Cover with sterile non-adhesive bandage or clean cloth.<br>▸ Do NOT apply butter or ointments; this may cause infection.<br>▸ Give over-the counter pain relievers if pain increases or swelling, redness, fever occur.<br>For second-degree burns (affecting top two layers of skin)<br>▸ Cool the burn by immerse in cold running water for 10-15 minutes.<br>▸ Use compresses if running water is not available.<br>▸ Do NOT apply ice as this may lower body temperature and cause further damage.<br>▸ Do NOT break blisters or apply butter or ointments; this may cause infection.<br>▸ Protect burn by cover loosely with sterile, nonstick bandage and secure in place with gauze or tape.<br>To prevent shock: (unless the person has a head, neck, or leg injury, or it would cause discomfort):<br>▸ Lay the person flat.<br>▸ Elevate feet about 12 inches.<br>▸ Elevate burn area above heart level, if possible.<br>▸ Cover the person with coat or blanket.<br>▸ Seek medical assistance.<br>For third-degree burns<br>Seek immediate medical or emergency assistance.<br>In the mean time:<br>▸ Protect burn area cover loosely with sterile, nonstick bandage or, for large areas, a sheet or other material that will not leave lint in wound.<br>▸ Separate burned toes and fingers with dry, sterile dressings.<br>▸ Do not soak burn in water or apply ointments or butter; this may cause infection.<br>▸ To prevent shock see above.<br>▸ For an airway burn, do not place pillow under the person's head when the person is lying down. This can close the airway.<br>▸ Have a person with a facial burn sit up.<br>▸ Check pulse and breathing to monitor for shock until emergency help arrives. |
| **Inhalation** | ▸ If fumes, aerosols or combustion products are inhaled remove from contaminated area.<br>▸ Other measures are usually unnecessary. |
| **Ingestion** | ▸ Immediately give a glass of water.<br>▸ First aid is not generally required. If in doubt, contact a Poisons Information Centre or a doctor. |

### Most important symptoms and effects, both acute and delayed

See Section 11

### Indication of any immediate medical attention and special treatment needed

for lower alkyl ethers:

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BASIC TREATMENT

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- Establish a patent airway with suction where necessary.
- Watch for signs of respiratory insufficiency and assist ventilation as necessary.
- Administer oxygen by non-rebreather mask at 10 to 15 l/min.
- A low-stimulus environment must be maintained.
- Monitor and treat, where necessary, for shock.
- Anticipate and treat, where necessary, for seizures.
- **DO NOT** use emetics. Where ingestion is suspected rinse mouth and give up to 200 ml water (5 ml/kg recommended) for dilution where patient is able to swallow, has a strong gag reflex and does not drool.

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ADVANCED TREATMENT

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- Consider orotracheal or nasotracheal intubation for airway control in unconscious patient or where respiratory arrest has occurred.
- Positive-pressure ventilation using a bag-valve mask might be of use.
- Monitor and treat, where necessary, for arrhythmias.
- Start an IV D5W TKO. If signs of hypovolaemia are present use lactated Ringers solution. Fluid overload might create complications.
- Drug therapy should be considered for pulmonary oedema.
- Hypotension without signs of hypovolaemia may require vasopressors.
- Treat seizures with diazepam.
- Proparacaine hydrochloride should be used to assist eye irrigation.

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EMERGENCY DEPARTMENT

**Continued...**

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- Laboratory analysis of complete blood count, serum electrolytes, BUN, creatinine, glucose, urinalysis, baseline for serum aminotransferases (ALT and AST), calcium, phosphorus and magnesium, may assist in establishing a treatment regime. Other useful analyses include anion and osmolar gaps, arterial blood gases (ABGs), chest radiographs and electrocardiograph.
- Ethers may produce anion gap acidosis. Hyperventilation and bicarbonate therapy might be indicated.
- Haemodialysis might be considered in patients with impaired renal function.
- Consult a toxicologist as necessary.

***BRONSTEIN, A.C. and CURRANCE, P.L.***
***EMERGENCY CARE FOR HAZARDOUS MATERIALS EXPOSURE: 2nd Ed. 1994***

For gas exposures:

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BASIC TREATMENT

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- Establish a patent airway with suction where necessary.
- Watch for signs of respiratory insufficiency and assist ventilation as necessary.
- Administer oxygen by non-rebreather mask at 10 to 15 l/min.
- Monitor and treat, where necessary, for pulmonary oedema .
- Monitor and treat, where necessary, for shock.
- Anticipate seizures.

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ADVANCED TREATMENT

---

- Consider orotracheal or nasotracheal intubation for airway control in unconscious patient or where respiratory arrest has occurred.
- Positive-pressure ventilation using a bag-valve mask might be of use.
- Monitor and treat, where necessary, for arrhythmias.
- Start an IV D5W TKO. If signs of hypovolaemia are present use lactated Ringers solution. Fluid overload might create complications.
- Drug therapy should be considered for pulmonary oedema.
- Hypotension with signs of hypovolaemia requires the cautious administration of fluids. Fluid overload might create complications.
- Treat seizures with diazepam.
- Proparacaine hydrochloride should be used to assist eye irrigation.

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## SECTION 5 Fire-fighting measures

### Extinguishing media

- Water spray or fog.
- Foam.
- Dry chemical powder.

### Special hazards arising from the substrate or mixture

| | |
|---|---|
| **Fire Incompatibility** | ▸ Avoid contamination with oxidising agents i.e. nitrates, oxidising acids, chlorine bleaches, pool chlorine etc. as ignition may result |

### Special protective equipment and precautions for fire-fighters

| | |
|---|---|
| **Fire Fighting** | ▸ Alert Fire Brigade and tell them location and nature of hazard.<br>▸ Wear breathing apparatus plus protective gloves in the event of a fire.<br>▸ Prevent, by any means available, spillage from entering drains or water courses. |
| **Fire/Explosion Hazard** | carbon dioxide ($CO_2$)<br>other pyrolysis products typical of burning organic material.<br>**Contains low boiling substance:** Closed containers may rupture due to pressure buildup under fire conditions.<br>**CARE**: Water in contact with hot liquid may cause foaming and a steam explosion with wide scattering of hot oil and possible severe burns.<br>Foaming may cause overflow of containers and may result in possible fire. |

## SECTION 6 Accidental release measures

### Personal precautions, protective equipment and emergency procedures

See section 8

### Environmental precautions

See section 12

### Methods and material for containment and cleaning up

| | |
|---|---|
| **Minor Spills** | ▸ Remove all ignition sources.<br>▸ Clean up all spills immediately.<br>▸ Avoid breathing vapours and contact with skin and eyes. |
| **Major Spills** | Minor hazard.<br>▸ Clear area of personnel.<br>▸ Alert Fire Brigade and tell them location and nature of hazard. |

Personal Protective Equipment advice is contained in Section 8 of the SDS.

## SECTION 7 Handling and storage

### Precautions for safe handling

| | |
|---|---|
| **Safe handling** | **Contains low boiling substance:**<br>Storage in sealed containers may result in pressure buildup causing violent rupture of containers not rated appropriately.<br>▸ Check for bulging containers.<br>▸ Vent periodically<br>▸ Always release caps or seals slowly to ensure slow dissipation of vapours<br>▸ Avoid all personal contact, including inhalation.<br>▸ Wear protective clothing when risk of exposure occurs.<br>▸ Use in a well-ventilated area. |
| **Other information** | ▸ Store in original containers. |

**Continued...**

| | |
|---|---|
| | ▸ Keep containers securely sealed.<br>▸ Store in a cool, dry, well-ventilated area. |

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

| | |
|---|---|
| **Suitable container** | ▸ Polyethylene or polypropylene container.<br>▸ Packing as recommended by manufacturer.<br>▸ Check all containers are clearly labelled and free from leaks. |
| **Storage incompatibility** | Dimethyl ether:<br>▸ is a peroxidisable gas<br>▸ may be heat and shock sensitive<br>▸ is able to form unstable peroxides on prolonged exposure to air<br>▸ reacts violently with oxidisers, aluminium hydride, lithium aluminium hydride<br>▸ is incompatible with strong acids, metal salts<br>Butane / isobutane:<br>▸ reacts violently with strong oxidisers, acetylene, halogens, and nitrous oxides<br>▸ does not mix with chlorine dioxide, nitric acid and some plastics<br>▸ may generate electrostatic charges, due to low conductivity, which may ignite vapours.<br>Store butane well away from nickel carbonyl in the presence of oxygen between 20-40°C<br>Propane:<br>▸ reacts violently with strong oxidisers, barium peroxide, chlorine dioxide, dichlorine oxide, fluorine etc.<br>▸ Dissolves some plastics, rubbers, and coatings<br>▸ may accumulate static charges which may ignite its vapours<br>Ethers<br>· may react violently with strong oxidising agents and acids.<br>· can act as bases.- they form salts with strong acids and addition complexes with Lewis acids; the complex between diethyl ether and boron trifluoride is an example.<br>· are generally stable to water under neutral conditions and ambient temperatures.<br>▸ The tendency of many ethers to form explosive peroxides is well documented.<br>▸ Ethers lacking non-methyl hydrogen atoms adjacent to the ether link are thought to be relatively safe.<br>▸ When solvents have been freed from peroxides (by percolation through a column of activated alumina for example), the absorbed peroxides must promptly be desorbed by treatment with the polar solvents methanol or water, which should be discarded safely. |

## SECTION 8 Exposure controls / personal protection

### Control parameters

**Occupational Exposure Limits (OEL)**

**INGREDIENT DATA**

| Source | Ingredient | Material name | TWA | STEL | Peak | Notes |
|---|---|---|---|---|---|---|
| US OSHA Permissible Exposure Limits (PELs) Table Z-1 | acetone | Acetone | 1000 ppm / 2400 mg/m3 | Not Available | Not Available | Not Available |
| US NIOSH Recommended Exposure Limits (RELs) | acetone | Acetone | 250 ppm / 590 mg/m3 | Not Available | Not Available | Not Available |
| US OSHA Permissible Exposure Limits (PELs) Table Z-2 | toluene | Toluene | 200 ppm | 300 ppm | 500 (10 min) ppm | (Z37.12-1967) |
| US NIOSH Recommended Exposure Limits (RELs) | toluene | Toluene | 100 ppm / 375 mg/m3 | 560 mg/m3 / 150 ppm | Not Available | Not Available |
| US OSHA Permissible Exposure Limits (PELs) Table Z-1 | benzene | Benzene | 1 ppm | 5 ppm | Not Available | Not Available |
| US OSHA Permissible Exposure Limits (PELs) Table Z-2 | benzene | Benzene | 10 ppm | 25 ppm | 50 (10 min) ppm | (Z37.40-1969) |
| US NIOSH Recommended Exposure Limits (RELs) | benzene | Benzene | 0.1 ppm | 1 ppm | Not Available | Ca; See Appendix A |
| US OSHA Permissible Exposure Limits (PELs) Table Z-1 | ethylbenzene | Ethyl benzene | 100 ppm / 435 mg/m3 | Not Available | Not Available | Not Available |
| US NIOSH Recommended Exposure Limits (RELs) | ethylbenzene | Ethyl benzene | 100 ppm / 435 mg/m3 | 545 mg/m3 / 125 ppm | Not Available | Not Available |
| US OSHA Permissible Exposure Limits (PELs) Table Z-1 | cumene | Cumene | 50 ppm / 245 mg/m3 | Not Available | Not Available | Skin designation |
| US NIOSH Recommended Exposure Limits (RELs) | cumene | Cumene | 50 ppm / 245 mg/m3 | Not Available | Not Available | [skin] |
| US OSHA Permissible Exposure Limits (PELs) Table Z-1 | n-hexane | n-Hexane | 500 ppm / 1800 mg/m3 | Not Available | Not Available | Not Available |
| US NIOSH Recommended Exposure Limits (RELs) | n-hexane | n-Hexane | 50 ppm / 180 mg/m3 | Not Available | Not Available | Not Available |
| US OSHA Permissible Exposure Limits (PELs) Table Z-1 | p-tert-butylphenol/ formaldehyde resin | Particulates Not Otherwise Regulated (PNOR)- Total dust | 15 mg/m3 | Not Available | Not Available | Not Available |
| US OSHA Permissible Exposure Limits (PELs) Table Z-1 | p-tert-butylphenol/ formaldehyde resin | Particulates Not Otherwise Regulated (PNOR)- Respirable fraction | 5 mg/m3 | Not Available | Not Available | Not Available |
| US OSHA Permissible Exposure Limits (PELs) Table Z-3 | p-tert-butylphenol/ formaldehyde resin | Inert or Nuisance Dust: Total Dust | 15 mg/m3 / 50 mppcf | Not Available | Not Available | Not Available |

**Continued...**

| Source | Ingredient | Material name | TWA | STEL | Peak | Notes |
|---|---|---|---|---|---|---|
| US OSHA Permissible Exposure Limits (PELs) Table Z-3 | p-tert-butylphenol/ formaldehyde resin | Inert or Nuisance Dust: Respirable fraction | 5 mg/m3 / 15 mppcf | Not Available | Not Available | Not Available |
| US NIOSH Recommended Exposure Limits (RELs) | p-tert-butylphenol/ formaldehyde resin | Particulates not otherwise regulated | Not Available | Not Available | Not Available | See Appendix D |
| US OSHA Permissible Exposure Limits (PELs) Table Z-2 | toluene | Toluene | 200 ppm | 300 ppm | 500 (10 min) ppm | (Z37.12-1967) |
| US NIOSH Recommended Exposure Limits (RELs) | toluene | Toluene | 100 ppm / 375 mg/m3 | 560 mg/m3 / 150 ppm | Not Available | Not Available |
| US OSHA Permissible Exposure Limits (PELs) Table Z-1 | isoprene homopolymer | Particulates Not Otherwise Regulated (PNOR)- Respirable fraction | 5 mg/m3 | Not Available | Not Available | Not Available |
| US OSHA Permissible Exposure Limits (PELs) Table Z-1 | isoprene homopolymer | Particulates Not Otherwise Regulated (PNOR)- Total dust | 15 mg/m3 | Not Available | Not Available | Not Available |
| US OSHA Permissible Exposure Limits (PELs) Table Z-3 | isoprene homopolymer | Inert or Nuisance Dust: Respirable fraction | 5 mg/m3 / 15 mppcf | Not Available | Not Available | Not Available |
| US OSHA Permissible Exposure Limits (PELs) Table Z-3 | isoprene homopolymer | Inert or Nuisance Dust: Total Dust | 15 mg/m3 / 50 mppcf | Not Available | Not Available | Not Available |
| US NIOSH Recommended Exposure Limits (RELs) | isoprene homopolymer | Particulates not otherwise regulated | Not Available | Not Available | Not Available | See Appendix D |
| US OSHA Permissible Exposure Limits (PELs) Table Z-1 | hydrocarbon resin, postpolymerised with maleic anhydride | Particulates Not Otherwise Regulated (PNOR)- Respirable fraction | 5 mg/m3 | Not Available | Not Available | Not Available |
| US OSHA Permissible Exposure Limits (PELs) Table Z-1 | hydrocarbon resin, postpolymerised with maleic anhydride | Particulates Not Otherwise Regulated (PNOR)- Total dust | 15 mg/m3 | Not Available | Not Available | Not Available |
| US OSHA Permissible Exposure Limits (PELs) Table Z-3 | hydrocarbon resin, postpolymerised with maleic anhydride | Inert or Nuisance Dust: Respirable fraction | 5 mg/m3 / 15 mppcf | Not Available | Not Available | Not Available |
| US OSHA Permissible Exposure Limits (PELs) Table Z-3 | hydrocarbon resin, postpolymerised with maleic anhydride | Inert or Nuisance Dust: Total Dust | 15 mg/m3 / 50 mppcf | Not Available | Not Available | Not Available |
| US NIOSH Recommended Exposure Limits (RELs) | hydrocarbon resin, postpolymerised with maleic anhydride | Particulates not otherwise regulated | Not Available | Not Available | Not Available | See Appendix D |
| US OSHA Permissible Exposure Limits (PELs) Table Z-1 | 3,5-bis(butyl)-4-hydroxyhydrocinnamic stearate | Particulates Not Otherwise Regulated (PNOR)- Total dust | 15 mg/m3 | Not Available | Not Available | Not Available |
| US OSHA Permissible Exposure Limits (PELs) Table Z-1 | 3,5-bis(butyl)-4-hydroxyhydrocinnamic stearate | Particulates Not Otherwise Regulated (PNOR)- Respirable fraction | 5 mg/m3 | Not Available | Not Available | Not Available |
| US OSHA Permissible Exposure Limits (PELs) Table Z-3 | 3,5-bis(butyl)-4-hydroxyhydrocinnamic stearate | Inert or Nuisance Dust: Total Dust | 15 mg/m3 / 50 mppcf | Not Available | Not Available | Not Available |
| US OSHA Permissible Exposure Limits (PELs) Table Z-3 | 3,5-bis(butyl)-4-hydroxyhydrocinnamic stearate | Inert or Nuisance Dust: Respirable fraction | 5 mg/m3 / 15 mppcf | Not Available | Not Available | Not Available |
| US NIOSH Recommended Exposure Limits (RELs) | 3,5-bis(butyl)-4-hydroxyhydrocinnamic stearate | Particulates not otherwise regulated | Not Available | Not Available | Not Available | See Appendix D |
| US OSHA Permissible Exposure Limits (PELs) Table Z-1 | naphthenic distillate, light, hydrotreated (mild) | Oil mist, mineral | 5 mg/m3 | Not Available | Not Available | Not Available |
| US OSHA Permissible Exposure Limits (PELs) Table Z-1 | C.I. Solvent Red 164 | Particulates Not Otherwise Regulated (PNOR)- Respirable fraction | 5 mg/m3 | Not Available | Not Available | Not Available |
| US OSHA Permissible Exposure Limits (PELs) Table Z-1 | C.I. Solvent Red 164 | Particulates Not Otherwise Regulated (PNOR)- Total dust | 15 mg/m3 | Not Available | Not Available | Not Available |
| US OSHA Permissible Exposure Limits (PELs) Table Z-3 | C.I. Solvent Red 164 | Inert or Nuisance Dust: Total Dust | 15 mg/m3 / 50 mppcf | Not Available | Not Available | Not Available |
| US OSHA Permissible Exposure Limits (PELs) Table Z-3 | C.I. Solvent Red 164 | Inert or Nuisance Dust: Respirable fraction | 5 mg/m3 / 15 mppcf | Not Available | Not Available | Not Available |
| US NIOSH Recommended Exposure Limits (RELs) | C.I. Solvent Red 164 | Particulates not otherwise regulated | Not Available | Not Available | Not Available | See Appendix D |
| US OSHA Permissible Exposure Limits (PELs) Table Z-1 | propane | Propane | 1000 ppm / 1800 mg/m3 | Not Available | Not Available | Not Available |
| US NIOSH Recommended Exposure Limits (RELs) | propane | Propane | 1000 ppm / 1800 mg/m3 | Not Available | Not Available | Not Available |
| US NIOSH Recommended Exposure Limits (RELs) | butane | n-Butane | 800 ppm / 1900 mg/m3 | Not Available | Not Available | Not Available |

**Emergency Limits**

**Continued...**

| Ingredient | TEEL-1 | TEEL-2 | TEEL-3 |
|---|---|---|---|
| acetone | Not Available | Not Available | Not Available |
| toluene | Not Available | Not Available | Not Available |
| benzene | Not Available | Not Available | Not Available |
| ethylbenzene | Not Available | Not Available | Not Available |
| cumene | Not Available | Not Available | Not Available |
| Naphtha (petroleum), hydrotreated light | 1,000 mg/m3 | 11,000 mg/m3 | 66,000 mg/m3 |
| n-hexane | 260 ppm | Not Available | Not Available |
| toluene | Not Available | Not Available | Not Available |
| naphthenic distillate, light, hydrotreated (mild) | 1,100 mg/m3 | 1,800 mg/m3 | 40,000 mg/m3 |
| propane | Not Available | Not Available | Not Available |
| butane | Not Available | Not Available | Not Available |
| dimethyl ether | 3,000 ppm | 3800* ppm | 7200* ppm |

| Ingredient | Original IDLH | Revised IDLH |
|---|---|---|
| acetone | 2,500 ppm | Not Available |
| toluene | 500 ppm | Not Available |
| benzene | 500 ppm | Not Available |
| ethylbenzene | Not Available | Not Available |
| cumene | Not Available | Not Available |
| Naphtha (petroleum), hydrotreated light | Not Available | Not Available |
| n-hexane | Not Available | Not Available |
| p-tert-butylphenol/ formaldehyde resin | Not Available | Not Available |
| water | Not Available | Not Available |
| toluene | 500 ppm | Not Available |
| styrene/ isoprene copolymer | Not Available | Not Available |
| isoprene homopolymer | Not Available | Not Available |
| Solvent(n-hexane) | Not Available | Not Available |
| Antioxidant(2,6-di-t-butyl-4-cresol) | Not Available | Not Available |
| hydrocarbon resin, postpolymerised with maleic anhydride | Not Available | Not Available |
| 3,5-bis(butyl)-4-hydroxyhydrocinnamic stearate | Not Available | Not Available |
| Proprietary Rosin Phenolic Resin | Not Available | Not Available |
| Proprietary Antioxidant | Not Available | Not Available |
| naphthenic distillate, light, hydrotreated (mild) | 2,500 mg/m3 | Not Available |
| C.I. Solvent Red 164 | Not Available | Not Available |
| propane | Not Available | Not Available |
| butane | Not Available | Not Available |
| dimethyl ether | Not Available | Not Available |

**Exposure controls**

| | |
|---|---|
| **Appropriate engineering controls** | Engineering controls are used to remove a hazard or place a barrier between the worker and the hazard. Well-designed engineering controls can be highly effective in protecting workers and will typically be independent of worker interactions to provide this high level of protection.<br>The basic types of engineering controls are:<br>Process controls which involve changing the way a job activity or process is done to reduce the risk. |
| **Individual protection measures, such as personal protective equipment** |  |
| **Eye and face protection** | ‣ Safety glasses with side shields.<br>‣ Chemical goggles. [AS/NZS 1337.1, EN166 or national equivalent]<br>‣ Contact lenses may pose a special hazard; soft contact lenses may absorb and concentrate irritants. |
| **Skin protection** | See Hand protection below |
| **Hands/feet protection** | ‣ Wear chemical protective gloves, e.g. PVC.<br>‣ Wear safety footwear or safety gumboots, e.g. Rubber |
| **Body protection** | See Other protection below |
| **Other protection** | ‣ Overalls.<br>‣ P.V.C apron.<br>‣ Barrier cream. |

**Continued...**

**Respiratory protection**

Type AX-P Filter of sufficient capacity. (AS/NZS 1716 & 1715, EN 143:2000 & 149:2001, ANSI Z88 or national equivalent)

- Cartridge respirators should never be used for emergency ingress or in areas of unknown vapour concentrations or oxygen content.
- The wearer must be warned to leave the contaminated area immediately on detecting any odours through the respirator. The odour may indicate that the mask is not functioning properly, that the vapour concentration is too high, or that the mask is not properly fitted. Because of these limitations, only restricted use of cartridge respirators is considered appropriate.
- Cartridge performance is affected by humidity. Cartridges should be changed after 2 hr of continuous use unless it is determined that the humidity is less than 75%, in which case, cartridges can be used for 4 hr. Used cartridges should be discarded daily, regardless of the length of time used

## SECTION 9 Physical and chemical properties

**Information on basic physical and chemical properties**

| | |
|---|---|
| **Appearance** | Not Available |

| | | | |
|---|---|---|---|
| **Physical state** | Compressed Gas | **Relative density (Water = 1)** | Not Available |
| **Odour** | Not Available | **Partition coefficient n-octanol / water** | Not Available |
| **Odour threshold** | Not Available | **Auto-ignition temperature (°C)** | Not Available |
| **pH (as supplied)** | Not Available | **Decomposition temperature (°C)** | Not Available |
| **Melting point / freezing point (°C)** | Not Available | **Viscosity (cSt)** | Not Available |
| **Initial boiling point and boiling range (°C)** | Not Available | **Molecular weight (g/mol)** | Not Available |
| **Flash point (°C)** | -18 | **Taste** | Not Available |
| **Evaporation rate** | Not Available | **Explosive properties** | Not Available |
| **Flammability** | Not Applicable | **Oxidising properties** | Not Available |
| **Upper Explosive Limit (%)** | Not Available | **Surface Tension (dyn/cm or mN/m)** | Not Available |
| **Lower Explosive Limit (%)** | Not Available | **Volatile Component (%vol)** | Not Available |
| **Vapour pressure (kPa)** | Not Available | **Gas group** | Not Available |
| **Solubility in water** | Immiscible | **pH as a solution (1%)** | Not Available |
| **Vapour density (Air = 1)** | Not Available | **VOC g/L** | 457 |
| **Heat of Combustion (kJ/g)** | Not Available | **Ignition Distance (cm)** | Not Available |
| **Flame Height (cm)** | Not Available | **Flame Duration (s)** | Not Available |
| **Enclosed Space Ignition Time Equivalent (s/m3)** | Not Available | **Enclosed Space Ignition Deflagration Density (g/m3)** | Not Available |
| **Nanoform Solubility** | Not Available | **Nanoform Particle Characteristics** | Not Available |
| **Particle Size** | Not Available | | |

## SECTION 10 Stability and reactivity

| | |
|---|---|
| **Reactivity** | See section 7 |
| **Chemical stability** | |
| **Possibility of hazardous reactions** | See section 7 |
| **Conditions to avoid** | See section 7 |
| **Incompatible materials** | See section 7 |
| **Hazardous decomposition products** | See section 5 |

## SECTION 11 Toxicological information

**Information on toxicological effects**

| | |
|---|---|
| **a) Acute Toxicity** | Based on available data, the classification criteria are not met. |
| **b) Skin Irritation/Corrosion** | There is sufficient evidence to classify this material as skin corrosive or irritating. |
| **c) Serious Eye Damage/Irritation** | There is sufficient evidence to classify this material as eye damaging or irritating |
| **d) Respiratory or Skin sensitisation** | Based on available data, the classification criteria are not met. |
| **e) Mutagenicity** | Based on available data, the classification criteria are not met. |
| **f) Carcinogenicity** | Based on available data, the classification criteria are not met. |
| **g) Reproductivity** | There is sufficient evidence to classify this material as toxic to reproductivity |
| **h) STOT - Single Exposure** | There is sufficient evidence to classify this material as toxic to specific organs through single exposure |
| **i) STOT - Repeated Exposure** | There is sufficient evidence to classify this material as toxic to specific organs through repeated exposure |
| **j) Aspiration Hazard** | Based on available data, the classification criteria are not met. |

| | |
|---|---|
| **Inhaled** | The material is not thought to produce adverse health effects or irritation of the respiratory tract (as classified by EC Directives using animal models). Nevertheless, good hygiene practice requires that exposure be kept to a minimum and that suitable control measures be used in an |

**Continued...**

| | |
|---|---|
| | occupational setting.<br>Inhalation of vapours may cause drowsiness and dizziness. This may be accompanied by sleepiness, reduced alertness, loss of reflexes, lack of co-ordination, and vertigo.<br>When inhaled, polystyrene is virtually non-toxic. High concentrations of dust may cause temporary irritation and cough. Fumes from hot wire cutting the material may irritate the nose and eyes.<br>Isobutane produces a dose dependent action and at high concentrations may cause numbness, suffocation, exhilaration, dizziness, headache, nausea, confusion, incoordination and unconsciousness in severe cases.<br>The paraffin gases are practically not harmful at low doses. Higher doses may produce reversible brain and nerve depression and irritation.<br>Inhalation of oil droplets or aerosols may cause discomfort and may produce chemical inflammation of the lungs.<br>Following inhalation, ethers cause lethargy and stupor. Inhaling lower alkyl ethers results in headache, dizziness, weakness, blurred vision, seizures and possible coma.<br>Material is highly volatile and may quickly form a concentrated atmosphere in confined or unventilated areas. The vapour may displace and replace air in breathing zone, acting as a simple asphyxiant. This may happen with little warning of overexposure.<br>Inhalation of high concentrations of gas/vapour causes lung irritation with coughing and nausea, central nervous depression with headache and dizziness, slowing of reflexes, fatigue and inco-ordination.<br>Inhalation of non-toxic gases may cause:<br>▸ CNS effects: headache, confusion, dizziness, stupor, seizures and coma;<br>▸ respiratory: shortness of breath and rapid breathing;<br>▸ cardiovascular: collapse and irregular heart beats;<br>▸ gastrointestinal: mucous membrane irritation, nausea and vomiting. |
| **Ingestion** | Ingestion of alkyl ethers may produce stupor, blurred vision, headache, dizziness and irritation of the nose and throat. Respiratory distress and asphyxia may result.<br>The material has **NOT** been classified by EC Directives or other classification systems as 'harmful by ingestion'. This is because of the lack of corroborating animal or human evidence.<br>Not normally a hazard due to physical form of product.<br>Considered an unlikely route of entry in commercial/industrial environments |
| **Skin Contact** | This material can cause inflammation of the skin on contact in some persons.<br>The material may accentuate any pre-existing dermatitis condition<br>Skin contact is not thought to have harmful health effects (as classified under EC Directives); the material may still produce health damage following entry through wounds, lesions or abrasions.<br>Open cuts, abraded or irritated skin should not be exposed to this material<br>Entry into the blood-stream, through, for example, cuts, abrasions or lesions, may produce systemic injury with harmful effects. Examine the skin prior to the use of the material and ensure that any external damage is suitably protected.<br>Alkyl ethers may defat and dehydrate the skin producing dermatoses. Absorption may produce headache, dizziness, and central nervous system depression. |
| **Eye** | This material causes serious eye irritation.<br>Eye contact with alkyl ethers (vapour or liquid) may produce irritation, redness and tears. |
| **Chronic** | Toxic: danger of serious damage to health by prolonged exposure through inhalation, in contact with skin and if swallowed.<br>This material can cause serious damage if one is exposed to it for long periods. It can be assumed that it contains a substance which can produce severe defects.<br>Ample evidence exists from experimentation that reduced human fertility is directly caused by exposure to the material.<br>Workers exposed to polystyrene converting processes show disorders of the liver, blood, nervous system and mucous membranes of the upper respiratory tract. A disturbed menstrual cycle, morphological changes in the placenta and complications arising during pregnancy and childbirth have also been recorded in polystyrene production workers.<br>Chronic exposure to alkyl ethers may result in loss of appetite, excessive thirst, fatigue, and weight loss.<br>Chronic exposure to benzene may cause headache, fatigue, loss of appetite and lassitude with incipient blood effects including anaemia and blood changes. Benzene is a myelotoxicant known to suppress bone- marrow cell proliferation and to induce haematologic disorders in humans and animals.<br>Chronic inhalation or skin exposure to n-hexane may cause damage to nerve ends in extremities, e.g. finger, toes with loss of sensation. |

**PermaGrip PG-107XM, PermaGrip PG-107XMG, PermaGrip PG107XMR**

| TOXICITY | IRRITATION |
|---|---|
| Not Available | Not Available |

**acetone**

| TOXICITY | IRRITATION |
|---|---|
| Dermal (rabbit) LD50: 20000 mg/kg[2] | Eye (Human): 186300ppm - Mild |
| Inhalation (Mouse) LC50: 44 mg/L4h[2] | Eye (Human): 500ppm |
| Oral (Rat) LD50: 5800 mg/kg[2] | Eye (Rodent - rabbit): 10uL - Mild |
| | Eye (Rodent - rabbit): 20mg - Severe |
| | Eye (Rodent - rabbit): 20mg/24H - Moderate |
| | Eye: adverse effect observed (irritating)[1] |
| | Skin (Rodent - rabbit): 395mg - Mild |
| | Skin (Rodent - rabbit): 500mg/24H - Mild |
| | Skin: no adverse effect observed (not irritating)[1] |

**toluene**

| TOXICITY | IRRITATION |
|---|---|
| Dermal (rabbit) LD50: 12124 mg/kg[2] | Eye (Human): 300ppm |
| Inhalation (Rat) LC50: >13350 ppm4h[2] | Eye (Rodent - rabbit): 0.1mL |
| Oral (Rat) LD50: 636 mg/kg[2] | Eye (Rodent - rabbit): 0.1mL - Severe |
| | Eye (Rodent - rabbit): 100mg/30S - Mild |
| | Eye (Rodent - rabbit): 2mg/24H - Severe |
| | Eye (Rodent - rabbit): 870ug - Mild |
| | Eye: adverse effect observed (irritating)[1] |
| | Skin (Mammal - pig): 250uL/24H - Mild |
| | Skin (Rodent - rabbit): 20mg/24H - Moderate |
| | Skin (Rodent - rabbit): 435mg - Mild |

**Continued...**

| | |
|---|---|
| | Skin (Rodent - rabbit): 500mg - Moderate |
| | Skin: adverse effect observed (irritating)[1] |
| | Skin: no adverse effect observed (not irritating)[1] |

**benzene**

| TOXICITY | IRRITATION |
|---|---|
| dermal (mouse) LD50: 48 mg/kg[2] | Eye (Rodent - rabbit): 0.1mL |
| Inhalation (Rat) LC50: 43.767 mg/L4h[1] | Eye (Rodent - rabbit): 0.1mL - Severe |
| Oral (Rat) LD50: 930 mg/kg[2] | Eye (Rodent - rabbit): 2mg/24H - Severe |
| | Eye (Rodent - rabbit): 88mg - Moderate |
| | Eye: adverse effect observed (irritating)[1] |
| | Skin (Rodent - rabbit): 15mg/24H - Mild |
| | Skin (Rodent - rabbit): 20mg/24H - Moderate |
| | Skin (Rodent - rat): 60uL/8H - Mild |
| | Skin: adverse effect observed (irritating)[1] |

**ethylbenzene**

| TOXICITY | IRRITATION |
|---|---|
| Dermal (rabbit) LD50: 17800 mg/kg[2] | Eye (Rodent - rabbit): 500mg - Severe |
| Inhalation (Rat) LC50: 17.2 mg/l4h[2] | Skin (Rodent - rabbit): 15mg/24H - Mild |
| Oral (Rat) LD50: 3500 mg/kg[2] | |

**cumene**

| TOXICITY | IRRITATION |
|---|---|
| Dermal (rabbit) LD50: 2000 mg/kg[2] | Eye (Rodent - rabbit): 500mg/24H - Mild |
| Inhalation (Rat) LC50: 39 mg/L4h[2] | Eye (Rodent - rabbit): 86mg - Mild |
| Oral (Rat) LD50: 1400 mg/kg[2] | Eye: no adverse effect observed (not irritating)[1] |
| | Skin (Rodent - rabbit): 100mg/24H - Moderate |
| | Skin (Rodent - rabbit): 10mg/24H - Mild |
| | Skin: no adverse effect observed (not irritating)[1] |

**Naphtha (petroleum), hydrotreated light**

| TOXICITY | IRRITATION |
|---|---|
| dermal (rat) LD50: 3.35 mg/kg[2] | Eye: no adverse effect observed (not irritating)[1] |
| Inhalation (Rat) LC50: 0.26 mg/L4h[2] | Skin: adverse effect observed (irritating)[1] |
| Oral (Rat) LD50: 16.75 mg/kg[2] | |

**n-hexane**

| TOXICITY | IRRITATION |
|---|---|
| Dermal (rabbit) LD50: >2000 mg/kg[1] | Eye (Rodent - rabbit): 10mg - Mild |
| Inhalation (Rat) LC50: 48000 ppm4h[2] | Eye: no adverse effect observed (not irritating)[1] |
| Oral (Rat) LD50: 28710 mg/kg[2] | Skin: no adverse effect observed (not irritating)[1] |

**p-tert-butylphenol/ formaldehyde resin**

| TOXICITY | IRRITATION |
|---|---|
| dermal (rat) LD50: >2000 mg/kg[1] | Not Available |
| Oral (Rat) LD50: >2000 mg/kg[1] | |

**water**

| TOXICITY | IRRITATION |
|---|---|
| Oral (Rat) LD50: >90000 mg/kg[2] | Not Available |

**toluene**

| TOXICITY | IRRITATION |
|---|---|
| Dermal (rabbit) LD50: 12124 mg/kg[2] | Eye (Human): 300ppm |
| Inhalation (Human) TCLo: 100 ppm[2] | Eye (Rodent - rabbit): 0.1mL |
| Inhalation (man) TCLo: 200 ppm[2] | Eye (Rodent - rabbit): 0.1mL - Severe |
| Inhalation (Rat) LC50: >26700 ppm/1h[2] | Eye (Rodent - rabbit): 100mg/30S - Mild |
| Oral (Human)LDLo: 50 mg/kg[2] | Eye (Rodent - rabbit): 2mg/24H - Severe |
| Oral (Rat) LD50: 636 mg/kg[2] | Eye (Rodent - rabbit): 870ug - Mild |
| | Eye: adverse effect observed (irritating)[1] |
| | Skin (Mammal - pig): 250uL/24H - Mild |
| | Skin (Rodent - rabbit): 20mg/24H - Moderate |

**Continued...**

| | |
|---|---|
| | Skin (Rodent - rabbit): 435mg - Mild |
| | Skin (Rodent - rabbit): 500mg - Moderate |
| | Skin: adverse effect observed (irritating)[1] |
| | Skin: no adverse effect observed (not irritating)[1] |

**styrene/ isoprene copolymer**

| TOXICITY | IRRITATION |
|---|---|
| Not Available | Not Available |

**isoprene homopolymer**

| TOXICITY | IRRITATION |
|---|---|
| Not Available | Skin: adverse effect observed (irritating)[1] |
| | Skin: no adverse effect observed (not irritating)[1] |

**Solvent(n-hexane)**

| TOXICITY | IRRITATION |
|---|---|
| Not Available | Not Available |

**Antioxidant(2,6-di-t-butyl-4-cresol)**

| TOXICITY | IRRITATION |
|---|---|
| Not Available | Not Available |

**hydrocarbon resin, postpolymerised with maleic anhydride**

| TOXICITY | IRRITATION |
|---|---|
| Oral (Rat) LD50: >2000 mg/kg[1] | Eye: no adverse effect observed (not irritating)[1] |
| | Skin: no adverse effect observed (not irritating)[1] |

**3,5-bis(butyl)-4-hydroxyhydrocinnamic stearate**

| TOXICITY | IRRITATION |
|---|---|
| dermal (rat) LD50: >2000 mg/kg *[2] | Eye: no adverse effect observed (not irritating)[1] |
| Inhalation (Rat)LC50: >1800 mg/m3[2] | Skin: no adverse effect observed (not irritating)[1] |
| Inhalation (Rat)LCLo: >1.3 mg/l/4h *[2] | |
| Intraperitoneal (rat) LD50: >1000 mg/kg *[2] | |
| Oral (Rat) LD50: >10000 mg/kg *[2] | |

**Proprietary Rosin Phenolic Resin**

| TOXICITY | IRRITATION |
|---|---|
| Not Available | Not Available |

**Proprietary Antioxidant**

| TOXICITY | IRRITATION |
|---|---|
| Not Available | Not Available |

**naphthenic distillate, light, hydrotreated (mild)**

| TOXICITY | IRRITATION |
|---|---|
| Dermal (rabbit) LD50: >2000 mg/kg[1] | Eye (Rodent - rabbit): 0.1mL |
| Inhalation (Rat) LC50: 2.18 mg/l4h[2] | Eye: no adverse effect observed (not irritating)[1] |
| Oral (Rat) LD50: >5000 mg/kg[2] | Skin (Rodent - rabbit): 0.5mL/24H - Moderate |
| | Skin (Rodent - rabbit): 500mg - Severe |
| | Skin: no adverse effect observed (not irritating)[1] |

**C.I. Solvent Red 164**

| TOXICITY | IRRITATION |
|---|---|
| Dermal (rabbit) LD50: >10200 mg/kg[1] | Eye: no adverse effect observed (not irritating)[1] |
| Oral (Rat) LD50: >5000 mg/kg[1] | Skin: no adverse effect observed (not irritating)[1] |

**propane**

| TOXICITY | IRRITATION |
|---|---|
| Inhalation (Rat) LC50: 364726.819 ppm4h[2] | Not Available |

**butane**

| TOXICITY | IRRITATION |
|---|---|
| Inhalation (Rat) LC50: 658 mg/l4h[2] | Eye: no adverse effect observed (not irritating)[1] |
| | Skin: no adverse effect observed (not irritating)[1] |

**dimethyl ether**

| TOXICITY | IRRITATION |
|---|---|
| Inhalation (Rat) LC50: >20000 ppm4h[1] | Skin: no adverse effect observed (not irritating)[1] |

**Continued...**

| | |
|---|---|
| ***Legend:*** | ***1. Value obtained from Europe ECHA Registered Substances - Acute toxicity 2. Value obtained from manufacturer's SDS. Unless otherwise specified data extracted from RTECS - Register of Toxic Effect of chemical Substances*** |

| | |
|---|---|
| **PermaGrip PG-107XM, PermaGrip PG-107XMG, PermaGrip PG107XMR** | Occupational exposures in the rubber-manufacturing industry are carcinogenic to humans (Group 1).IARC Working Groups<br>There is sufficient evidence in humans for the carcinogenicity of occupational exposures in the rubber-manufacturing industry. Occupational exposures in the rubber-manufacturing industry cause leukaemia, lymphoma, and cancers of the urinary bladder, lung, and stomach.<br>Also, a positive association has been observed between occupational exposures in the rubber-manufacturing industry and cancers of the prostate, oesophagus, and larynx.IARC Working Group.<br>The multiple genetic and cytogenetic effects observed among workers employed in the rubber-manufacturing industry provide strong evidence to support genotoxicity as one mechanism for the observed increase in cancer risks. However, due to the complexity and changing nature of the exposure mixture and the potential interactions between exposures in the rubber-manufacturing industry, other mechanisms are also likely to play a role. |
| **ACETONE** | For acetone:<br>The acute toxicity of acetone is low. Acetone is not a skin irritant or sensitizer, but it removes fat from the skin, and it also irritates the eye. Animal testing shows acetone may cause anaemia. |
| **BENZENE** | Inhalation (man) TCLo: 150 ppm/1y - I<br>Data demonstrate that during inhalation exposure,aromatic hydrocarbons undergo substantial partitioning into adipose tissues. Following cessation of exposure, the level of aromatic hydrocarbons in body fats rapidly declines. Thus, the aromatic hydrocarbons are unlikely to bioaccumulate in the body. |
| **ETHYLBENZENE** | Liver changes, utheral tract, effects on fertility, foetotoxicity, specific developmental abnormalities (musculoskeletal system) recorded.<br>The material may produce severe irritation to the eye causing pronounced inflammation. Repeated or prolonged exposure to irritants may produce conjunctivitis.<br>Ethylbenzene is readily absorbed when inhaled, swallowed or in contact with the skin. It is distributed throughout the body, and passed out through urine. It may irritate the skin, eyes and may cause hearing loss if exposed to high doses.<br>**NOTE:** Substance has been shown to be mutagenic in at least one assay, or belongs to a family of chemicals producing damage or change to cellular DNA. |
| **CUMENE** | Cumene is reasonably anticipated to be a human carcinogen based on sufficient evidence of carcinogenicity from studies in experimental animals. Cumene caused tumours at several tissue sites, including lung and liver in mice and kidney in male rats. Several proposed mechanisms of carcinogenesis support the relevance to humans of lung and liver tumours in experimental animals. similar metabolic pathways. There is also evidence that cumene is genotoxic in some tissues, based on findings of DNA damage in rodent lung and liver. Furthermore, mutations of the K-ras oncogene and p53 tumor-suppressor gene observed in cumene-induced lung tumours in mice, along with altered expression of many other genes, resemble molecular alterations found in human lung and other cancers. The relevance of the kidney tumors to cancer in humans is uncertain; there is evidence that a species-specific mechanism not relevant to humans contributes to their induction, but it is possible that other mechanisms relevant to humans, such as genotoxicity, may also contribute to kidney-tumour formation in male rats.<br>Asthma-like symptoms may continue for months or even years after exposure to the material ends. This may be due to a non-allergic condition known as reactive airways dysfunction syndrome (RADS) which can occur after exposure to high levels of highly irritating compound. Main criteria for diagnosing RADS include the absence of previous airways disease in a non-atopic individual, with sudden onset of persistent asthma-like symptoms within minutes to hours of a documented exposure to the irritant.<br>For aromatic terpenes: p-cymene and cumene have low toxic potential and are excreted in the urine. At very high doses in animal testing, inco-ordination, damage to the kidneys and lung inflammation, with decrease in thymus weight, occurred. This group of substances does not seem to cause cancer, genetic damage or developmental toxicity and has low potential for reproductive toxicity.<br>Tenth Annual Report on Carcinogens: Substance anticipated to be Carcinogen<br>[***National Toxicology Program: U.S. Dep. of Health & Human Services 2002***] |
| **Naphtha (petroleum), hydrotreated light** | Most Low Boiling Point Naphthas (LBPNs) have low actute toxicity to oral, dermal and inhalation routes of exposure, and mild to moderate skin and eye irritating effects. However, some heavier 'cracked' LBPNs (LKBPNs with greater olefinic content) have been found to be more irritating to the skin and eyes compared to non-cracked LBPNs.<br>LBPNs are not known to be sensitising to the skin.<br>Animal studies examined the effects of short-term and longer-term exposure to LBPNs through inhalation or oral routes. In male rats specifically, exposure to LBPNs resulted in kidney-related issues like increased kidney weight, kidney lesions, and hyaline droplet formation.<br>Animal studies indicate that normal, branched and cyclic paraffins are absorbed from the gastrointestinal tract and that the absorption of n-paraffins is inversely proportional to the carbon chain length, with little absorption above C30. With respect to the carbon chain lengths likely to be present in mineral oil, n-paraffins may be absorbed to a greater extent than iso- or cyclo-paraffins.<br>The major classes of hydrocarbons are well absorbed into the gastrointestinal tract in various species. In many cases, the hydrophobic hydrocarbons are ingested in association with fats in the diet.<br>The High Benzene Naphthas (HBNs) contain mainly benzene but its adverse health effect is more with other components, which may cause adverse health effects involving a variety of organs. They may produce genetic damage as well as effects on reproduction and the unborn baby (generally at levels toxic to the mother). They may also cause cancers.<br>Petroleum contains aromatic (benzene, toluene, ethyl benzene, napthalene) and aliphatic hydrocarbons (n-hexane), which can result in many detrimental health effects, including, cancer, tumour formation, hearing loss, and nervous system toxicity.<br>Animal testing shows breathing in petroleum causes tumours of the liver and kidney; these are however not considered to be relevant in humans. Similarly, exposure to gasoline over a lifetime can cause kidney cancer in animals, but the relevance in humans is questionable.<br>Most studies involving gasoline have shown that gasoline does not cause genetic mutation, including all recent studies in living human subjects (such as in petrol service station attendants).<br>Animal studies show concentrations of toluene (>0.1%) can cause developmental effects such as lower birth weight and developmental toxicity to the nervous system of the foetus. Other studies show no adverse effects on the foetus.<br>Prolonged contact with petroleum may result in skin inflammation and make the skin more sensitive to irritation and penetration by other materials.<br>DHC Solvent Chemie (for EC No.: 926-605-8) |
| **N-HEXANE** | The material may be irritating to the eye, with prolonged contact causing inflammation. Repeated or prolonged exposure to irritants may produce conjunctivitis. |
| **isoprene homopolymer** | Allergic reactions involving the respiratory tract are usually due to interactions between IgE antibodies and allergens and occur rapidly. Allergic potential of the allergen and period of exposure often determine the severity of symptoms. Some people may be genetically more prone than others, and exposure to other irritants may aggravate symptoms.<br>Attention should be paid to atopic diathesis, characterised by increased susceptibility to nasal inflammation, asthma and eczema.<br>Exogenous allergic alveolitis is induced essentially by allergen specific immune-complexes of the IgG type; cell-mediated reactions (T lymphocytes) may be involved. Such allergy is of the delayed type with onset up to four hours following exposure. |
| **HYDROCARBON RESIN, POSTPOLYMERISED WITH MALEIC ANHYDRIDE** | Oral (-) LD50: 7000-10000 mg/kg Nil reported. [Manufacturer] |
| **3,5-bis(butyl)-4-hydroxyhydrocinnamic stearate** | For 3,5-bis(butyl)-4-hydroxyhydrocinnamic stearate Teratogenicity/Reproductive Toxicity: 2-Generation study (Rats): The test substance was fed in the diet at concentrations of 0, 500, 1,500 and 5,000 ppm. Treatment of the F0 males and females began when they were six weeks of age, and continued until all Fl litters had been weaned. Direct treatment of the Fl males and females began when they were 4 weeks of age, and continued until all F2 litters had been weaned. Segment II study (Rats): Test substance was administered by gavage to pregnant rats from day 6 to 15 of gestation, inclusive. The concentrations were 0, 150, 500 and 1,000 mg/kg. Bodyweight gain was slightly depressed in the 500 and 1,000 mg/kg dose levels and reduced feed intake was registered in a dose related fashion during the period of administration of |

**Continued...**

| | |
|---|---|
| | the test substance. Segment II study (Mice): Test substance was administered by gavage to pregnant mice from day 6 to 15 of gestation, inclusive. The concentrations were 150, 500 and 1,000 mg/kg. The average bodyweight gain as well as feed intake were comparable for all groups. Subchronic Toxicity: (Dogs): In a 3-month toxicity study, Beagle dogs were fed a diet containing 0, 1,000, 3,000 and 10,000 ppm of the test substance. No clinical symptoms or signs of systemic toxicity were observed and no deaths occurred during the experiment. Ophthalmic inspection, hearing test, food consumption, bodyweight gain, mean food conversion, haematology, blood chemistry, gross pathology and histopathology revealed no treatment related effects. (Rats): The test substance was administered to rats as an aerosol (dust) for 6 hours/day, 5 days/week for 3 weeks. The animals were exposed to mean gravimetric concentrations of 23 and 543 mg/m3. There were no reactions to treatment for any of the parameters investigated. Chronic Toxicity/Carcinogenicity: (Mice): Mice were administered 0, 5, 50, 500 ppm of the test substance in the feed, corresponding to a mean daily intake of about 56 mg/kg/day for the highest dose group for 24 months. The only difference seen was reduced survival time for the high dose animals. There was no evidence of an increased tumor incidence. (Rats): In a 104 week/feeding study, rats were treated with the test substance in the diet at levels of 0, 500, 1,500, 5,000 ppm. Reaction to treatment at the various dietary levels was as follows: At 5,000 ppm: a. A higher survival rate among females (Mindfully note: which means a lower survival rate for males). Absorption/Distribution/Excretion Metabolism 10 mg/kg of radiolabeled test substance was administered by gavage to 4 albino rats after a 12-hour fast (water permitted). The animals were then placed in metabolism cages for 168 hours and urine and feces samples were collected. Within 0-48 hours after administration about 73%n of the radioactivity was eliminated from the body. Other Toxicity Data: 4-week oral toxicity study (Young rats): Fifty young (4 week old) rats were treated by gavage with single daily doses of 0, 5, 30, 100 and 300 mg/kg of the test substance for 28 days. The liver was the target organ as indicated by a dose-dependent organ weight increase and by histopathology: at 300 mg/kg a minimal centrilobular hepatocytic hypertrophy was observed. A small number of high dose animals showed clinical chemistry changes, including elevated transaminase activities and cholesterol levels compared to control animals.<br>Data show that acute toxicity following oral and topical use of hindered phenols is low. They are not proven to cause mutations. However, long term use may affect the liver, thyroid, kidney and lymph nodes. |
| **NAPHTHENIC DISTILLATE, LIGHT, HYDROTREATED (MILD)** | The materials included in the Lubricating Base Oils category are related from both process and physical-chemical perspectives;<br>The potential toxicity of a specific distillate base oil is inversely related to the severity or extent of processing the oil has undergone, since:<br>• The adverse effects of these materials are associated with undesirable components, and<br>• The levels of the undesirable components are inversely related to the degree of processing;<br>• Distillate base oils receiving the same degree or extent of processing will have similar toxicities;<br>• The potential toxicity of residual base oils is independent of the degree of processing the oil receives.<br>• The reproductive and developmental toxicity of the distillate base oils is inversely related to the degree of processing.<br>Unrefined & mildly refined distillate base oils contain the highest levels of undesirable components, have the largest variation of hydrocarbon molecules and have shown the highest potential cancer-causing and mutation-causing activities. Highly and severely refined distillate base oils are produced from unrefined and mildly refined oils by removing or transforming undesirable components. In comparison to unrefined and mildly refined base oils, the highly and severely refined distillate base oils have a smaller range of hydrocarbon molecules and have demonstrated very low mammalian toxicity.<br>The material may cause severe skin irritation after prolonged or repeated exposure and may produce on contact skin redness, swelling, the production of vesicles, scaling and thickening of the skin. Repeated exposures may produce severe ulceration. |
| **PermaGrip PG-107XM, PermaGrip PG-107XMG, PermaGrip PG107XMR & NAPHTHENIC DISTILLATE, LIGHT, HYDROTREATED (MILD)** | For unrefined and mildly refined distillate base oils:<br>Acute toxicity: Animal testing showed high semilethal doses of >5000 mg/kg body weight and >2 g/kg body weight for exposure by swallowing or skin contact, respectively. The same material was also reported to be moderately irritating to skin, while not being sensitizing.<br>Repeat dose toxicity: Animal testing showed that repeat dose toxicity was mild to moderate to the skin.<br>Reproductive / developmental toxicity: No studies on developmental toxicity or reproduction are available. Animal testing shows that high doses may reduce the body weight of both the mother and the foetus, and increase the rate of soft tissue malformations.<br>Genetic toxicity: These oils have been found to cause mutations.<br>Cancer-causing potential: The general conclusion that can be drawn from animal testing is that these oils may potentially cause skin cancer; however, they have not been found to be associated with an increase in tumours elsewhere in the body. |
| **ACETONE & TOLUENE & BENZENE & ETHYLBENZENE & CUMENE & toluene** | The material may cause skin irritation after prolonged or repeated exposure and may produce on contact skin redness, swelling, the production of vesicles, scaling and thickening of the skin. |
| **TOLUENE & toluene** | For toluene:<br>Acute toxicity: Humans exposed to high levels of toluene for short periods of time experience adverse central nervous system effects ranging from headaches to intoxication, convulsions, narcosis (sleepiness) and death. When inhaled or swallowed, toluene can cause severe central nervous system depression, and in large doses has a narcotic effect. 60mL has caused death. |
| **BENZENE & NAPHTHENIC DISTILLATE, LIGHT, HYDROTREATED (MILD)** | **WARNING:** This substance has been classified by the IARC as Group 1: **CARCINOGENIC TO HUMANS**. |
| **ETHYLBENZENE & CUMENE** | **WARNING:** This substance has been classified by the IARC as Group 2B: Possibly Carcinogenic to Humans. |
| **p-tert-butylphenol/ formaldehyde resin & isoprene homopolymer & 3,5-bis(butyl)-4-hydroxyhydrocinnamic stearate** | The following information refers to contact allergens as a group and may not be specific to this product.<br>Contact allergies quickly manifest themselves as contact eczema, more rarely as urticaria or Quincke's oedema. The pathogenesis of contact eczema involves a cell-mediated (T lymphocytes) immune reaction of the delayed type. |
| **p-tert-butylphenol/ formaldehyde resin & WATER & STYRENE/ ISOPRENE COPOLYMER & isoprene homopolymer & C.I. SOLVENT RED 164 & PROPANE** | No significant acute toxicological data identified in literature search. |

| | | | |
|---|---|---|---|
| **Acute Toxicity** | ✗ | **Carcinogenicity** | ✗ |
| **Skin Irritation/Corrosion** | ✓ | **Reproductivity** | ✓ |
| **Serious Eye Damage/Irritation** | ✓ | **STOT - Single Exposure** | ✓ |
| **Respiratory or Skin sensitisation** | ✗ | **STOT - Repeated Exposure** | ✓ |
| **Mutagenicity** | ✗ | **Aspiration Hazard** | ✗ |

***Legend:*** ✗ ***– Data either not available or does not fill the criteria for classification***
✓ ***– Data available to make classification***

## SECTION 12 Ecological information

**Toxicity**

**PermaGrip PG-107XM, PermaGrip PG-107XMG,**

| Endpoint | Test Duration (hr) | Species | Value | Source |
|---|---|---|---|---|

**Continued...**

**PermaGrip PG107XMR**

| | | | | |
|---|---|---|---|---|
| Not Available | Not Available | Not Available | Not Available | Not Available |

**acetone**

| Endpoint | Test Duration (hr) | Species | Value | Source |
|---|---|---|---|---|
| EC50 | 48h | Crustacea | 6098.4mg/L | 5 |
| EC50 | 72h | Algae or other aquatic plants | 5600-10000mg/L | 4 |
| LC50 | 96h | Fish | 3744.6-5000.7mg/L | 4 |
| EC50 | 96h | Algae or other aquatic plants | 9.873-27.684mg/l | 4 |
| NOEC(ECx) | 12h | Fish | 0.001mg/L | 4 |

**toluene**

| Endpoint | Test Duration (hr) | Species | Value | Source |
|---|---|---|---|---|
| EC50 | 48h | Crustacea | 3.78mg/L | 5 |
| EC50 | 72h | Algae or other aquatic plants | 12.5mg/L | 4 |
| EC50 | 96h | Algae or other aquatic plants | >376.71mg/L | 4 |
| NOEC(ECx) | 168h | Crustacea | 0.74mg/l | 2 |
| LC50 | 96h | Fish | 5-35mg/l | 4 |

**benzene**

| Endpoint | Test Duration (hr) | Species | Value | Source |
|---|---|---|---|---|
| EC50 | 48h | Crustacea | 7.578-13.983mg/L | 4 |
| EC50(ECx) | 24h | Algae or other aquatic plants | <0.001mg/L | 4 |
| EC50 | 72h | Algae or other aquatic plants | 29mg/l | 1 |
| ErC50 | 72h | Algae or other aquatic plants | >1360mg/l | 1 |
| EC50 | 96h | Algae or other aquatic plants | >1360mg/l | 1 |
| LC50 | 96h | Fish | 2.54-7.217mg/L | 4 |

**ethylbenzene**

| Endpoint | Test Duration (hr) | Species | Value | Source |
|---|---|---|---|---|
| EC50 | 48h | Crustacea | 1.37-4.4mg/l | 4 |
| EC50 | 72h | Algae or other aquatic plants | 2.4-9.8mg/L | 4 |
| EC50(ECx) | 24h | Algae or other aquatic plants | 0.02-938mg/L | 4 |
| EC50 | 96h | Algae or other aquatic plants | 1.7-7.6mg/L | 4 |
| LC50 | 96h | Fish | 3.381-4.075mg/L | 4 |

**cumene**

| Endpoint | Test Duration (hr) | Species | Value | Source |
|---|---|---|---|---|
| EC50 | 48h | Crustacea | 4mg/l | 1 |
| EC50 | 72h | Algae or other aquatic plants | 1.29mg/l | 2 |
| NOEC(ECx) | 96h | Crustacea | 0.4mg/l | 1 |
| LC50 | 96h | Fish | 2.7mg/l | 2 |

**Naphtha (petroleum), hydrotreated light**

| Endpoint | Test Duration (hr) | Species | Value | Source |
|---|---|---|---|---|
| EC50 | 48h | Crustacea | 0.64mg/l | 2 |
| LC50 | 96h | Fish | 0.11mg/l | 2 |
| EC50 | 96h | Algae or other aquatic plants | 64mg/l | 2 |
| NOEC(ECx) | 504h | Crustacea | 0.17mg/l | 2 |

**n-hexane**

| Endpoint | Test Duration (hr) | Species | Value | Source |
|---|---|---|---|---|
| EC50(ECx) | 4h | Algae or other aquatic plants | 0.12mg/L | 4 |
| LC50 | 96h | Fish | 113mg/L | 4 |

**p-tert-butylphenol/ formaldehyde resin**

| Endpoint | Test Duration (hr) | Species | Value | Source |
|---|---|---|---|---|
| EC50 | 48h | Crustacea | >1.4mg/l | 2 |
| EC50 | 72h | Algae or other aquatic plants | 1.1mg/l | 2 |
| NOEC(ECx) | 96h | Fish | 0.18mg/l | 2 |
| LC50 | 96h | Fish | 0.26mg/l | 2 |

**water**

| Endpoint | Test Duration (hr) | Species | Value | Source |
|---|---|---|---|---|
| Not Available | Not Available | Not Available | Not Available | Not Available |

**toluene**

| Endpoint | Test Duration (hr) | Species | Value | Source |
|---|---|---|---|---|
| EC50 | 48h | Crustacea | 3.78mg/L | 5 |
| EC50 | 72h | Algae or other aquatic plants | 12.5mg/L | 4 |

**Continued...**

| | | | | | |
|---|---|---|---|---|---|
| | EC50 | 96h | Algae or other aquatic plants | >376.71mg/L | 4 |
| | NOEC(ECx) | 168h | Crustacea | 0.74mg/l | 2 |
| | LC50 | 96h | Fish | 5-35mg/l | 4 |

**styrene/ isoprene copolymer**

| Endpoint | Test Duration (hr) | Species | Value | Source |
|---|---|---|---|---|
| Not Available | Not Available | Not Available | Not Available | Not Available |

**isoprene homopolymer**

| Endpoint | Test Duration (hr) | Species | Value | Source |
|---|---|---|---|---|
| Not Available | Not Available | Not Available | Not Available | Not Available |

**Solvent(n-hexane)**

| Endpoint | Test Duration (hr) | Species | Value | Source |
|---|---|---|---|---|
| Not Available | Not Available | Not Available | Not Available | Not Available |

**Antioxidant(2,6-di-t-butyl-4-cresol)**

| Endpoint | Test Duration (hr) | Species | Value | Source |
|---|---|---|---|---|
| Not Available | Not Available | Not Available | Not Available | Not Available |

**hydrocarbon resin, postpolymerised with maleic anhydride**

| Endpoint | Test Duration (hr) | Species | Value | Source |
|---|---|---|---|---|
| EC50 | 48h | Crustacea | >100mg/l | 2 |
| EC50 | 72h | Algae or other aquatic plants | >100mg/l | 2 |
| NOEC(ECx) | 72h | Algae or other aquatic plants | <1mg/l | 2 |

**3,5-bis(butyl)-4-hydroxyhydrocinnamic stearate**

| Endpoint | Test Duration (hr) | Species | Value | Source |
|---|---|---|---|---|
| EC50 | 72h | Algae or other aquatic plants | >30mg/l | 1 |
| NOEC(ECx) | 72h | Algae or other aquatic plants | 30mg/l | 1 |
| LC50 | 96h | Fish | >100mg/l | Not Available |
| BCF | 1008h | Fish | <1.2-8.4 | 7 |

**Proprietary Rosin Phenolic Resin**

| Endpoint | Test Duration (hr) | Species | Value | Source |
|---|---|---|---|---|
| Not Available | Not Available | Not Available | Not Available | Not Available |

**Proprietary Antioxidant**

| Endpoint | Test Duration (hr) | Species | Value | Source |
|---|---|---|---|---|
| Not Available | Not Available | Not Available | Not Available | Not Available |

**naphthenic distillate, light, hydrotreated (mild)**

| Endpoint | Test Duration (hr) | Species | Value | Source |
|---|---|---|---|---|
| EC50 | 48h | Crustacea | >1000mg/l | 1 |
| ErC50 | 72h | Algae or other aquatic plants | >1000mg/l | 1 |
| EC50 | 96h | Algae or other aquatic plants | >1000mg/l | 1 |
| NOEC(ECx) | 504h | Crustacea | >1mg/l | 1 |

**C.I. Solvent Red 164**

| Endpoint | Test Duration (hr) | Species | Value | Source |
|---|---|---|---|---|
| Not Available | Not Available | Not Available | Not Available | Not Available |

**propane**

| Endpoint | Test Duration (hr) | Species | Value | Source |
|---|---|---|---|---|
| Not Available | Not Available | Not Available | Not Available | Not Available |

**butane**

| Endpoint | Test Duration (hr) | Species | Value | Source |
|---|---|---|---|---|
| EC50(ECx) | 96h | Algae or other aquatic plants | 7.71mg/l | 2 |
| EC50 | 96h | Algae or other aquatic plants | 7.71mg/l | 2 |
| LC50 | 96h | Fish | 24.11mg/l | 2 |

**dimethyl ether**

| Endpoint | Test Duration (hr) | Species | Value | Source |
|---|---|---|---|---|
| EC50 | 48h | Crustacea | >4400mg/L | 2 |
| EC50 | 96h | Algae or other aquatic plants | 154.917mg/l | 2 |
| NOEC(ECx) | 48h | Crustacea | >4000mg/l | 1 |
| LC50 | 96h | Fish | 1783.04mg/l | 2 |

***Legend:*** ***Extracted from 1. IUCLID Toxicity Data 2. Europe ECHA Registered Substances - Ecotoxicological Information - Aquatic Toxicity 4. US EPA, Ecotox database - Aquatic Toxicity Data 5. ECETOC Aquatic Hazard Assessment Data 6. NITE (Japan) - Bioconcentration Data 7. METI (Japan) - Bioconcentration Data 8. Vendor Data***

**Continued...**

Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
Do NOT allow product to come in contact with surface waters or to intertidal areas below the mean high water mark. Do not contaminate water when cleaning equipment or disposing of equipment wash-waters.
Wastes resulting from use of the product must be disposed of on site or at approved waste sites.
Most ethers are very resistant to hydrolysis, and the rate of cleavage of the carbon-oxygen bond by abiotic processes is expected to be insignificant.
Direct photolysis will not be an important removal process since aliphatic ethers do not absorb light at wavelengths >290 nm
For n-Hexane: Log Kow: 3.17-3.94; Henry s Law Constant: 1.69 atm-m3 mol; Vapor Pressure: 150 mm Hg @ 25 C; Log Koc: 2.90 to 3.61. BOD 5, (if unstated): 2.21; COD: 0.04; ThOD: 3.52.
Atmospheric Fate: n-Hexane is not expected to be directly broken down by sunlight.
For Ketones: Ketones, unless they are alpha, beta--unsaturated ketones, can be considered as narcosis or baseline toxicity compounds.
Aquatic Fate: Hydrolysis of ketones in water is thermodynamically favourable only for low molecular weight ketones. Reactions with water are reversible with no permanent change in the structure of the ketone substrate.
For Butane (Synonym: n-Butane): Log Kow: 2.89; Koc: 450-900; Henry s Law Constant: 0.95 atm-cu m/mole, Vapor Pressure: 1820 mm Hg; BCF: 1.9.
Atmospheric Fate: Butane is expected to exist only as a gas in the ambient atmosphere. Gas-phase n-butane is degraded in the atmosphere by reaction with hydroxyl radicals; the half-life for this reaction in air is estimated to be 6.3 days, (@ 25 C).
For Propane: Koc 460. log
Kow 2.36.
Henry's Law constant of 7.07x10-1 atm-cu m/mole, derived from its vapour pressure, 7150 mm Hg, and water solubility, 62.4 mg/L.
For Acetone:
log Kow : -0.24;
Half-life (hr) air : 312-1896;
Half-life (hr) H2O surface water : 20;
Henry's atm m3 /mol : 3.67E-05
BOD 5: 0.31-1.76,46-55%
COD: 1.12-2.07
ThOD: 2.2BCF: 0.69.
Environmental Fate: The relatively long half-life allows acetone to be transported long distances from its emission source.
Atmospheric Fate: Acetone preferentially locates in the air compartment when released to the environment.
**DO NOT** discharge into sewer or waterways.

### Persistence and degradability

| Ingredient | Persistence: Water/Soil | Persistence: Air |
|---|---|---|
| acetone | LOW (Half-life = 14 days) | MEDIUM (Half-life = 116.25 days) |
| toluene | LOW (Half-life = 28 days) | LOW (Half-life = 4.33 days) |
| benzene | HIGH (Half-life = 720 days) | LOW (Half-life = 20.88 days) |
| ethylbenzene | HIGH (Half-life = 228 days) | LOW (Half-life = 3.57 days) |
| cumene | HIGH | HIGH |
| n-hexane | LOW | LOW |
| water | LOW | LOW |
| toluene | LOW (Half-life = 28 days) | LOW (Half-life = 4.33 days) |
| isoprene homopolymer | LOW | LOW |
| 3,5-bis(butyl)-4-hydroxyhydrocinnamic stearate | HIGH | HIGH |
| propane | LOW | LOW |
| butane | LOW | LOW |
| dimethyl ether | LOW | LOW |

### Bioaccumulative potential

| Ingredient | Bioaccumulation |
|---|---|
| acetone | LOW (BCF = 0.69) |
| toluene | LOW (BCF = 90) |
| benzene | HIGH (BCF = 4360) |
| ethylbenzene | LOW (BCF = 79.43) |
| cumene | LOW (BCF = 35.5) |
| n-hexane | MEDIUM (LogKOW = 3.9) |
| water | LOW (LogKOW = -1.38) |
| toluene | LOW (BCF = 90) |
| isoprene homopolymer | LOW (LogKOW = 2.5803) |
| 3,5-bis(butyl)-4-hydroxyhydrocinnamic stearate | LOW (BCF = 12) |
| propane | LOW (LogKOW = 2.36) |
| butane | LOW (LogKOW = 2.89) |
| dimethyl ether | LOW (LogKOW = 0.1) |

### Mobility in soil

| Ingredient | Mobility |
|---|---|
| acetone | HIGH (Log KOC = 1.981) |
| toluene | LOW (Log KOC = 268) |
| benzene | LOW (Log KOC = 165.5) |
| ethylbenzene | LOW (Log KOC = 517.8) |
| cumene | LOW (Log KOC = 817.2) |
| n-hexane | LOW (Log KOC = 149) |
| toluene | LOW (Log KOC = 268) |

**Continued...**

| Ingredient | Mobility |
|---|---|
| isoprene homopolymer | LOW (Log KOC = 67.7) |
| 3,5-bis(butyl)-4-hydroxyhydrocinnamic stearate | LOW (Log KOC = 734400000) |
| propane | LOW (Log KOC = 23.74) |
| butane | LOW (Log KOC = 43.79) |
| dimethyl ether | HIGH (Log KOC = 1.292) |

**Other adverse effects**

One or more ingredients within this SDS has the potential of causing ozone depletion and/or photochemical ozone creation.

## SECTION 13 Disposal considerations

**Waste treatment methods**

| | |
|---|---|
| **Product / Packaging disposal** | ▸ Recycle wherever possible or consult manufacturer for recycling options.<br>▸ Consult State Land Waste Authority for disposal.<br>▸ Bury or incinerate residue at an approved site. |

## SECTION 14 Transport information

**Labels Required**

| | |
|---|---|
| |  |
| **Marine Pollutant** |  |

Shipping container, transport vehicle placarding, and labeling may vary from the below information. This depends on the quantity shipped, the applicability of excepted quantity requirements, limited quantity requirements, and/or special provisions according to US DOT, IATA and IMDG regulations. In case of reshipment, it is the responsibility of the shipper to determine the appropriate labels and markings in accordance with applicable transport regulations.

**Land transport (DOT)**

| | |
|---|---|
| 14.1. **UN number or ID number** | 3501 |
| 14.2. **UN proper shipping name** | Chemical under pressure, flammable, n.o.s. (contains dimethyl ether, butane and propane) |
| 14.3. **Transport hazard class(es)** | Class: 2.1<br>Subsidiary Hazard: Not Applicable |
| 14.4. **Packing group** | Not Applicable |
| 14.5. **Environmental hazard** | Environmentally hazardous |
| 14.6. **Special precautions for user** | Hazard Label: 2.1<br>Special provisions: 362, T50, TP40 |

**Air transport (ICAO-IATA / DGR)**

| | |
|---|---|
| 14.1. **UN number** | 3501 |
| 14.2. **UN proper shipping name** | Chemical under pressure, flammable, n.o.s. * (contains dimethyl ether, butane and propane) |
| 14.3. **Transport hazard class(es)** | ICAO/IATA Class: 2.1<br>ICAO / IATA Subsidiary Hazard: Not Applicable<br>ERG Code: 10L |
| 14.4. **Packing group** | Not Applicable |
| 14.5. **Environmental hazard** | Environmentally hazardous |
| 14.6. **Special precautions for user** | Special provisions: A1 A187<br>Cargo Only Packing Instructions: 218<br>Cargo Only Maximum Qty / Pack: 75 kg<br>Passenger and Cargo Packing Instructions: Forbidden<br>Passenger and Cargo Maximum Qty / Pack: Forbidden<br>Passenger and Cargo Limited Quantity Packing Instructions: Forbidden<br>Passenger and Cargo Limited Maximum Qty / Pack: Forbidden |

**Sea transport (IMDG-Code / GGVSee)**

**Continued...**

| | |
|---|---|
| 14.1. **UN number** | 3501 |
| 14.2. **UN proper shipping name** | CHEMICAL UNDER PRESSURE, FLAMMABLE, N.O.S. (contains dimethyl ether, butane and propane) |
| 14.3. **Transport hazard class(es)** | IMDG Class: 2.1<br>IMDG Subsidiary Hazard: Not Applicable |
| 14.4. **Packing group** | Not Applicable |
| 14.5 **Environmental hazard** | Marine Pollutant |
| 14.6. **Special precautions for user** | EMS Number: F-D , S-U<br>Special provisions: 274 362<br>Limited Quantities: 0 |

**14.7. Maritime transport in bulk according to IMO instruments**

**14.7.1. Transport in bulk according to Annex II of MARPOL and the IBC code**

Not Applicable

**14.7.2. Transport in bulk in accordance with MARPOL Annex V and the IMSBC Code**

| Product name | Group |
|---|---|
| acetone | Not Available |
| toluene | Not Available |
| benzene | Not Available |
| ethylbenzene | Not Available |
| cumene | Not Available |
| Naphtha (petroleum), hydrotreated light | Not Available |
| n-hexane | Not Available |
| p-tert-butylphenol/ formaldehyde resin | Not Available |
| water | Not Available |
| toluene | Not Available |
| styrene/ isoprene copolymer | Not Available |
| isoprene homopolymer | Not Available |
| Solvent(n-hexane) | Not Available |
| Antioxidant(2,6-di-t-butyl-4-cresol) | Not Available |
| hydrocarbon resin, postpolymerised with maleic anhydride | Not Available |
| 3,5-bis(butyl)-4-hydroxyhydrocinnamic stearate | Not Available |
| Proprietary Rosin Phenolic Resin | Not Available |
| Proprietary Antioxidant | Not Available |
| naphthenic distillate, light, hydrotreated (mild) | Not Available |
| C.I. Solvent Red 164 | Not Available |
| propane | Not Available |
| butane | Not Available |
| dimethyl ether | Not Available |

**14.7.3. Transport in bulk in accordance with the IGC Code**

| Product name | Ship Type |
|---|---|
| acetone | Not Available |
| toluene | Not Available |
| benzene | Not Available |
| ethylbenzene | Not Available |
| cumene | Not Available |
| Naphtha (petroleum), hydrotreated light | Not Available |
| n-hexane | Not Available |
| p-tert-butylphenol/ formaldehyde resin | Not Available |
| water | Not Available |
| toluene | Not Available |
| styrene/ isoprene copolymer | Not Available |
| isoprene homopolymer | Not Available |
| Solvent(n-hexane) | Not Available |

**Continued...**

| Product name | Ship Type |
|---|---|
| Antioxidant(2,6-di-t-butyl-4-cresol) | Not Available |
| hydrocarbon resin, postpolymerised with maleic anhydride | Not Available |
| 3,5-bis(butyl)-4-hydroxyhydrocinnamic stearate | Not Available |
| Proprietary Rosin Phenolic Resin | Not Available |
| Proprietary Antioxidant | Not Available |
| naphthenic distillate, light, hydrotreated (mild) | Not Available |
| C.I. Solvent Red 164 | Not Available |
| propane | Not Available |
| butane | Not Available |
| dimethyl ether | Not Available |

## SECTION 15 Regulatory information

**Safety, health and environmental regulations / legislation specific for the substance or mixture**

**acetone is found on the following regulatory lists**

US - Massachusetts - Right To Know Listed Chemicals
US - New Jersey Right to Know - Special Health Hazard Substance List (SHHSL): Flammables
US - New Jersey Right to Know Hazardous Substances
US - Pennsylvania - Hazardous Substance List
US ATSDR Minimal Risk Levels for Hazardous Substances (MRLs)
US DOE Temporary Emergency Exposure Limits (TEELs)
US Drug Enforcement Administration (DEA) List I and II Regulated Chemicals
US EPA Integrated Risk Information System (IRIS)
US New York City Community Right-to-Know: List of Hazardous Substances
US NIOSH Recommended Exposure Limits (RELs)
US OSHA Permissible Exposure Limits (PELs) Table Z-1
US Toxic Substances Control Act (TSCA) - Chemical Substance Inventory
US TSCA Section 4/12 (b) - Sunset Dates/Status

**toluene is found on the following regulatory lists**

Chemical Footprint Project - Chemicals of High Concern List
International Agency for Research on Cancer (IARC) - Agents Classified by the IARC Monographs - Not Classified as Carcinogenic
US - California Hazardous Air Pollutants Identified as Toxic Air Contaminants
US - California Proposition 65 - Maximum Allowable Dose Levels (MADLs) for Chemicals Causing Reproductive Toxicity
US - California Proposition 65 - Reproductive Toxicity
US - California Safe Drinking Water and Toxic Enforcement Act of 1986 - Proposition 65 List
US - Massachusetts - Right To Know Listed Chemicals
US - New Jersey Right to Know Hazardous Substances
US - Pennsylvania - Hazardous Substance List
US ATSDR Minimal Risk Levels for Hazardous Substances (MRLs)
US Clean Air Act - Hazardous Air Pollutants
US CWA (Clean Water Act) - List of Hazardous Substances
US CWA (Clean Water Act) - Priority Pollutants
US CWA (Clean Water Act) - Toxic Pollutants
US DOE Temporary Emergency Exposure Limits (TEELs)
US Drug Enforcement Administration (DEA) List I and II Regulated Chemicals
US EPA Integrated Risk Information System (IRIS)
US EPCRA Section 313 Chemical List
US New York City Community Right-to-Know: List of Hazardous Substances
US NIOSH Recommended Exposure Limits (RELs)
US OSHA Permissible Exposure Limits (PELs) Table Z-2
US Toxic Substances Control Act (TSCA) - Chemical Substance Inventory

**benzene is found on the following regulatory lists**

Chemical Footprint Project - Chemicals of High Concern List
International Agency for Research on Cancer (IARC) - Agents Classified by the IARC Monographs
International Agency for Research on Cancer (IARC) - Agents Classified by the IARC Monographs - Group 1: Carcinogenic to humans
US - California Hazardous Air Pollutants Identified as Toxic Air Contaminants
US - California Proposition 65 - Carcinogens
US - California Proposition 65 - Maximum Allowable Dose Levels (MADLs) for Chemicals Causing Reproductive Toxicity
US - California Proposition 65 - No Significant Risk Levels (NSRLs) for Carcinogens
US - California Proposition 65 - Reproductive Toxicity
US - California Safe Drinking Water and Toxic Enforcement Act of 1986 - Proposition 65 List
US - California Substances Identified As Toxic Air Contaminants
US - Massachusetts - Right To Know Listed Chemicals
US - New Jersey Right to Know - Special Health Hazard Substance List (SHHSL): Carcinogens
US - New Jersey Right to Know - Special Health Hazard Substance List (SHHSL): Flammables
US - New Jersey Right to Know - Special Health Hazard Substance List (SHHSL): Mutagens
US - New Jersey Right to Know Hazardous Substances
US - Pennsylvania - Hazardous Substance List
US ATSDR Minimal Risk Levels for Hazardous Substances (MRLs)

**Continued...**

US Clean Air Act - Hazardous Air Pollutants
US CWA (Clean Water Act) - List of Hazardous Substances
US CWA (Clean Water Act) - Priority Pollutants
US CWA (Clean Water Act) - Toxic Pollutants
US DOE Temporary Emergency Exposure Limits (TEELs)
US EPA Carcinogens Listing
US EPA Drinking Water Treatability Database
US EPA Integrated Risk Information System (IRIS)
US EPA IRIS Carcinogens
US EPCRA Section 313 Chemical List
US National Toxicology Program (NTP) 15th Report Part A Known to be Human Carcinogens
US New York City Community Right-to-Know: List of Hazardous Substances
US NIOSH Recommended Exposure Limits (RELs)
US OSHA Carcinogens Listing
US OSHA Permissible Exposure Limits (PELs) Table Z-1
US OSHA Permissible Exposure Limits (PELs) Table Z-2
US Toxic Substances Control Act (TSCA) - Chemical Substance Inventory

**ethylbenzene is found on the following regulatory lists**

Chemical Footprint Project - Chemicals of High Concern List
International Agency for Research on Cancer (IARC) - Agents Classified by the IARC Monographs
International Agency for Research on Cancer (IARC) - Agents Classified by the IARC Monographs - Group 2B: Possibly carcinogenic to humans
US - California Hazardous Air Pollutants Identified as Toxic Air Contaminants
US - California Proposition 65 - Carcinogens
US - California Proposition 65 - No Significant Risk Levels (NSRLs) for Carcinogens
US - California Safe Drinking Water and Toxic Enforcement Act of 1986 - Proposition 65 List
US - Massachusetts - Right To Know Listed Chemicals
US - New Jersey Right to Know - Special Health Hazard Substance List (SHHSL): Carcinogens
US - New Jersey Right to Know - Special Health Hazard Substance List (SHHSL): Flammables
US - New Jersey Right to Know Hazardous Substances
US - Pennsylvania - Hazardous Substance List
US ATSDR Minimal Risk Levels for Hazardous Substances (MRLs)
US Clean Air Act - Hazardous Air Pollutants
US CWA (Clean Water Act) - List of Hazardous Substances
US CWA (Clean Water Act) - Priority Pollutants
US CWA (Clean Water Act) - Toxic Pollutants
US DOE Temporary Emergency Exposure Limits (TEELs)
US EPA Integrated Risk Information System (IRIS)
US EPCRA Section 313 Chemical List
US New York City Community Right-to-Know: List of Hazardous Substances
US NIOSH Recommended Exposure Limits (RELs)
US OSHA Permissible Exposure Limits (PELs) Table Z-1
US Toxic Substances Control Act (TSCA) - Chemical Substance Inventory

**cumene is found on the following regulatory lists**

Chemical Footprint Project - Chemicals of High Concern List
International Agency for Research on Cancer (IARC) - Agents Classified by the IARC Monographs
International Agency for Research on Cancer (IARC) - Agents Classified by the IARC Monographs - Group 2B: Possibly carcinogenic to humans
US - California Hazardous Air Pollutants Identified as Toxic Air Contaminants
US - California Proposition 65 - Carcinogens
US - California Safe Drinking Water and Toxic Enforcement Act of 1986 - Proposition 65 List
US - Massachusetts - Right To Know Listed Chemicals
US - New Jersey Right to Know - Special Health Hazard Substance List (SHHSL): Flammables
US - New Jersey Right to Know Hazardous Substances
US - Pennsylvania - Hazardous Substance List
US Clean Air Act - Hazardous Air Pollutants
US DOE Temporary Emergency Exposure Limits (TEELs)
US EPA Integrated Risk Information System (IRIS)
US EPCRA Section 313 Chemical List
US National Toxicology Program (NTP) 15th Report Part B. Reasonably Anticipated to be a Human Carcinogen
US New York City Community Right-to-Know: List of Hazardous Substances
US NIOSH Recommended Exposure Limits (RELs)
US OSHA Permissible Exposure Limits (PELs) Table Z-1
US Toxic Substances Control Act (TSCA) - Chemical Substance Inventory
US TSCA Section 4/12 (b) - Sunset Dates/Status

**Naphtha (petroleum), hydrotreated light is found on the following regulatory lists**

Chemical Footprint Project - Chemicals of High Concern List
International Agency for Research on Cancer (IARC) - Agents Classified by the IARC Monographs - Not Classified as Carcinogenic
US DOE Temporary Emergency Exposure Limits (TEELs)
US Toxic Substances Control Act (TSCA) - Chemical Substance Inventory

**n-hexane is found on the following regulatory lists**

Chemical Footprint Project - Chemicals of High Concern List
US - California Hazardous Air Pollutants Identified as Toxic Air Contaminants
US - California Proposition 65 - Maximum Allowable Dose Levels (MADLs) for Chemicals Causing Reproductive Toxicity
US - California Proposition 65 - Reproductive Toxicity
US - California Safe Drinking Water and Toxic Enforcement Act of 1986 - Proposition 65 List
US - Massachusetts - Right To Know Listed Chemicals
US - New Jersey Right to Know - Special Health Hazard Substance List (SHHSL): Flammables
US - New Jersey Right to Know Hazardous Substances
US - Pennsylvania - Hazardous Substance List

**Continued...**

US ATSDR Minimal Risk Levels for Hazardous Substances (MRLs)
US Clean Air Act - Hazardous Air Pollutants
US DOE Temporary Emergency Exposure Limits (TEELs)
US EPA Integrated Risk Information System (IRIS)
US EPCRA Section 313 Chemical List
US New York City Community Right-to-Know: List of Hazardous Substances
US NIOSH Recommended Exposure Limits (RELs)
US OSHA Permissible Exposure Limits (PELs) Table Z-1
US Toxic Substances Control Act (TSCA) - Chemical Substance Inventory

**p-tert-butylphenol/ formaldehyde resin is found on the following regulatory lists**

International WHO List of Proposed Occupational Exposure Limit (OEL) Values for Manufactured Nanomaterials (MNMS)
US - Alaska Air Quality Control - Concentrations Triggering an Air Quality Episode for Air Pollutants Other Than PM-2.5
US NIOSH Recommended Exposure Limits (RELs)
US OSHA Permissible Exposure Limits (PELs) Table Z-1
US OSHA Permissible Exposure Limits (PELs) Table Z-3
US Toxic Substances Control Act (TSCA) - Chemical Substance Inventory

**water is found on the following regulatory lists**

US Toxic Substances Control Act (TSCA) - Chemical Substance Inventory

**toluene is found on the following regulatory lists**

Chemical Footprint Project - Chemicals of High Concern List
International Agency for Research on Cancer (IARC) - Agents Classified by the IARC Monographs - Not Classified as Carcinogenic
US - California Hazardous Air Pollutants Identified as Toxic Air Contaminants
US - California Proposition 65 - Maximum Allowable Dose Levels (MADLs) for Chemicals Causing Reproductive Toxicity
US - California Proposition 65 - Reproductive Toxicity
US - California Safe Drinking Water and Toxic Enforcement Act of 1986 - Proposition 65 List
US - Massachusetts - Right To Know Listed Chemicals
US - New Jersey Right to Know Hazardous Substances
US - Pennsylvania - Hazardous Substance List
US ATSDR Minimal Risk Levels for Hazardous Substances (MRLs)
US Clean Air Act - Hazardous Air Pollutants
US CWA (Clean Water Act) - List of Hazardous Substances
US CWA (Clean Water Act) - Priority Pollutants
US CWA (Clean Water Act) - Toxic Pollutants
US DOE Temporary Emergency Exposure Limits (TEELs)
US Drug Enforcement Administration (DEA) List I and II Regulated Chemicals
US EPA Integrated Risk Information System (IRIS)
US EPCRA Section 313 Chemical List
US New York City Community Right-to-Know: List of Hazardous Substances
US NIOSH Recommended Exposure Limits (RELs)
US OSHA Permissible Exposure Limits (PELs) Table Z-2
US Toxic Substances Control Act (TSCA) - Chemical Substance Inventory

**styrene/ isoprene copolymer is found on the following regulatory lists**

US Toxic Substances Control Act (TSCA) - Chemical Substance Inventory

**isoprene homopolymer is found on the following regulatory lists**

International WHO List of Proposed Occupational Exposure Limit (OEL) Values for Manufactured Nanomaterials (MNMS)
US - Alaska Air Quality Control - Concentrations Triggering an Air Quality Episode for Air Pollutants Other Than PM-2.5
US NIOSH Recommended Exposure Limits (RELs)
US OSHA Permissible Exposure Limits (PELs) Table Z-1
US OSHA Permissible Exposure Limits (PELs) Table Z-3
US Toxic Substances Control Act (TSCA) - Chemical Substance Inventory

**Solvent(n-hexane) is found on the following regulatory lists**

Not Applicable

**Antioxidant(2,6-di-t-butyl-4-cresol) is found on the following regulatory lists**

Not Applicable

**hydrocarbon resin, postpolymerised with maleic anhydride is found on the following regulatory lists**

International WHO List of Proposed Occupational Exposure Limit (OEL) Values for Manufactured Nanomaterials (MNMS)
US - Alaska Air Quality Control - Concentrations Triggering an Air Quality Episode for Air Pollutants Other Than PM-2.5
US NIOSH Recommended Exposure Limits (RELs)
US OSHA Permissible Exposure Limits (PELs) Table Z-1
US OSHA Permissible Exposure Limits (PELs) Table Z-3
US Toxic Substances Control Act (TSCA) - Chemical Substance Inventory

**3,5-bis(butyl)-4-hydroxyhydrocinnamic stearate is found on the following regulatory lists**

International WHO List of Proposed Occupational Exposure Limit (OEL) Values for Manufactured Nanomaterials (MNMS)
US - Alaska Air Quality Control - Concentrations Triggering an Air Quality Episode for Air Pollutants Other Than PM-2.5
US NIOSH Recommended Exposure Limits (RELs)
US OSHA Permissible Exposure Limits (PELs) Table Z-1
US OSHA Permissible Exposure Limits (PELs) Table Z-3
US Toxic Substances Control Act (TSCA) - Chemical Substance Inventory

**Proprietary Rosin Phenolic Resin is found on the following regulatory lists**

Not Applicable

**Proprietary Antioxidant is found on the following regulatory lists**

Not Applicable

**Continued...**

**naphthenic distillate, light, hydrotreated (mild) is found on the following regulatory lists**

Chemical Footprint Project - Chemicals of High Concern List
International Agency for Research on Cancer (IARC) - Agents Classified by the IARC Monographs
International Agency for Research on Cancer (IARC) - Agents Classified by the IARC Monographs - Group 1: Carcinogenic to humans
International Agency for Research on Cancer (IARC) - Agents Classified by the IARC Monographs - Not Classified as Carcinogenic
US - Massachusetts - Right To Know Listed Chemicals
US - Pennsylvania - Hazardous Substance List
US DOE Temporary Emergency Exposure Limits (TEELs)
US National Toxicology Program (NTP) 15th Report Part A Known to be Human Carcinogens
US OSHA Permissible Exposure Limits (PELs) Table Z-1
US Toxic Substances Control Act (TSCA) - Chemical Substance Inventory

**C.I. Solvent Red 164 is found on the following regulatory lists**

International WHO List of Proposed Occupational Exposure Limit (OEL) Values for Manufactured Nanomaterials (MNMS)
US - Alaska Air Quality Control - Concentrations Triggering an Air Quality Episode for Air Pollutants Other Than PM-2.5
US NIOSH Recommended Exposure Limits (RELs)
US OSHA Permissible Exposure Limits (PELs) Table Z-1
US OSHA Permissible Exposure Limits (PELs) Table Z-3
US Toxic Substances Control Act (TSCA) - Chemical Substance Inventory

**propane is found on the following regulatory lists**

US - Massachusetts - Right To Know Listed Chemicals
US - New Jersey Right to Know - Special Health Hazard Substance List (SHHSL): Flammables
US - New Jersey Right to Know Hazardous Substances
US - Pennsylvania - Hazardous Substance List
US Department of Homeland Security (DHS) - Chemical Facility Anti-Terrorism Standards (CFATS) - Chemicals of Interest
US DOE Temporary Emergency Exposure Limits (TEELs)
US New York City Community Right-to-Know: List of Hazardous Substances
US NIOSH Recommended Exposure Limits (RELs)
US OSHA Permissible Exposure Limits (PELs) Table Z-1
US Toxic Substances Control Act (TSCA) - Chemical Substance Inventory

**butane is found on the following regulatory lists**

Chemical Footprint Project - Chemicals of High Concern List
US - Massachusetts - Right To Know Listed Chemicals
US - New Jersey Right to Know - Special Health Hazard Substance List (SHHSL): Flammables
US - New Jersey Right to Know Hazardous Substances
US - Pennsylvania - Hazardous Substance List
US Department of Homeland Security (DHS) - Chemical Facility Anti-Terrorism Standards (CFATS) - Chemicals of Interest
US DOE Temporary Emergency Exposure Limits (TEELs)
US New York City Community Right-to-Know: List of Hazardous Substances
US NIOSH Recommended Exposure Limits (RELs)
US Toxic Substances Control Act (TSCA) - Chemical Substance Inventory

**dimethyl ether is found on the following regulatory lists**

US - Massachusetts - Right To Know Listed Chemicals
US - New Jersey Right to Know - Special Health Hazard Substance List (SHHSL): Flammables
US - New Jersey Right to Know Hazardous Substances
US - Pennsylvania - Hazardous Substance List
US AIHA Workplace Environmental Exposure Levels (WEELs)
US Department of Homeland Security (DHS) - Chemical Facility Anti-Terrorism Standards (CFATS) - Chemicals of Interest
US DOE Temporary Emergency Exposure Limits (TEELs)
US New York City Community Right-to-Know: List of Hazardous Substances
US Toxic Substances Control Act (TSCA) - Chemical Substance Inventory
US Toxicology Excellence for Risk Assessment (TERA) Workplace Environmental Exposure Levels (WEEL)

## Additional Regulatory Information

Not Applicable

## Federal Regulations

### Superfund Amendments and Reauthorization Act of 1986 (SARA)

**Section 311/312 hazard categories**

| | |
|---|---|
| Flammable (Gases, Aerosols, Liquids, or Solids) | No |
| Gas under pressure | Yes |
| Explosive | No |
| Self-heating | No |
| Pyrophoric (Liquid or Solid) | No |
| Pyrophoric Gas | No |
| Corrosive to metal | No |
| Oxidizer (Liquid, Solid or Gas) | No |
| Organic Peroxide | No |
| Self-reactive | No |
| In contact with water emits flammable gas | No |
| Combustible Dust | No |
| Carcinogenicity | No |
| Acute toxicity (any route of exposure) | No |

**Continued...**

| | |
|---|---|
| Reproductive toxicity | Yes |
| Skin Corrosion or Irritation | Yes |
| Respiratory or Skin Sensitization | No |
| Serious eye damage or eye irritation | Yes |
| Specific target organ toxicity (single or repeated exposure) | Yes |
| Aspiration Hazard | No |
| Germ cell mutagenicity | No |
| Simple Asphyxiant | Yes |
| Hazards Not Otherwise Classified | No |

**US. EPA CERCLA Hazardous Substances and Reportable Quantities (40 CFR 302.4)**

| Name | Reportable Quantity in Pounds (lb) | Reportable Quantity in kg |
|---|---|---|
| acetone | 5000 | 2270 |
| toluene | 1000 | 454 |
| benzene | 10 | 4.54 |
| ethylbenzene | 1000 | 454 |
| cumene | 5000 | 2270 |
| n-hexane | 5000 | 2270 |
| toluene | 1000 | 454 |

**US. EPCRA Section 313 Toxic Release Inventory (TRI) (40 CFR 372)**

This product contains the following EPCRA section 313 chemicals subject to the reporting requirements of section 313 of the Emergency Planning and Community Right-To-Know-Act of 1986 (40 CFR 372):

| CAS No | %[weight] | Name |
|---|---|---|
| 108-88-3 | <0.025197 | toluene |
| 71-43-2 | <0.000252 | benzene |
| 100-41-4 | 0.000266-0.000311 | ethylbenzene |
| 98-82-8 | <0.000252 | cumene |
| 110-54-3 | <0.025197 | n-hexane |
| 108-88-3 | 3.110822 | toluene |

***This information must be included in all SDSs that are copied and distributed for this material.***

## Additional Federal Regulatory Information

Not Applicable

## State Regulations

**US. California Proposition 65**

**WARNING:** This product can expose you to chemicals including **benzene, ethylbenzene, cumene**, which are known to the State of California to cause cancer, and **toluene, benzene, n-hexane, toluene**, which are known to the State of California to cause birth defects or other reproductive harm. For more information, go to www.P65Warnings.ca.gov

## Additional State Regulatory Information

Not Applicable

## National Inventory Status

| National Inventory | Status |
|---|---|
| Australia - AIIC / Australia Non-Industrial Use | Yes |
| Canada - DSL | Yes |
| Canada - NDSL | No (acetone; toluene; benzene; ethylbenzene; cumene; Naphtha (petroleum), hydrotreated light; n-hexane; p-tert-butylphenol/ formaldehyde resin; water; toluene; styrene/ isoprene copolymer; isoprene homopolymer; hydrocarbon resin, postpolymerised with maleic anhydride; 3,5-bis(butyl)-4-hydroxyhydrocinnamic stearate; naphthenic distillate, light, hydrotreated (mild); C.I. Solvent Red 164; propane; butane; dimethyl ether) |
| China - IECSC | Yes |
| Europe - EINEC / ELINCS / NLP | No (styrene/ isoprene copolymer; isoprene homopolymer) |
| Japan - ENCS | No (Naphtha (petroleum), hydrotreated light; C.I. Solvent Red 164) |
| Korea - KECI | Yes |
| New Zealand - NZIoC | Yes |
| Philippines - PICCS | Yes |
| USA - TSCA | All chemical substances in this product have been designated as TSCA Inventory 'Active' |
| Taiwan - TCSI | Yes |
| Mexico - INSQ | No (p-tert-butylphenol/ formaldehyde resin; styrene/ isoprene copolymer; naphthenic distillate, light, hydrotreated (mild); C.I. Solvent Red 164) |
| Vietnam - NCI | Yes |
| Russia - FBEPH | No (C.I. Solvent Red 164) |
| ***Legend:*** | ***Yes = All CAS declared ingredients are on the inventory***<br>***No = One or more of the CAS listed ingredients are not on the inventory. These ingredients may be exempt or will require registration.*** |

**Continued...**

## SECTION 16 Other information

| | |
|---|---|
| **Revision Date** | 06/18/2025 |
| **Initial Date** | 03/01/2025 |

**CONTACT POINT**

**SDS Version Summary**

| Version | Date of Update | Sections Updated |
|---|---|---|
| 4.6 | 06/18/2025 | Toxicological information - Acute Health (eye), Toxicological information - Acute Health (inhaled), Toxicological information - Acute Health (swallowed), Toxicological information - Chronic Health, Hazards identification - Classification, Disposal considerations - Disposal, Exposure controls / personal protection - Engineering Control, Ecological Information - Environmental, Exposure controls / personal protection - Exposure Standard, Firefighting measures - Fire Fighter (extinguishing media), Firefighting measures - Fire Fighter (fire/explosion hazard), Firefighting measures - Fire Fighter (fire fighting), First Aid measures - First Aid (eye), First Aid measures - First Aid (inhaled), First Aid measures - First Aid (skin), First Aid measures - First Aid (swallowed), Handling and storage - Handling Procedure, Composition / information on ingredients - Ingredients, Stability and reactivity - Instability Condition, Exposure controls / personal protection - Personal Protection (other), Exposure controls / personal protection - Personal Protection (Respirator), Exposure controls / personal protection - Personal Protection (hands/feet), Accidental release measures - Spills (major), Accidental release measures - Spills (minor), Handling and storage - Storage (storage incompatibility), Handling and storage - Storage (storage requirement), Handling and storage - Storage (suitable container), Transport information - Transport |

**Other information**

The SDS is a Hazard Communication tool and should be used to assist in the Risk Assessment. Many factors determine whether the reported Hazards are Risks in the workplace or other settings. Risks may be determined by reference to Exposures Scenarios.

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**end of SDS**