# 2702 AUTO TRANS RESTORER 250ml

## LIQUI MOLY Australia Pty Limited

Chemwatch Hazard Alert Code: **2**

Chemwatch: **16-51694**
Version No: **3.1.18.11**
Safety Data Sheet according to WHS Regulations (Hazardous Chemicals) Amendment 2020 and ADG requirements

Issue Date: **01/11/2019**
Print Date: **20/09/2021**
S.GHS.AUS.EN

## SECTION 1 Identification of the substance / mixture and of the company / undertaking

### Product Identifier

| | |
|---|---|
| **Product name** | 2702 AUTO TRANS RESTORER 250ml |
| **Chemical Name** | Not Applicable |
| **Synonyms** | Not Available |
| **Chemical formula** | Not Applicable |
| **Other means of identification** | Not Available |

### Relevant identified uses of the substance or mixture and uses advised against

| | |
|---|---|
| **Relevant identified uses** | Additives. |

### Details of the supplier of the safety data sheet

| | |
|---|---|
| **Registered company name** | **LIQUI MOLY Australia Pty Limited** |
| **Address** | Suite 106, 26-32 Pirrama Road Pyrmont NSW 2009 Australia |
| **Telephone** | 1300 318 961 |
| **Fax** | Not Available |
| **Website** | www.liqui-moly.com.au |
| **Email** | Not Available |

### Emergency telephone number

| | |
|---|---|
| **Association / Organisation** | **LIQUI MOLY Australia Pty Limited** |
| **Emergency telephone numbers** | 13 11 26 (Poisons Information Centre) |
| **Other emergency telephone numbers** | Not Available |

## SECTION 2 Hazards identification

### Classification of the substance or mixture

**HAZARDOUS CHEMICAL. NON-DANGEROUS GOODS. According to the WHS Regulations and the ADG Code.**

**ChemWatch Hazard Ratings**

| | Min | Max |
|---|---|---|
| Flammability | 1 | |
| Toxicity | 0 | |
| Body Contact | 1 | |
| Reactivity | 1 | |
| Chronic | 2 | |

0 = Minimum
1 = Low
2 = Moderate
3 = High
4 = Extreme

| | |
|---|---|
| **Poisons Schedule** | Not Applicable |
| **Classification [1]** | Hazardous to the Aquatic Environment Long-Term Hazard Category 3, Sensitisation (Skin) Category 1 |
| ***Legend:*** | *1. Classified by Chemwatch; 2. Classification drawn from HCIS; 3. Classification drawn from Regulation (EU) No 1272/2008 - Annex VI* |

### Label elements

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

**Page 1 continued...**

### Hazard statement(s)

| | |
|---|---|
| **H412** | Harmful to aquatic life with long lasting effects. |
| **H317** | May cause an allergic skin reaction. |

### Precautionary statement(s) Prevention

| | |
|---|---|
| **P280** | Wear protective gloves and protective clothing. |
| **P261** | Avoid breathing mist/vapours/spray. |
| **P273** | Avoid release to the environment. |
| **P272** | Contaminated work clothing should not be allowed out of the workplace. |

### Precautionary statement(s) Response

| | |
|---|---|
| **P302+P352** | IF ON SKIN: Wash with plenty of water and soap. |
| **P333+P313** | If skin irritation or rash occurs: Get medical advice/attention. |
| **P362+P364** | Take off contaminated clothing and wash it before reuse. |

### Precautionary statement(s) Storage

Not Applicable

### 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 |
|---|---|---|
| 72623-87-1. | 20-<40 | lubricating oils, petroleum C20-50, hydrotreated neutral |
| 64742-56-9. | 10-<20 | paraffinic distillate, light, solvent-dewaxed (severe) |
| Not Available | 5-<10 | methacrylate copolymer. |
| 398141-87-2 | 5-<10 | 3-(C9-11-isoalkyloxy)-tetrahydrothiophene 1,1-dioxide |
| 125643-61-0 | 1-<10 | C7-9 branched alkyl-3,5-di-tert-butyl-4-hydroxyhydrocinnamate |
| 61791-44-4 | 0.1-<1 | tallow alkyl-diethanolamine derivatives |
| 73984-93-7 | 0.01-<1 | 5-(tert-dodecyldithio)-1,3,4-thiadiazole-2(3H)-thione |
| 61791-44-4 | 0.01-<0.25 | tallow alkyl-diethanolamine derivatives |
| 218141-16-3 | 0.01-<0.1 | 3-isodecyloxypropylamine |
| ***Legend:*** | *1. Classified by Chemwatch; 2. Classification drawn from HCIS; 3. Classification drawn from Regulation (EU) No 1272/2008 - Annex VI; 4. Classification drawn from C&L; * EU IOELVs available* | |

## SECTION 4 First aid measures

### Description of first aid measures

| | |
|---|---|
| **Eye Contact** | If this product comes in contact with eyes:<br>▸ Wash out immediately with water.<br>▸ If irritation continues, 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. |
| **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. |

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

Treat symptomatically.

- Heavy and persistent skin contamination over many years may lead to dysplastic changes. Pre-existing skin disorders may be aggravated by exposure to this product.
- In general, emesis induction is unnecessary with high viscosity, low volatility products, i.e. most oils and greases.
- High pressure accidental injection through the skin should be assessed for possible incision, irrigation and/or debridement.

**NOTE:** Injuries may not seem serious at first, but within a few hours tissue may become swollen, discoloured and extremely painful with extensive subcutaneous necrosis. Product may be forced through considerable distances along tissue planes.

## SECTION 5 Firefighting measures

### Extinguishing media

- Foam.

**Continued...**

- Dry chemical powder.
- BCF (where regulations permit).
- Carbon dioxide.
- Water spray or fog - Large fires only.

### 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 |

### Advice for firefighters

| | |
|---|---|
| **Fire Fighting** | ‣ Alert Fire Brigade and tell them location and nature of hazard.<br>‣ Wear full body protective clothing with breathing apparatus.<br>‣ Prevent, by any means available, spillage from entering drains or water course.<br>‣ Use water delivered as a fine spray to control fire and cool adjacent area.<br>‣ Avoid spraying water onto liquid pools.<br>‣ **DO NOT** approach containers suspected to be hot.<br>‣ Cool fire exposed containers with water spray from a protected location.<br>‣ If safe to do so, remove containers from path of fire. |
| **Fire/Explosion Hazard** | ‣ Combustible.<br>‣ Slight fire hazard when exposed to heat or flame.<br>‣ Heating may cause expansion or decomposition leading to violent rupture of containers.<br>‣ On combustion, may emit toxic fumes of carbon monoxide (CO).<br>‣ May emit acrid smoke.<br>‣ Mists containing combustible materials may be explosive.<br>Combustion products include:<br>carbon dioxide ($CO_2$)<br>sulfur oxides (SOx)<br>other pyrolysis products typical of burning organic material.<br>May emit corrosive fumes.<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. |
| **HAZCHEM** | Not Applicable |

## 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** | Slippery when spilt.<br>‣ Remove all ignition sources.<br>‣ Clean up all spills immediately.<br>‣ Avoid breathing vapours and contact with skin and eyes.<br>‣ Control personal contact with the substance, by using protective equipment.<br>‣ Contain and absorb spill with sand, earth, inert material or vermiculite.<br>‣ Wipe up.<br>‣ Place in a suitable, labelled container for waste disposal. |
| **Major Spills** | Slippery when spilt.<br>Moderate hazard.<br>‣ Clear area of personnel and move upwind.<br>‣ Alert Fire Brigade and tell them location and nature of hazard.<br>‣ Wear breathing apparatus plus protective gloves.<br>‣ Prevent, by any means available, spillage from entering drains or water course.<br>‣ No smoking, naked lights or ignition sources.<br>‣ Increase ventilation.<br>‣ Stop leak if safe to do so.<br>‣ Contain spill with sand, earth or vermiculite.<br>‣ Collect recoverable product into labelled containers for recycling.<br>‣ Absorb remaining product with sand, earth or vermiculite.<br>‣ Collect solid residues and seal in labelled drums for disposal.<br>‣ Wash area and prevent runoff into drains.<br>‣ If contamination of drains or waterways occurs, advise emergency services. |

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

## SECTION 7 Handling and storage

### Precautions for safe handling

| | |
|---|---|
| **Safe handling** | ‣ **DO NOT** allow clothing wet with material to stay in contact with skin<br>‣ Avoid all personal contact, including inhalation.<br>‣ Wear protective clothing when risk of exposure occurs.<br>‣ Use in a well-ventilated area.<br>‣ Prevent concentration in hollows and sumps.<br>‣ **DO NOT** enter confined spaces until atmosphere has been checked.<br>‣ Avoid smoking, naked lights or ignition sources.<br>‣ Avoid contact with incompatible materials.<br>‣ When handling, **DO NOT** eat, drink or smoke.<br>‣ Keep containers securely sealed when not in use. |

**Continued...**

| | |
|---|---|
| | ▸ Avoid physical damage to containers.<br>▸ Always wash hands with soap and water after handling.<br>▸ Work clothes should be laundered separately.<br>▸ Use good occupational work practice.<br>▸ Observe manufacturer's storage and handling recommendations contained within this SDS.<br>▸ Atmosphere should be regularly checked against established exposure standards to ensure safe working conditions. |
| **Other information** | ▸ Store in original containers.<br>▸ Keep containers securely sealed.<br>▸ No smoking, naked lights or ignition sources.<br>▸ Store in a cool, dry, well-ventilated area.<br>▸ Store away from incompatible materials and foodstuff containers.<br>▸ Protect containers against physical damage and check regularly for leaks.<br>▸ Observe manufacturer's storage and handling recommendations contained within this SDS. |

### Conditions for safe storage, including any incompatibilities

| | |
|---|---|
| **Suitable container** | ▸ Metal can or drum<br>▸ Packaging as recommended by manufacturer.<br>▸ Check all containers are clearly labelled and free from leaks. |
| **Storage incompatibility** | **CARE**: Water in contact with heated material may cause foaming or a steam explosion with possible severe burns from wide scattering of hot material. Resultant overflow of containers may result in fire.<br>▸ Avoid reaction with oxidising agents |

## SECTION 8 Exposure controls / personal protection

### Control parameters

**Occupational Exposure Limits (OEL)**

**INGREDIENT DATA**

| Source | Ingredient | Material name | TWA | STEL | Peak | Notes |
|---|---|---|---|---|---|---|
| Australia Exposure Standards | lubricating oils, petroleum C20-50, hydrotreated neutral | Oil mist, refined mineral | 5 mg/m3 | Not Available | Not Available | Not Available |
| Australia Exposure Standards | paraffinic distillate, light, solvent-dewaxed (severe) | Oil mist, refined mineral | 5 mg/m3 | Not Available | Not Available | Not Available |

**Emergency Limits**

| Ingredient | TEEL-1 | TEEL-2 | TEEL-3 |
|---|---|---|---|
| lubricating oils, petroleum C20-50, hydrotreated neutral | 140 mg/m3 | 1,500 mg/m3 | 8,900 mg/m3 |
| paraffinic distillate, light, solvent-dewaxed (severe) | 140 mg/m3 | 1,500 mg/m3 | 8,900 mg/m3 |

| Ingredient | Original IDLH | Revised IDLH |
|---|---|---|
| lubricating oils, petroleum C20-50, hydrotreated neutral | 2,500 mg/m3 | Not Available |
| paraffinic distillate, light, solvent-dewaxed (severe) | 2,500 mg/m3 | Not Available |
| 3-(C9-11-isoalkyloxy)-tetrahydrothiophene 1,1-dioxide | Not Available | Not Available |
| C7-9 branched alkyl-3,5-di-tert-butyl-4-hydroxyhydrocinnamate | Not Available | Not Available |
| tallow alkyl-diethanolamine derivatives | Not Available | Not Available |
| 5-(tert-dodecyldithio)-1,3,4-thiadiazole-2(3H)-thione | Not Available | Not Available |
| tallow alkyl-diethanolamine derivatives | Not Available | Not Available |
| 3-isodecyloxypropylamine | Not Available | Not Available |

**Occupational Exposure Banding**

| Ingredient | Occupational Exposure Band Rating | Occupational Exposure Band Limit |
|---|---|---|
| tallow alkyl-diethanolamine derivatives | E | ≤ 0.1 ppm |
| 5-(tert-dodecyldithio)-1,3,4-thiadiazole-2(3H)-thione | D | > 0.01 to ≤ 0.1 mg/m³ |
| tallow alkyl-diethanolamine derivatives | E | ≤ 0.1 ppm |
| 3-isodecyloxypropylamine | C | > 1 to ≤ 10 parts per million (ppm) |
| ***Notes:*** | *Occupational exposure banding is a process of assigning chemicals into specific categories or bands based on a chemical's potency and the adverse health outcomes associated with exposure. The output of this process is an occupational exposure band (OEB), which corresponds to a range of exposure concentrations that are expected to protect worker health.* | |

### Exposure controls

**Continued...**

**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.
The basic types of engineering controls are:
Process controls which involve changing the way a job activity or process is done to reduce the risk.
Enclosure and/or isolation of emission source which keeps a selected hazard "physically" away from the worker and ventilation that strategically "adds" and "removes" air in the work environment. Ventilation can remove or dilute an air contaminant if designed properly. The design of a ventilation system must match the particular process and chemical or contaminant in use.
Employers may need to use multiple types of controls to prevent employee overexposure.

General exhaust is adequate under normal operating conditions. If risk of overexposure exists, wear SAA approved respirator. Correct fit is essential to obtain adequate protection. Provide adequate ventilation in warehouse or closed storage areas. Air contaminants generated in the workplace possess varying "escape" velocities which, in turn, determine the "capture velocities" of fresh circulating air required to effectively remove the contaminant.

| Type of Contaminant: | Air Speed: |
|---|---|
| solvent, vapours, degreasing etc., evaporating from tank (in still air) | 0.25-0.5 m/s (50-100 f/min) |
| aerosols, fumes from pouring operations, intermittent container filling, low speed conveyer transfers, welding, spray drift, plating acid fumes, pickling (released at low velocity into zone of active generation) | 0.5-1 m/s (100-200 f/min.) |
| direct spray, spray painting in shallow booths, drum filling, conveyer loading, crusher dusts, gas discharge (active generation into zone of rapid air motion) | 1-2.5 m/s (200-500 f/min) |
| grinding, abrasive blasting, tumbling, high speed wheel generated dusts (released at high initial velocity into zone of very high rapid air motion). | 2.5-10 m/s (500-2000 f/min.) |

Within each range the appropriate value depends on:

| Lower end of the range | Upper end of the range |
|---|---|
| 1: Room air currents minimal or favourable to capture | 1: Disturbing room air currents |
| 2: Contaminants of low toxicity or of nuisance value only | 2: Contaminants of high toxicity |
| 3: Intermittent, low production. | 3: High production, heavy use |
| 4: Large hood or large air mass in motion | 4: Small hood - local control only |

Simple theory shows that air velocity falls rapidly with distance away from the opening of a simple extraction pipe. Velocity generally decreases with the square of distance from the extraction point (in simple cases). Therefore the air speed at the extraction point should be adjusted, accordingly, after reference to distance from the contaminating source. The air velocity at the extraction fan, for example, should be a minimum of 1-2 m/s (200-400 f/min.) for extraction of solvents generated in a tank 2 meters distant from the extraction point. Other mechanical considerations, producing performance deficits within the extraction apparatus, make it essential that theoretical air velocities are multiplied by factors of 10 or more when extraction systems are installed or used.

**Personal protection**

**Eye and face protection**

- Safety glasses with side shields.
- Chemical goggles.
- Contact lenses may pose a special hazard; soft contact lenses may absorb and concentrate irritants. A written policy document, describing the wearing of lenses or restrictions on use, should be created for each workplace or task. This should include a review of lens absorption and adsorption for the class of chemicals in use and an account of injury experience. Medical and first-aid personnel should be trained in their removal and suitable equipment should be readily available. In the event of chemical exposure, begin eye irrigation immediately and remove contact lens as soon as practicable. Lens should be removed at the first signs of eye redness or irritation - lens should be removed in a clean environment only after workers have washed hands thoroughly. [CDC NIOSH Current Intelligence Bulletin 59], [AS/NZS 1336 or national equivalent]

**Skin protection**

See Hand protection below

**Hands/feet protection**

- Wear chemical protective gloves, e.g. PVC.
- Wear safety footwear or safety gumboots, e.g. Rubber

**NOTE:**

- The material may produce skin sensitisation in predisposed individuals. Care must be taken, when removing gloves and other protective equipment, to avoid all possible skin contact.
- Contaminated leather items, such as shoes, belts and watch-bands should be removed and destroyed.

The selection of suitable gloves does not only depend on the material, but also on further marks of quality which vary from manufacturer to manufacturer. Where the chemical is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.
The exact break through time for substances has to be obtained from the manufacturer of the protective gloves and has to be observed when making a final choice.
Personal hygiene is a key element of effective hand care. Gloves must only be worn on clean hands. After using gloves, hands should be washed and dried thoroughly. Application of a non-perfumed moisturiser is recommended.
Suitability and durability of glove type is dependent on usage. Important factors in the selection of gloves include:
· frequency and duration of contact,
· chemical resistance of glove material,
· glove thickness and
· dexterity
Select gloves tested to a relevant standard (e.g. Europe EN 374, US F739, AS/NZS 2161.1 or national equivalent).
· When prolonged or frequently repeated contact may occur, a glove with a protection class of 5 or higher (breakthrough time greater than 240 minutes according to EN 374, AS/NZS 2161.10.1 or national equivalent) is recommended.
· When only brief contact is expected, a glove with a protection class of 3 or higher (breakthrough time greater than 60 minutes according to EN 374, AS/NZS 2161.10.1 or national equivalent) is recommended.
· Some glove polymer types are less affected by movement and this should be taken into account when considering gloves for long-term use.
· Contaminated gloves should be replaced.
As defined in ASTM F-739-96 in any application, gloves are rated as:
· Excellent when breakthrough time > 480 min

**Continued...**

| | |
|---|---|
| | · Good when breakthrough time > 20 min<br>· Fair when breakthrough time < 20 min<br>· Poor when glove material degrades<br>For general applications, gloves with a thickness typically greater than 0.35 mm, are recommended.<br>It should be emphasised that glove thickness is not necessarily a good predictor of glove resistance to a specific chemical, as the permeation efficiency of the glove will be dependent on the exact composition of the glove material. Therefore, glove selection should also be based on consideration of the task requirements and knowledge of breakthrough times.<br>Glove thickness may also vary depending on the glove manufacturer, the glove type and the glove model. Therefore, the manufacturers' technical data should always be taken into account to ensure selection of the most appropriate glove for the task.<br>Note: Depending on the activity being conducted, gloves of varying thickness may be required for specific tasks. For example:<br>· Thinner gloves (down to 0.1 mm or less) may be required where a high degree of manual dexterity is needed. However, these gloves are only likely to give short duration protection and would normally be just for single use applications, then disposed of.<br>· Thicker gloves (up to 3 mm or more) may be required where there is a mechanical (as well as a chemical) risk i.e. where there is abrasion or puncture potential<br>Gloves must only be worn on clean hands. After using gloves, hands should be washed and dried thoroughly. Application of a non-perfumed moisturiser is recommended. |
| **Body protection** | See Other protection below |
| **Other protection** | ‣ Overalls.<br>‣ P.V.C apron.<br>‣ Barrier cream.<br>‣ Skin cleansing cream.<br>‣ Eye wash unit. |

### Respiratory protection

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

Where the concentration of gas/particulates in the breathing zone, approaches or exceeds the "Exposure Standard" (or ES), respiratory protection is required.
Degree of protection varies with both face-piece and Class of filter; the nature of protection varies with Type of filter.

| Required Minimum Protection Factor | Half-Face Respirator | Full-Face Respirator | Powered Air Respirator |
|---|---|---|---|
| up to 10 x ES | AK-AUS P2 | - | AK-PAPR-AUS / Class 1 P2 |
| up to 50 x ES | - | AK-AUS / Class 1 P2 | - |
| up to 100 x ES | - | AK-2 P2 | AK-PAPR-2 P2 ^ |

^ - Full-face
A(All classes) = Organic vapours, B AUS or B1 = Acid gasses, B2 = Acid gas or hydrogen cyanide(HCN), B3 = Acid gas or hydrogen cyanide(HCN), E = Sulfur dioxide(SO2), G = Agricultural chemicals, K = Ammonia(NH3), Hg = Mercury, NO = Oxides of nitrogen, MB = Methyl bromide, AX = Low boiling point organic compounds(below 65 degC)

- 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** | Brown colour liquid with characteristic odour; not miscible with water. |

| | | | |
|---|---|---|---|
| **Physical state** | Liquid | **Relative density (Water = 1)** | 0.888 |
| **Odour** | Not Available | **Partition coefficient n-octanol / water** | Not Available |
| **Odour threshold** | Not Available | **Auto-ignition temperature (°C)** | Not Available |
| **pH (as supplied)** | Not Applicable | **Decomposition temperature** | Not Available |
| **Melting point / freezing point (°C)** | Not Available | **Viscosity (cSt)** | 166, 26 @ 100C |
| **Initial boiling point and boiling range (°C)** | Not Available | **Molecular weight (g/mol)** | Not Applicable |
| **Flash point (°C)** | >100 | **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 (%)** | Not Available |
| **Vapour density (Air = 1)** | Not Available | **VOC g/L** | Not Available |

## SECTION 10 Stability and reactivity

| | |
|---|---|
| **Reactivity** | See section 7 |
| **Chemical stability** | ‣ Unstable in the presence of incompatible materials.<br>‣ Product is considered stable.<br>‣ Hazardous polymerisation will not occur. |

**Continued...**

| | |
|---|---|
| **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

| | |
|---|---|
| **Inhaled** | Inhalation hazard is increased at higher temperatures.<br>Inhalation of oil droplets or aerosols may cause discomfort and may produce chemical inflammation of the lungs. |
| **Ingestion** | Ingestion may result in nausea, abdominal irritation, pain and vomiting |
| **Skin Contact** | There is some evidence to suggest that this material can cause inflammation of the skin on contact in some persons.<br>Open cuts, abraded or irritated skin should not be exposed to this material<br>The material may accentuate any pre-existing dermatitis condition<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. |
| **Eye** | Although the liquid is not thought to be an irritant (as classified by EC Directives), direct contact with the eye may produce transient discomfort characterised by tearing or conjunctival redness (as with windburn). |
| **Chronic** | Skin contact with the material is more likely to cause a sensitisation reaction in some persons compared to the general population.<br>Oil may contact the skin or be inhaled. Extended exposure can lead to eczema, inflammation of hair follicles, pigmentation of the face and warts on the soles of the feet. |

| | | |
|---|---|---|
| **2702 AUTO TRANS RESTORER 250ml** | **TOXICITY** | **IRRITATION** |
| | Not Available | Not Available |
| **lubricating oils, petroleum C20-50, hydrotreated neutral** | **TOXICITY** | **IRRITATION** |
| | Dermal (rabbit) LD50: >2000 mg/kg[2] | Eye: no adverse effect observed (not irritating)[1] |
| | Inhalation(Rat) LC50; 2.18 mg/l4h[2] | Skin: no adverse effect observed (not irritating)[1] |
| | Oral(Rat) LD50; >5000 mg/kg[2] | |
| **paraffinic distillate, light, solvent-dewaxed (severe)** | **TOXICITY** | **IRRITATION** |
| | Dermal (rabbit) LD50: >2000 mg/kg[2] | Eye: no adverse effect observed (not irritating)[1] |
| | Inhalation(Rat) LC50; 2.18 mg/l4h[2] | Skin: no adverse effect observed (not irritating)[1] |
| | Oral(Rat) LD50; >5000 mg/kg[2] | |
| **3-(C9-11-isoalkyloxy)-tetrahydrothiophene 1,1-dioxide** | **TOXICITY** | **IRRITATION** |
| | Dermal (rabbit) LD50: >4000 mg/kg[2] | Not Available |
| | Oral(Rat) LD50; >10000 mg/kg[2] | |
| **C7-9 branched alkyl-3,5-di-tert-butyl-4-hydroxyhydrocinnamate** | **TOXICITY** | **IRRITATION** |
| | dermal (rat) LD50: >2000 mg/kg[1] | Eye (rabbit: non-irritating * |
| | Oral(Rat) LD50; >500 mg/kg[1] | Skin (rat): non-irritating * |
| **tallow alkyl-diethanolamine derivatives** | **TOXICITY** | **IRRITATION** |
| | Oral(Rat) LD50; 1200 mg/kg[1] | Eye: adverse effect observed (irritating)[1] |
| | | Skin: adverse effect observed (corrosive)[1] |
| **5-(tert-dodecyldithio)-1,3,4-thiadiazole-2(3H)-thione** | **TOXICITY** | **IRRITATION** |
| | Dermal (rabbit) LD50: >2000 mg/kg[1] | Eye: mild * |
| | Inhalation(Rat) LC50; >0.62 mg/l4h[1] | Skin: Primary Irritation Score * |
| | Oral(Rat) LD50; 6176 mg/kg[1] | |
| **tallow alkyl-diethanolamine derivatives** | **TOXICITY** | **IRRITATION** |
| | Oral(Rat) LD50; 1200 mg/kg[1] | Eye: adverse effect observed (irritating)[1] |
| | | Skin: adverse effect observed (corrosive)[1] |
| **3-isodecyloxypropylamine** | **TOXICITY** | **IRRITATION** |
| | Oral(Rat) LD50; 1240 mg/kg[1] | Not Available |
| ***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* | |

| | |
|---|---|
| **PARAFFINIC DISTILLATE,** | The substance is classified by IARC as Group 3: |

**Continued...**

| | |
|---|---|
| **LIGHT, SOLVENT-DEWAXED (SEVERE)** | **NOT** classifiable as to its carcinogenicity to humans.<br>Evidence of carcinogenicity may be inadequate or limited in animal testing. |
| **3-(C9-11-ISOALKYLOXY)-TETRAHYDROTHIOPHENE 1,1-DIOXIDE** | For sulfolane and sulfolene:<br>The considerable existing mammalian toxicity information for sulfolene and sulfolane demonstrates that these substances share a similar order of toxicity, regardless of the additional double bond in sulfolene. These two substances are expected to demonstrate similar mammalian toxicity. Metabolism studies in rats show that sulfolane is metabolized via ring hydroxylation into 3-hydroxytetrahydrothiophene-1:1-dioxide. Mammalian toxicity data demonstrates a low order. of toxicity via oral, dermal, and inhalation routes of exposure.<br>**Repeat dose toxicity:** A subchronic repeated dose study of sulfolene was performed on both rats and mice An NOAEL for mortality of 562 mg/kg/day for male rats and 178 mg/kg/day for female rats was reported. In addition, NOAELS for a mortality of 562 mg/kg/day in both male and female mice were reported. These results are similar to the repeated dose toxicity observed with sulfolane Sulfolane, which was tested in accordance with both the Japan Technical Guidance for 28-day repeated dose toxicity testing and OECD Technical Guideline 421.<br>**Genetic toxicity:** Genotoxicity data exist for both sulfolene and sulfolane, and indicate that genotoxicity is not expected. Repeated dose toxicity testing on both sulfolene and sulfolane showed similar results in both rats and mice.<br>**Reproductive and developmental toxicity:** Sulfolane was also tested in rats using the reproduction/development screening test pursuant to OECD Technical Guideline 421. The NOAEL for sulfolane in this study is of the same order of magnitude as the repeated dose study, with an NOAEL for reproductive performance of 700 mg/kg/day in male rats and 200 mg/kg/day in female rats. Also, sulfolane had an NOAEL of 60 mg/kg/day for production of pups. This study found that the toxic effects for female parents and pups were effects on reproductive parameters such as decrease of the number of oestrus cases and increase of dams losing all of their pups. With regard to the pups, toxicity presented as effects on developmental parameters, including the number of pups, viability index, stillbirth, and body weight. No significant effect was observed showing grossly visible abnormalities in the pups. Sulfolene has not been tested for reproductive and developmental toxicity, but, due to its close structural similarity to sulfolane, it would be expected to be of a similar order of magnitude as sulfolane.<br>Mean 24 -72 hours scores were determined to be 1.5 and 0 erythema, respectively, in both intact and abraded skin. In accordance with EU CLP Regulation (EC) No. 1272/2008, classification is not required for skin irritation. No corneal opacity, iritis, conjunctival irritation was observed in any animal at any observation period. In accordance with EU CLP Regulation (EC) No. 1272/2008, classification of this substance is not required for eye irritation. Negative for the induction of structural and numerical chromosome aberrations in the in vitro mammalian chromosome aberration test using human peripheral blood lymphocytes in both the non-activated and the S9-activated test systems. Based on the results of a study, a dosage level of 600 mg/kg/day (the highest dosage level tested) appeared to be the no-observed-adverse-effect level (NOAEL) for reproductive toxicity of thiophene when administered orally by gavage to Crl:CD(SD) rats. Under the conditions of this study, the NOAEL for male systemic toxicity was considered to be 175 mg/kg/day based on increased organ weights and microscopic findings in the 600 mg/kg/day group but lack of microscopic findings in the 175 mg/kg/day group. The NOAEL for female systemic toxicity was considered to be 175 mg/kg/day based on increased liver weight in the 600 mg/kg/day group. Based on the lack of effects on live litter size, postnatal survival and F1 body weights at any dosage level, the NOAEL for F1 neonatal toxicity was considered to be at least 600 mg/kg/day. * REACh Dossier |
| **C7-9 BRANCHED ALKYL-3,5-DI-TERT-BUTYL-4-HYDROXYHYDROCINNAMATE** | Non-sensitising to guinea pig skin * Everspring Chemical MSDS<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. Liver tumours have been reported. |
| **5-(TERT-DODECYLDITHIO)-1,3,4-THIADIAZOLE-2(3H)-THIONE** | 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. Other allergic skin reactions, e.g. contact urticaria, involve antibody-mediated immune reactions. The significance of the contact allergen is not simply determined by its sensitisation potential: the distribution of the substance and the opportunities for contact with it are equally important. A weakly sensitising substance which is widely distributed can be a more important allergen than one with stronger sensitising potential with which few individuals come into contact. From a clinical point of view, substances are noteworthy if they produce an allergic test reaction in more than 1% of the persons tested.<br>2,5-Dimercapto-1,3,4-thiadiazole (DMcT) may cause eye irritation, chemical conjunctivitis, skin irritation, respiratory tract irritation, and gastrointestinal irritation, including nausea, vomiting, and diarrhea. During acute inhalation exposure, it can produce irritation to mucous membranes and the upper respiratory tract, and upon short-term exposure, it can cause skin irritation and severe eye irritation. DMcT was one of 43 compounds tested in 16 men as an antidote to the skin vesicant lewisite, an arsenic compound. It was not an effective decontaminant of lewisite, producing 14 erythemas compared to 7 induced by 2,3-dimercaptopropanol. In a manufacturing plant, seven cases of industrial allergic sensitisation to DMcT were reported. In patch tests with an unspecified DMcT derivative formulated on amorphous silica, a worker had an allergic skin reaction to the covered test and a mild reaction to the uncovered test, while another individual had a mild reaction to the occluded patch test. CUVAN 826, a DMcT derivative used as a corrosion inhibitor and a metal deactivator for copper and other non-ferrous metals, was a contact sensitiser in guinea pigs.<br>**Acute Toxicity:** The inhalation LC50 value for DMcT was 3.09 mg/L (503 ppm) in rats. The intraperitoneal (i.p.) LD50 for DMcT was 200 mg/kg (1.33 mmol/kg) in mice (strain not provided) and 1387 mg/kg (9.231 mmol/kg) in NMRI/Han mice. An oral LD50 of 5000 mg/kg (33.28 mmol/kg) was reported for rats, and a dermal LD50 of 2000 mg/kg (13.31 mmol/kg) was reported in rabbits.<br>With 2,5-bis(tert-nonyldithio)-1,3,4-thiadiazole (also known as Amoco 158) an oral LD50>10 g/kg and inhalation LC50 >2.75 mg/L was reported in Sprague-Dawley rats. In rabbits the dermal LD50 was >2 g/kg. In the oral study, decreased motor activity and diarrhea were observed at the dose level, and one male had a spleen with dark red edges. In the inhalation study, nasal discharge, red encrustation around the nose and eyes, and salivation were observed during the four-hour exposure period. A few animals had spongy lungs and/or brown foci through lung lobes<br>**Short-term and Subchronic Exposure:** When daily oral doses of an unspecified DMcT reaction product (50, 250, or 1000 mg/kg [0.33, 1.66, or 6.656 mmol/kg]) were given to rats for 28 days, no deaths were reported. The mid- and high-dose males.<br>**Cytotoxicity:** DMcT (0.67-67 µM [0.10-10 µg/mL]) was not cytotoxic in rat tracheal epithelial cells. Colony-forming efficiency was .80% of control levels.<br>Genotoxicity: Amoco 158 was not mutagenic in Salmonella typhimurium strains TA98, TA100, TA1535, TA1537, and TA1538 and Escherichia coli strain WP2uvrA, tested with and without metabolic activation. Additionally, it did not induce chromosome aberrations in Chinese hamster V79 cells.<br>for similar substituted thiadiazole: (Vanlube 829) |
| **3-ISODECYLOXYPROPYLAMINE** | The material may produce moderate eye irritation leading to inflammation. Repeated or prolonged exposure to irritants may produce conjunctivitis. |
| **LUBRICATING OILS, PETROLEUM C20-50, HYDROTREATED NEUTRAL & PARAFFINIC DISTILLATE, LIGHT, SOLVENT-DEWAXED (SEVERE)** | 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. Testing of residual oils for mutation-causing and cancer-causing potential has shown negative results, supporting the belief that these materials lack biologically active components or the components are largely non-bioavailable due to their molecular size.<br>Toxicity testing has consistently shown that lubricating base oils have low acute toxicities. Numerous tests have shown that a lubricating base oil's mutagenic and carcinogenic potential correlates with its 3-7 ring polycyclic aromatic compound (PAC) content, and the level of DMSO extractables (e.g. IP346 assay), both characteristics that are directly related to the degree/conditions of processing. |

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| | For highly and severely refined distillate base oils:<br>In animal studies, the acute, oral, semilethal dose is >5g/kg body weight and the semilethal dose by skin contact is >2g/kg body weight. The semilethal concentration for inhalation is 2.18 to >4 mg/L. The materials have varied from “non-irritating” to “moderately irritating” when tested for skin and eye irritation. Testing for sensitisation has been negative. The effects of repeated exposure vary by species; in animals, effects to the testes and lung have been observed, as well as the formation of granulomas. In animals, these substances have not been found to cause reproductive toxicity or significant increases in birth defects. They are also not considered to cause cancer, mutations or chromosome aberrations. |
| **PARAFFINIC DISTILLATE, LIGHT, SOLVENT-DEWAXED (SEVERE) & TALLOW ALKYL-DIETHANOLAMINE DERIVATIVES & 3-ISODECYLOXYPROPYLAMINE** | No significant acute toxicological data identified in literature search. |
| **TALLOW ALKYL-DIETHANOLAMINE DERIVATIVES** | Alkyl amine polyalkoxylates are not acutely toxic by the oral and dermal routes of exposure, or via inhalation under normal use conditions. Concentrated materials are generally corrosive, eye and skin irritants and may be dermal sensitizers. There is no evidence that alkyl amine polyalkoxylates are neurotoxic, mutagenic, or clastogenic.<br>Surfactants are surface-active materials that can damage the structural integrity of cellular membranes at high dose levels. Thus, surfactants are often corrosive and irritating in concentrated solutions, as indicated by the acute toxicity studies for these inert materials. It is possible that some of the observed toxicity seen in the repeated studies, such as diarrhea or decreased body weight gain, can be attributed to the corrosive and irritating nature of these surfactants.<br>Generally, lower molecular weight AAPs (lower carbon chain units and less alkoxylation) may potentially be more bioavailable because they may be more easily absorbed and distributed than higher molecular weight compounds. Thus overall, the longer chain carbon amine higher polyalkoxylates should be less bioavailable.<br>There are no dermal absorption data on the AAPs. However, data on functionally and structurally similar surfactants suggest that dermal absorption of the AAPs is likely to be low.<br>Following subchronic exposure to rats, some gastrointestinal irritation was observed, but no specific target organ toxicity or neurotoxicity was seen. In subchronic studies in rats and/or dogs, the most sensitive effects noted were increased mortality, clinical signs (salivation, wheezing, emesis, and/or soft faeces), cataracts, cellular changes in the stomach, and liver effects characterized by enzyme induction, and pigment accumulation in Kupffer cells and bile canaliculi. There was no increased susceptibility to the offspring of rats following in utero exposure in two prenatal developmental toxicity studies. However, there is evidence of increased susceptibility in a reproductive screening study in rats.<br>In rat developmental studies, no adverse fetal effects were seen, even at maternally toxic doses. No effects were observed on estrous cyclicity, spermatogenic endpoints, or testosterone and thyroid levels in a two-generation rat reproduction study. However, reproductive and offspring toxicity were noted for AAPs based on litter loss, increase mean number of unaccounted-for implantation sites and decreased mean number of pups born, live litter size and postnatal survival from birth to LD 4.<br>Very little metabolism information is available for the alkyl amine polyalkoxylates. However, it is possible to predict mammalian metabolism based on studies for the alkyl alcohol alkoxylates, which are another class of surfactants. It has been proposed that the primary metabolic pathway involves the excretion of the polyalkoxylate moiety and conversion of the alkyl amine group to a fatty acid that is then converted via oxidative degradation to carbon dioxide and water. In general, the gastrointestinal absorption of AAPs with relatively short alkoxylate chain lengths is expected to be rapid and extensive, while less absorption is likely for the more extensively polyalkoxylated AAPs with larger molecular weights.<br>No structural alerts for potential carcinogenicity of both a representative alkyl amine polyalkoxylate, as well as a possible metabolite/degradate of alkyl amine polyalkoxylate that had been extensively dealkylated, with the amine group intact have been identified Alkyl amine polyalkoxylates are not expected to be carcinogenic. Therefore a cancer dietary exposure assessment is not necessary to assess cancer risk.<br>The US EPA has not found alkyl amine polyalkoxylates to share a common mechanism of toxicity with any other substances, and alkyl amine polyalkoxylates do not appear to produce a toxic metabolite produced by other substances. For the purposes of this tolerance action, therefore, EPA has assumed that alkyl amine polyalkoxylates do not have a common mechanism of toxicity with other substances<br>Alkyl Amine Polyalkoxylates (JITF CST 4 Inert Ingredients). Human Health Risk Assessment to Support Proposed Exemption from the Requirement of a Tolerance When Used as Inert Ingredients in Pesticide Formulations. June 2009<br>http://beta.regulations.gov/document/EPA-HQ-OPP-2008-0738-0005<br>Polyethers (such as ethoxylated surfactants and polyethylene glycols) are highly susceptible to being oxidized in the air. They then form complex mixtures of oxidation products.<br>Animal testing reveals that whole the pure, non-oxidised surfactant is non-sensitizing, many of the oxidation products are sensitisers. The oxidization products also cause irritation.<br>The material may be irritating to the eye, with prolonged contact causing inflammation. Repeated or prolonged exposure to irritants may produce conjunctivitis.<br>Tallow derivatives used in the manufacture of cosmetic products are safe for consumption when it undergoes- transesterification or hydrolysis at 200°C, under pressure for 20 minutes (for glycerol, fatty acids and esters) ; saponification with 12 M of NaOH (for glycerol and soap) at 95°C for 3 hours; continuous process at 140°C, for about 8 minutes or its equivalent.<br>Overexposure to most of these materials may cause adverse health effects.<br>Many amine-based compounds can cause release of histamines, which, in turn, can trigger allergic and other physiological effects, including constriction of the bronchi or asthma and inflammation of the cavity of the nose. Whole-body symptoms include headache, nausea, faintness, anxiety, a decrease in blood pressure, rapid heartbeat, itching, reddening of the skin, urticaria (hives) and swelling of the face, which are usually transient.<br>There are generally four routes of possible or potential exposure: inhalation, skin contact, eye contact, and swallowing.<br>Inhalation: Inhaling vapours may result in moderate to severe irritation of the tissues of the nose and throat and can irritate the lungs. Higher concentrations of certain amines can produce severe respiratory irritation, characterized by discharge from the nose, coughing, difficulty in breathing and chest pain. Chronic exposure via inhalation may cause headache, nausea, vomiting, drowsiness, sore throat, inflammation of the bronchi and lungs, and possible lung damage. Repeated and/or prolonged exposure to some amines may result in liver disorders, jaundice and liver enlargement. Some amines have been shown to cause kidney, blood and central nervous system disorders in animal studies.<br>While most polyurethane amine catalysts are not sensitisers, some certain individuals may also become sensitized to amines and my experience distress while breathing, including asthma-like attacks, whenever they are subsequently exposed to even very small amounts of vapours. Once sensitized, these individuals must avoid any further exposure to amines. Chronic overexposure may lead to permanent lung injury, including reduction in lung function, breathlessness, chronic inflammation of the bronchi, and immunologic lung disease.<br>Products with higher vapour pressures may reach higher concentrations in the air, and this increases the likelihood of worker exposure.<br>Inhalation hazards are increased when exposure to amine catalysts occurs in situations that produce aerosols, mists or heated vapours. Such situations include leaks in fitting or transfer lines. Medical conditions generally aggravated by inhalation exposure include asthma, bronchitis and emphysema.<br>Skin contact: Skin contact with amine catalysts poses a number of concerns. Direct skin contact can cause moderate to severe irritation and injury, from simple redness and swelling to painful blistering, ulceration, and chemical burns. Repeated or prolonged exposure may also result in severe cumulative skin inflammation. Skin contact with some amines may result in allergic sensitization. Sensitised persons should avoid all contact with amine catalysts. Whole-body effects resulting from the absorption of the amines though skin exposure may include headaches, nausea, faintness, anxiety, decrease in blood pressure, reddening of the skin, hives, and facial swelling. These symptoms may be related to the pharmacological action of the amines, and they are usually temporary.<br>Eye contact: Amine catalysts are alkaline and their vapours are irritating to the eyes, even at low concentrations. Direct contact with liquid amine may cause severe irritation and tissue injury, and the “burning” may lead to blindness. Contact with solid products may result in mechanical irritation, pain and corneal injury.<br>Exposed persons may experience excessive tearing, burning, inflammation of the conjunctiva, and swelling of the cornea, which manifests as a |

**Continued...**

| | |
|---|---|
| | blurred or foggy vision with a blue tint, and sometimes a halo phenomenon around lights. These symptoms are temporary and usually disappear when exposure ends. Some people may experience this effect even when exposed to concentrations that do not cause respiratory irritation.<br>Ingestion: Amine catalysts have moderate to severe toxicity if swallowed. Some amines can cause severe irritation, ulcers and burns of the mouth, throat, gullet and gastrointestinal tract. Material aspirated due to vomiting can damage the bronchial tubes and the lungs. Affected people may also experience pain in the chest or abdomen, nausea, bleeding of the throat and gastrointestinal tract, diarrhea, dizziness, drowsiness, thirst, collapse of circulation, coma and even death.<br>Most undiluted cationic surfactants satisfy the criteria for classification as Harmful (Xn) with R22 and as Irritant (Xi) for skin and eyes with R38 and R41. |
| **TALLOW ALKYL-DIETHANOLAMINE DERIVATIVES & 3-ISODECYLOXYPROPYLAMINE** | FND ether amines and FND amines are very similar in structure (length of chain or degree of saturation), function and toxicity. Acute exposure to FND ether amines by oral, dermal and inhalation may produce moderate to slight toxicity but repeated skin contact can be highly irritating. However, exposure did not produce any organ-specific toxicity, genetic, reproductive or developmental defect same as in FND amines.<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. Other criteria for diagnosis of RADS include a reversible airflow pattern on lung function tests, moderate to severe bronchial hyperreactivity on methacholine challenge testing, and the lack of minimal lymphocytic inflammation, without eosinophilia. RADS (or asthma) following an irritating inhalation is an infrequent disorder with rates related to the concentration of and duration of exposure to the irritating substance. On the other hand, industrial bronchitis is a disorder that occurs as a result of exposure due to high concentrations of irritating substance (often particles) and is completely reversible after exposure ceases. The disorder is characterized by difficulty breathing, cough and mucus production.<br>The material may produce respiratory tract irritation, and result in damage to the lung including reduced lung function.<br>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. |

| | | | |
|---|---|---|---|
| **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

**2702 AUTO TRANS RESTORER 250ml**

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

**lubricating oils, petroleum C20-50, hydrotreated neutral**

| Endpoint | Test Duration (hr) | Species | Value | Source |
|---|---|---|---|---|
| NOEC(ECx) | 504h | Crustacea | >1mg/l | 1 |
| EC50 | 48h | Crustacea | >1000mg/l | 1 |

**paraffinic distillate, light, solvent-dewaxed (severe)**

| Endpoint | Test Duration (hr) | Species | Value | Source |
|---|---|---|---|---|
| NOEC(ECx) | 504h | Crustacea | >1mg/l | 1 |
| EC50 | 48h | Crustacea | >1000mg/l | 1 |

**3-(C9-11-isoalkyloxy)-tetrahydrothiophene 1,1-dioxide**

| Endpoint | Test Duration (hr) | Species | Value | Source |
|---|---|---|---|---|
| LC50 | 96h | Fish | 3.3mg/l | 2 |
| EC50 | 48h | Crustacea | 4.6mg/l | 2 |
| NOEC(ECx) | 48h | Crustacea | 0.63mg/l | 2 |

**C7-9 branched alkyl-3,5-di-tert-butyl-4-hydroxyhydrocinnamate**

| Endpoint | Test Duration (hr) | Species | Value | Source |
|---|---|---|---|---|
| LC50 | 96h | Fish | >0.001mg/l | 2 |
| EC50 | 72h | Algae or other aquatic plants | <0.001mg/l | 2 |
| EC50 | 48h | Crustacea | >0.008mg/l | 2 |
| EC50(ECx) | 72h | Algae or other aquatic plants | <0.001mg/l | 2 |

**tallow alkyl-diethanolamine derivatives**

| Endpoint | Test Duration (hr) | Species | Value | Source |
|---|---|---|---|---|
| LC50 | 96h | Fish | 0.1mg/l | 2 |
| EC50 | 48h | Crustacea | 0.043mg/l | 2 |
| EC50(ECx) | 48h | Crustacea | 0.043mg/l | 2 |

**5-(tert-dodecyldithio)-1,3,4-thiadiazole-2(3H)-thione**

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

**Continued...**

| | | | | | |
|---|---|---|---|---|---|
| **tallow alkyl-diethanolamine derivatives** | **Endpoint** | **Test Duration (hr)** | **Species** | **Value** | **Source** |
| | LC50 | 96h | Fish | 0.1mg/l | 2 |
| | EC50 | 48h | Crustacea | 0.043mg/l | 2 |
| | EC50(ECx) | 48h | Crustacea | 0.043mg/l | 2 |
| **3-isodecyloxypropylamine** | **Endpoint** | **Test Duration (hr)** | **Species** | **Value** | **Source** |
| | EC10(ECx) | 72h | Algae or other aquatic plants | 0.085mg/l | 2 |
| | EC50 | 72h | Algae or other aquatic plants | 0.15mg/l | 2 |
| | LC50 | 96h | Fish | 2.14mg/l | 2 |
| ***Legend:*** | *Extracted from 1. IUCLID Toxicity Data 2. Europe ECHA Registered Substances - Ecotoxicological Information - Aquatic Toxicity 3. EPIWIN Suite V3.12 (QSAR) - Aquatic Toxicity Data (Estimated) 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* | | | | |

Harmful 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.

### Persistence and degradability

| Ingredient | Persistence: Water/Soil | Persistence: Air |
|---|---|---|
| | No Data available for all ingredients | No Data available for all ingredients |

### Bioaccumulative potential

| Ingredient | Bioaccumulation |
|---|---|
| | No Data available for all ingredients |

### Mobility in soil

| Ingredient | Mobility |
|---|---|
| | No Data available for all ingredients |

## SECTION 13 Disposal considerations

### Waste treatment methods

| | |
|---|---|
| **Product / Packaging disposal** | ▸ Containers may still present a chemical hazard/ danger when empty.<br>▸ Return to supplier for reuse/ recycling if possible.<br>Otherwise:<br>▸ If container can not be cleaned sufficiently well to ensure that residuals do not remain or if the container cannot be used to store the same product, then puncture containers, to prevent re-use, and bury at an authorised landfill.<br>▸ Where possible retain label warnings and SDS and observe all notices pertaining to the product.<br>Legislation addressing waste disposal requirements may differ by country, state and/ or territory. Each user must refer to laws operating in their area. In some areas, certain wastes must be tracked.<br>A Hierarchy of Controls seems to be common - the user should investigate:<br>▸ Reduction<br>▸ Reuse<br>▸ Recycling<br>▸ Disposal (if all else fails)<br>This material may be recycled if unused, or if it has not been contaminated so as to make it unsuitable for its intended use. If it has been contaminated, it may be possible to reclaim the product by filtration, distillation or some other means. Shelf life considerations should also be applied in making decisions of this type. Note that properties of a material may change in use, and recycling or reuse may not always be appropriate.<br>▸ **DO NOT** allow wash water from cleaning or process equipment to enter drains.<br>▸ It may be necessary to collect all wash water for treatment before disposal.<br>▸ In all cases disposal to sewer may be subject to local laws and regulations and these should be considered first.<br>▸ Where in doubt contact the responsible authority.<br>▸ 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.<br>▸ Recycle containers if possible, or dispose of in an authorised landfill. |

## SECTION 14 Transport information

### Labels Required

| | |
|---|---|
| **Marine Pollutant** | NO |
| **HAZCHEM** | Not Applicable |

### Land transport (ADG): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS

### Air transport (ICAO-IATA / DGR): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS

### Sea transport (IMDG-Code / GGVSee): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS

### Transport in bulk according to Annex II of MARPOL and the IBC code

Not Applicable

**Continued...**

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

| Product name | Group |
|---|---|
| lubricating oils, petroleum C20-50, hydrotreated neutral | Not Available |
| paraffinic distillate, light, solvent-dewaxed (severe) | Not Available |
| 3-(C9-11-isoalkyloxy)-tetrahydrothiophene 1,1-dioxide | Not Available |
| C7-9 branched alkyl-3,5-di-tert-butyl-4-hydroxyhydrocinnamate | Not Available |
| tallow alkyl-diethanolamine derivatives | Not Available |
| 5-(tert-dodecyldithio)-1,3,4-thiadiazole-2(3H)-thione | Not Available |
| tallow alkyl-diethanolamine derivatives | Not Available |
| 3-isodecyloxypropylamine | Not Available |

**Transport in bulk in accordance with the ICG Code**

| Product name | Ship Type |
|---|---|
| lubricating oils, petroleum C20-50, hydrotreated neutral | Not Available |
| paraffinic distillate, light, solvent-dewaxed (severe) | Not Available |
| 3-(C9-11-isoalkyloxy)-tetrahydrothiophene 1,1-dioxide | Not Available |
| C7-9 branched alkyl-3,5-di-tert-butyl-4-hydroxyhydrocinnamate | Not Available |
| tallow alkyl-diethanolamine derivatives | Not Available |
| 5-(tert-dodecyldithio)-1,3,4-thiadiazole-2(3H)-thione | Not Available |
| tallow alkyl-diethanolamine derivatives | Not Available |
| 3-isodecyloxypropylamine | Not Available |

## SECTION 15 Regulatory information

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

**lubricating oils, petroleum C20-50, hydrotreated neutral is found on the following regulatory lists**

Australia Hazardous Chemical Information System (HCIS) - Hazardous Chemicals
Australian Inventory of Industrial Chemicals (AIIC)
Chemical Footprint Project - Chemicals of High Concern List
International Agency for Research on Cancer (IARC) - Agents Classified by the IARC Monographs

**paraffinic distillate, light, solvent-dewaxed (severe) is found on the following regulatory lists**

Australia Hazardous Chemical Information System (HCIS) - Hazardous Chemicals
Australian Inventory of Industrial Chemicals (AIIC)
Chemical Footprint Project - Chemicals of High Concern List
International Agency for Research on Cancer (IARC) - Agents Classified by the IARC Monographs

**3-(C9-11-isoalkyloxy)-tetrahydrothiophene 1,1-dioxide is found on the following regulatory lists**

Not Applicable

**C7-9 branched alkyl-3,5-di-tert-butyl-4-hydroxyhydrocinnamate is found on the following regulatory lists**

Australia Hazardous Chemical Information System (HCIS) - Hazardous Chemicals
Australian Inventory of Industrial Chemicals (AIIC)

**tallow alkyl-diethanolamine derivatives is found on the following regulatory lists**

Australian Inventory of Industrial Chemicals (AIIC)

**5-(tert-dodecyldithio)-1,3,4-thiadiazole-2(3H)-thione is found on the following regulatory lists**

Australian Inventory of Industrial Chemicals (AIIC)

**tallow alkyl-diethanolamine derivatives is found on the following regulatory lists**

Australian Inventory of Industrial Chemicals (AIIC)

**3-isodecyloxypropylamine is found on the following regulatory lists**

Australian Inventory of Industrial Chemicals (AIIC)

**National Inventory Status**

| National Inventory | Status |
|---|---|
| Australia - AIIC / Australia | No (3-(C9-11-isoalkyloxy)-tetrahydrothiophene 1,1-dioxide) |

**Continued...**

| National Inventory | Status |
|---|---|
| Non-Industrial Use | |
| Canada - DSL | No (3-(C9-11-isoalkyloxy)-tetrahydrothiophene 1,1-dioxide) |
| Canada - NDSL | No (lubricating oils, petroleum C20-50, hydrotreated neutral; paraffinic distillate, light, solvent-dewaxed (severe); C7-9 branched alkyl-3,5-di-tert-butyl-4-hydroxyhydrocinnamate; tallow alkyl-diethanolamine derivatives; 5-(tert-dodecyldithio)-1,3,4-thiadiazole-2(3H)-thione; tallow alkyl-diethanolamine derivatives) |
| China - IECSC | No (3-(C9-11-isoalkyloxy)-tetrahydrothiophene 1,1-dioxide) |
| Europe - EINEC / ELINCS / NLP | No (3-(C9-11-isoalkyloxy)-tetrahydrothiophene 1,1-dioxide; C7-9 branched alkyl-3,5-di-tert-butyl-4-hydroxyhydrocinnamate; 5-(tert-dodecyldithio)-1,3,4-thiadiazole-2(3H)-thione) |
| Japan - ENCS | No (lubricating oils, petroleum C20-50, hydrotreated neutral; paraffinic distillate, light, solvent-dewaxed (severe); 3-(C9-11-isoalkyloxy)-tetrahydrothiophene 1,1-dioxide; C7-9 branched alkyl-3,5-di-tert-butyl-4-hydroxyhydrocinnamate; tallow alkyl-diethanolamine derivatives; 5-(tert-dodecyldithio)-1,3,4-thiadiazole-2(3H)-thione; tallow alkyl-diethanolamine derivatives) |
| Korea - KECI | No (3-(C9-11-isoalkyloxy)-tetrahydrothiophene 1,1-dioxide) |
| New Zealand - NZIoC | Yes |
| Philippines - PICCS | No (3-(C9-11-isoalkyloxy)-tetrahydrothiophene 1,1-dioxide) |
| USA - TSCA | Yes |
| Taiwan - TCSI | Yes |
| Mexico - INSQ | No (lubricating oils, petroleum C20-50, hydrotreated neutral; paraffinic distillate, light, solvent-dewaxed (severe); 3-(C9-11-isoalkyloxy)-tetrahydrothiophene 1,1-dioxide; tallow alkyl-diethanolamine derivatives; 5-(tert-dodecyldithio)-1,3,4-thiadiazole-2(3H)-thione; tallow alkyl-diethanolamine derivatives; 3-isodecyloxypropylamine) |
| Vietnam - NCI | No (5-(tert-dodecyldithio)-1,3,4-thiadiazole-2(3H)-thione) |
| Russia - FBEPH | No (lubricating oils, petroleum C20-50, hydrotreated neutral; paraffinic distillate, light, solvent-dewaxed (severe); 3-(C9-11-isoalkyloxy)-tetrahydrothiophene 1,1-dioxide; C7-9 branched alkyl-3,5-di-tert-butyl-4-hydroxyhydrocinnamate; tallow alkyl-diethanolamine derivatives; 5-(tert-dodecyldithio)-1,3,4-thiadiazole-2(3H)-thione; tallow alkyl-diethanolamine derivatives) |
| ***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.* |

## SECTION 16 Other information

| | |
|---|---|
| **Revision Date** | 01/11/2019 |
| **Initial Date** | 10/12/2018 |

### SDS Version Summary

| Version | Date of Update | Sections Updated |
|---|---|---|
| 3.1.1.1 | 01/11/2019 | One-off system update. NOTE: This may or may not change the GHS classification |
| 3.1.2.1 | 26/04/2021 | Regulation Change |
| 3.1.3.1 | 03/05/2021 | Regulation Change |
| 3.1.4.1 | 06/05/2021 | Regulation Change |
| 3.1.5.1 | 10/05/2021 | Regulation Change |
| 3.1.5.2 | 30/05/2021 | Template Change |
| 3.1.5.3 | 04/06/2021 | Template Change |
| 3.1.5.4 | 05/06/2021 | Template Change |
| 3.1.6.4 | 07/06/2021 | Regulation Change |
| 3.1.6.5 | 09/06/2021 | Template Change |
| 3.1.6.6 | 11/06/2021 | Template Change |
| 3.1.6.7 | 15/06/2021 | Template Change |
| 3.1.7.7 | 17/06/2021 | Regulation Change |
| 3.1.8.7 | 21/06/2021 | Regulation Change |
| 3.1.8.8 | 05/07/2021 | Template Change |
| 3.1.9.8 | 14/07/2021 | Regulation Change |
| 3.1.10.8 | 19/07/2021 | Regulation Change |
| 3.1.10.9 | 01/08/2021 | Template Change |
| 3.1.11.9 | 02/08/2021 | Regulation Change |
| 3.1.12.9 | 05/08/2021 | Regulation Change |
| 3.1.13.9 | 09/08/2021 | Regulation Change |
| 3.1.14.9 | 23/08/2021 | Regulation Change |
| 3.1.15.9 | 26/08/2021 | Regulation Change |
| 3.1.15.10 | 29/08/2021 | Template Change |
| 3.1.16.10 | 30/08/2021 | Regulation Change |
| 3.1.17.10 | 06/09/2021 | Regulation Change |
| 3.1.17.11 | 16/09/2021 | Template Change |
| 3.1.18.11 | 16/09/2021 | Regulation Change |

**Continued...**

**Other information**

**Ingredients with multiple cas numbers**

| Name | CAS No |
|---|---|
| 3-(C9-11-isoalkyloxy)-tetrahydrothiophene 1,1-dioxide | 398141-87-2, 1876-04-6 |
| tallow alkyl-diethanolamine derivatives | 61791-44-4, 1218787-32-6 |
| tallow alkyl-diethanolamine derivatives | 61791-44-4, 1218787-32-6 |
| 3-isodecyloxypropylamine | 30113-45-2, 218141-16-3 |

Classification of the preparation and its individual components has drawn on official and authoritative sources as well as independent review by the Chemwatch Classification committee using available literature references.

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. Scale of use, frequency of use and current or available engineering controls must be considered.

**Definitions and abbreviations**

PC—TWA: Permissible Concentration-Time Weighted Average
PC—STEL: Permissible Concentration-Short Term Exposure Limit
IARC: International Agency for Research on Cancer
ACGIH: American Conference of Governmental Industrial Hygienists
STEL: Short Term Exposure Limit
TEEL: Temporary Emergency Exposure Limit。
IDLH: Immediately Dangerous to Life or Health Concentrations
ES: Exposure Standard
OSF: Odour Safety Factor
NOAEL :No Observed Adverse Effect Level
LOAEL: Lowest Observed Adverse Effect Level
TLV: Threshold Limit Value
LOD: Limit Of Detection
OTV: Odour Threshold Value
BCF: BioConcentration Factors
BEI: Biological Exposure Index
AIIC: Australian Inventory of Industrial Chemicals
DSL: Domestic Substances List
NDSL: Non-Domestic Substances List
IECSC: Inventory of Existing Chemical Substance in China
EINECS: European INventory of Existing Commercial chemical Substances
ELINCS: European List of Notified Chemical Substances
NLP: No-Longer Polymers
ENCS: Existing and New Chemical Substances Inventory
KECI: Korea Existing Chemicals Inventory
NZIoC: New Zealand Inventory of Chemicals
PICCS: Philippine Inventory of Chemicals and Chemical Substances
TSCA: Toxic Substances Control Act
TCSI: Taiwan Chemical Substance Inventory
INSQ: Inventario Nacional de Sustancias Químicas
NCI: National Chemical Inventory
FBEPH: Russian Register of Potentially Hazardous Chemical and Biological Substances