

Liqui Moly Scheiben-Reiniger-Super-Konzentrat / Windscreen Washer Additive

Motor Active

Chemwatch Hazard Alert Code: 2

Chemwatch: 41-5889

Version No: 4.1.1.1

Safety Data Sheet according to WHS and ADG requirements

Issue Date: 03/10/2016

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S.GHS.AUS.EN

SECTION 1 IDENTIFICATION OF THE SUBSTANCE / MIXTURE AND OF THE COMPANY / UNDERTAKING

Product Identifier

| | |
|-------------------------------|--|
| Product name | Liqui Moly Scheiben-Reiniger-Super-Konzentrat / Windscreen Washer Additive |
| Synonyms | Product Code: 1517 |
| Other means of identification | Not Available |

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

| | |
|--------------------------|--|
| Relevant identified uses | Use according to manufacturer's directions. Window cleaner. |
|--------------------------|--|

Details of the supplier of the safety data sheet

| | | |
|-------------------------|---|--|
| Registered company name | Motor Active | Liqui Moly GmbH |
| Address | 35 Slough Business Park, Holker Street Silverwater NSW 2128 Australia | Jerg-Wieland-Strasse 4 Ulm D-89081 Germany |
| Telephone | +61 2 9737 9422 1800 350 622 | +49 731 1420 0 |
| Fax | +61 2 9737 9414 | +49 731 1420 82 |
| Website | www.motoractive.com.au | Not Available |
| Email | andrew.spira@motoractive.com.au | Not Available |

Emergency telephone number

| | | |
|-----------------------------------|---|---------------------------------|
| Association / Organisation | MotorActive | INFOTRAC |
| Emergency telephone numbers | +61 2 9737 9422 (For General Information Monday to Friday 8:30am to 5:pm) | +1800 535 5053 (US & Canada) |
| Other emergency telephone numbers | 13 11 26 (In Case of Emergency contact: Poison Information Hotline) | +1 352 323 3500 (International) |

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 | 2 |
| Toxicity | 2 | 3 |
| Body Contact | 2 | 3 |
| Reactivity | 1 | 2 |
| Chronic | 0 | 1 |

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

| | |
|-------------------------------|---|
| Poisons Schedule | Not Applicable |
| Classification ^[1] | Acute Toxicity (Oral) Category 4, Skin Corrosion/Irritation Category 2, Eye Irritation Category 2A, Acute Aquatic Hazard Category 3 |
| Legend: | 1. Classified by Chemwatch; 2. Classification drawn from HSIS ; 3. Classification drawn from EC Directive 1272/2008 - Annex VI |

Label elements

| | |
|--------------------|---|
| GHS label elements |  |
| SIGNAL WORD | WARNING |

Hazard statement(s)

| | |
|------|--------------------------------|
| H302 | Harmful if swallowed. |
| H315 | Causes skin irritation. |
| H319 | Causes serious eye irritation. |
| H402 | Harmful to aquatic life |

Continued...

Supplementary statement(s)

Not Applicable

CLP classification (additional)

Not Applicable

Precautionary statement(s) Prevention

| | |
|-------------|--|
| P270 | Do not eat, drink or smoke when using this product. |
| P273 | Avoid release to the environment. |
| P280 | Wear protective gloves/protective clothing/eye protection/face protection. |

Precautionary statement(s) Response

| | |
|-----------------------|--|
| P362 | Take off contaminated clothing and wash before reuse. |
| 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. |
| P301+P312 | IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell. |

Precautionary statement(s) Storage

Not Applicable

Precautionary statement(s) Disposal

| | |
|-------------|---|
| P501 | Dispose of contents/container in accordance with local regulations. |
|-------------|---|

SECTION 3 COMPOSITION / INFORMATION ON INGREDIENTS**Substances**

See section below for composition of Mixtures

Mixtures

| CAS No | %[weight] | Name |
|---------------|-----------|--|
| 68891-38-3 | 10-<30 | <u>sodium linear-(C12-14)alkyl ether sulfate</u> |
| 97489-15-1 | 1-<10 | <u>(C14-17)-secondary-alkanesulfonic acid, sodium salt</u> |
| Not Available | NotSpec. | perfumes |
| 2634-33-5 | NotSpec. | <u>1,2-benzisothiazoline-3-one</u> |
| 2682-20-4 | NotSpec. | <u>2-methyl-4-isothiazolin-3-one</u> |
| 52-51-7 | NotSpec. | <u>2-bromo-2-nitropropan-1,3-diol</u> |
| | balance | Ingredients determined not to be hazardous |

SECTION 4 FIRST AID MEASURES**Description of first aid measures**

| | |
|---------------------|--|
| Eye Contact | <p>If this product comes in contact with the eyes:</p> <ul style="list-style-type: none"> ▶ Wash out immediately with fresh running water. ▶ 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. ▶ Seek medical attention without delay; if pain persists or recurs seek medical attention. ▶ Removal of contact lenses after an eye injury should only be undertaken by skilled personnel. |
| Skin Contact | <p>If skin contact occurs:</p> <ul style="list-style-type: none"> ▶ Immediately remove all contaminated clothing, including footwear. ▶ Flush skin and hair with running water (and soap if available). ▶ Seek medical attention in event of irritation. |
| Inhalation | <ul style="list-style-type: none"> ▶ If fumes, aerosols or combustion products are inhaled remove from contaminated area. ▶ Other measures are usually unnecessary. |
| Ingestion | <ul style="list-style-type: none"> ▶ If swallowed do NOT induce vomiting. ▶ If vomiting occurs, lean patient forward or place on left side (head-down position, if possible) to maintain open airway and prevent aspiration. ▶ Observe the patient carefully. ▶ Never give liquid to a person showing signs of being sleepy or with reduced awareness; i.e. becoming unconscious. ▶ Give water to rinse out mouth, then provide liquid slowly and as much as casualty can comfortably drink. ▶ Seek medical advice. |

Indication of any immediate medical attention and special treatment needed

Treat symptomatically.

SECTION 5 FIREFIGHTING MEASURES**Extinguishing media**

- ▶ Water spray or fog.
- ▶ Alcohol stable foam.
- ▶ Dry chemical powder.
- ▶ Carbon dioxide.

Special hazards arising from the substrate or mixture

| | |
|-----------------------------|--|
| Fire Incompatibility | <ul style="list-style-type: none"> ▶ Avoid contamination with oxidising agents i.e. nitrates, oxidising acids, chlorine bleaches, pool chlorine etc. as ignition may result |
|-----------------------------|--|

Advice for firefighters

| | |
|------------------------------|--|
| Fire Fighting | <ul style="list-style-type: none"> ▶ Alert Fire Brigade and tell them location and nature of hazard. ▶ Wear full body protective clothing with breathing apparatus. ▶ Prevent, by any means available, spillage from entering drains or water course. ▶ Use water delivered as a fine spray to control fire and cool adjacent area. |
| Fire/Explosion Hazard | <ul style="list-style-type: none"> ▶ Combustible. ▶ Slight fire hazard when exposed to heat or flame. ▶ Heating may cause expansion or decomposition leading to violent rupture of containers. ▶ On combustion, may emit toxic fumes of carbon monoxide (CO). <p>Combustion products include: carbon dioxide (CO₂) sulfur oxides (SO_x) other pyrolysis products typical of burning organic material. May emit poisonous fumes.</p> |
| 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 | <ul style="list-style-type: none"> ▶ Remove all ignition sources. ▶ Clean up all spills immediately. ▶ Avoid breathing vapours and contact with skin and eyes. ▶ Control personal contact with the substance, by using protective equipment. |
| Major Spills | <ul style="list-style-type: none"> ▶ Absorb or contain isothiazolinone liquid spills with sand, earth, inert material or vermiculite. ▶ The absorbent (and surface soil to a depth sufficient to remove all of the biocide) should be shovelled into a drum and treated with an 11% solution of sodium metabisulfite (Na₂S₂O₅) or sodium bisulfite (NaHSO₃), or 12% sodium sulfite (Na₂SO₃) and 8% hydrochloric acid (HCl). ▶ Glutathione has also been used to inactivate the isothiazolinones. ▶ Use 20 volumes of decontaminating solution for each volume of biocide, and let containers stand for at least 30 minutes to deactivate microbicide before disposal. |

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

SECTION 7 HANDLING AND STORAGE**Precautions for safe handling**

| | |
|--------------------------|---|
| Safe handling | <ul style="list-style-type: none"> ▶ DO NOT allow clothing wet with material to stay in contact with skin ▶ Avoid all personal contact, including inhalation. ▶ Wear protective clothing when risk of exposure occurs. ▶ Use in a well-ventilated area. ▶ Prevent concentration in hollows and sumps. |
| Other information | <ul style="list-style-type: none"> ▶ Store in original containers. ▶ Keep containers securely sealed. ▶ No smoking, naked lights or ignition sources. ▶ Store in a cool, dry, well-ventilated area. |

Conditions for safe storage, including any incompatibilities

| | |
|--------------------------------|--|
| Suitable container | <ul style="list-style-type: none"> ▶ Metal can or drum ▶ Packaging as recommended by manufacturer. ▶ Check all containers are clearly labelled and free from leaks. |
| Storage incompatibility | <p>Formaldehyde:</p> <ul style="list-style-type: none"> ▶ is a strong reducing agent ▶ may polymerise in air unless properly inhibited (usually with methanol up to 15%) and stored at controlled temperatures ▶ will polymerize with active organic material such as phenol ▶ reacts violently with strong oxidisers, hydrogen peroxide, potassium permanganate, acrylonitrile, caustics (sodium hydroxide, yielding formic acid and flammable hydrogen), magnesium carbonate, nitromethane, nitrogen oxides (especially at elevated temperatures), peroxyformic acid ▶ is incompatible with strong acids (hydrochloric acid forms carcinogenic bis(chloromethyl)ether*), amines, ammonia, aniline, bisulfides, gelatin, iodine, magnesite, phenol, some monomers, tannins, salts of copper, iron, silver. ▶ acid catalysis can produce impurities: methylal, methyl formate <p>Aqueous solutions of formaldehyde:</p> <ul style="list-style-type: none"> ▶ slowly oxidise in air to produce formic acid ▶ attack carbon steel <p>Concentrated solutions containing formaldehyde are:</p> <ul style="list-style-type: none"> ▶ unstable, both oxidising slowly to form formic acid and polymerising; in dilute aqueous solutions formaldehyde appears as monomeric hydrate (methylene glycol) - the more concentrated the solution the more polyoxymethylene glycol occurs as oligomers and polymers (methanol and amine-containing compounds inhibit polymer formation) ▶ readily subject to polymerisation, at room temperature, in the presence of air and moisture, to form paraformaldehyde (8-100 units of formaldehyde), a solid mixture of linear polyoxymethylene glycols containing 90-99% formaldehyde; a cyclic trimer, trioxane (CH₂O₃), may also form <p>Flammable and/or toxic gases are generated by the combination of aldehydes with azo, diazo compounds, dithiocarbamates, nitrides, and strong reducing agents</p> <p>*The empirical equation may be used to determine the concentration of bis(chloromethyl)ether (BCME) formed by reaction with HCl: $\log(\text{BCME})\text{ppb} = -2.25 + 0.67 \cdot \log(\text{HCHO})\text{ppm} + 0.77 \cdot \log(\text{HCl})\text{ppm}$ Assume values for formaldehyde, in air, of 1 ppm and for HCl of 5 ppm, resulting BCME concentration, in air, would be 0.02 ppb.</p> |

▶ Avoid reaction with oxidising agents

SECTION 8 EXPOSURE CONTROLS / PERSONAL PROTECTION

Control parameters

OCCUPATIONAL EXPOSURE LIMITS (OEL)

INGREDIENT DATA

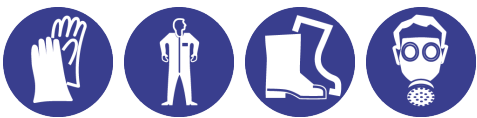
Not Available

EMERGENCY LIMITS

| Ingredient | Material name | TEEL-1 | TEEL-2 | TEEL-3 |
|--|---------------|---------------|---------------|---------------|
| Liqui Moly Scheiben-Reiniger-Super-Konzentrat / Windscreen Washer Additive | Not Available | Not Available | Not Available | Not Available |

| Ingredient | Original IDLH | Revised IDLH |
|---|---------------|---------------|
| sodium linear-(C12-14)alkyl ether sulfate | Not Available | Not Available |
| (C14-17)-secondary-alkanesulfonic acid, sodium salt | Not Available | Not Available |
| perfumes | Not Available | Not Available |
| 1,2-benzisothiazoline-3-one | Not Available | Not Available |
| 2-methyl-4-isothiazolin-3-one | Not Available | Not Available |
| 2-bromo-2-nitropropan-1,3-diol | Not Available | Not Available |

Exposure controls

| | |
|---|--|
| Appropriate engineering controls | <p>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.</p> <p>The basic types of engineering controls are:</p> <p>Process controls which involve changing the way a job activity or process is done to reduce the risk.</p> <p>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.</p> |
| Personal protection |  |
| Eye and face protection | <ul style="list-style-type: none"> ▶ 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. |
| Skin protection | See Hand protection below |
| Hands/feet protection | <ul style="list-style-type: none"> ▶ Wear chemical protective gloves, e.g. PVC. ▶ Wear safety footwear or safety gumboots, e.g. Rubber <p>NOTE:</p> <ul style="list-style-type: none"> ▶ 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. <p>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.</p> <p>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.</p> <p>Personal hygiene is a key element of effective hand care.</p> <ul style="list-style-type: none"> ▶ Butyl rubber gloves ▶ Nitrile rubber gloves |
| Body protection | See Other protection below |
| Other protection | <ul style="list-style-type: none"> ▶ Overalls. ▶ P.V.C. apron. ▶ Barrier cream. |
| Thermal hazards | Not Available |

Respiratory protection

Type A 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 | A-AUS | - | A-PAPR-AUS / Class 1 |
| up to 50 x ES | - | A-AUS / Class 1 | - |
| up to 100 x ES | - | A-2 | A-PAPR-2 ^ |

Continued...

Liqui Moly Scheiben-Reiniger-Super-Konzentrat / Windscreen Washer Additive

^ - 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.

SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

| | | | |
|---|--|--|----------------|
| Appearance | Clear light yellow liquid with a lemon odour; miscible with water. | | |
| Physical state | Liquid | Relative density (Water = 1) | 1.03 |
| Odour | Not Available | Partition coefficient n-octanol / water | Not Available |
| Odour threshold | Not Available | Auto-ignition temperature (°C) | Not Available |
| pH (as supplied) | 7.5 | Decomposition temperature | Not Available |
| Melting point / freezing point (°C) | Not Available | Viscosity (cSt) | Not Available |
| Initial boiling point and boiling range (°C) | 100 (initial) | Molecular weight (g/mol) | Not Applicable |
| Flash point (°C) | Not Available | Taste | Not Available |
| Evaporation rate | Not Available | Explosive properties | Not Available |
| Flammability | Not Available | 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) | 2.3 @20C | Gas group | Not Available |
| Solubility in water (g/L) | Miscible | pH as a solution (1%) | Not Available |
| Vapour density (Air = 1) | Not Available | VOC g/L | Not Available |

SECTION 10 STABILITY AND REACTIVITY

| | |
|---|--|
| Reactivity | See section 7 |
| Chemical stability | <ul style="list-style-type: none"> ▶ Unstable in the presence of incompatible materials. ▶ Product is considered stable. ▶ Hazardous polymerisation will not occur. |
| 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 | The material is not thought to produce either adverse health effects or irritation of the respiratory tract following inhalation (as classified by EC Directives using animal models). Nevertheless, adverse systemic effects have been produced following exposure of animals by at least one other route and good hygiene practice requires that exposure be kept to a minimum and that suitable control measures be used in an occupational setting. |
| Ingestion | Accidental ingestion of the material may be harmful; animal experiments indicate that ingestion of less than 150 gram may be fatal or may produce serious damage to the health of the individual. Taken by mouth, isothiazolinones have moderate to high toxicity. The major signs of toxicity are severe stomach irritation, lethargy, and inco-ordination. Ingestion of anionic surfactants may produce diarrhoea, bloated stomach, and occasional vomiting. |
| Skin Contact | This material can cause inflammation of the skin on contact in some persons. The material may accentuate any pre-existing dermatitis condition Repeated exposure may cause skin cracking, flaking or drying following normal handling and use. Solutions of 0.5% strength 1,2-benzisothiazoline-3-one (BIT) are irritating to the skin. Allergic effects also begin at 0.05% and have been confirmed in a series of case and patch test studies. When the substance was applied to human volunteers under an occlusive patch the maximum tolerated doses was 0.05%. Five hours after application of 0.1% (1000 ppm) one person showed moderate erythema with papule development which was interpreted as a reaction to the sticking plaster; in four persons there was mild reddening of the skin. Solutions of isothiazolinones may be irritating or even damaging to the skin, depending on concentration. A concentration of over 0.1% can irritate, and over 0.5% can cause severe irritation. Anionic surfactants can cause skin redness and pain, as well as a rash. Cracking, scaling and blistering can occur. Open cuts, abraded or irritated skin should not be exposed to this material |
| Eye | This material can cause eye irritation and damage in some persons. Solutions containing isothiazolinones may damage the mucous membranes and cornea. Animal testing showed very low concentrations (under 0.1%) did not cause irritation, while higher levels (3-5.5%) produced severe irritation and damage to the eye. Direct eye contact with some anionic surfactants in high concentration can cause severe damage to the cornea. Low concentrations can cause discomfort, excess blood flow, and corneal clouding and swelling. Recovery may take several days. |

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Liqui Moly Scheiben-Reiniger-Super-Konzentrat / Windscreen Washer Additive

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|---|---|---|
| Chronic | There has been some concern that this material can cause cancer or mutations but there is not enough data to make an assessment. Substance accumulation, in the human body, may occur and may cause some concern following repeated or long-term occupational exposure. There is some evidence that inhaling this product is more likely to cause a sensitisation reaction in some persons compared to the general population. There is limited evidence that, skin contact with this product is more likely to cause a sensitisation reaction in some persons compared to the general population. In a teratogenic study in rats concentrations of up to 40 mg/kg 1,2-benzisothiazoline-3-one (BIT) were neither embryotoxic nor teratogenic. The material is not mutagenic. In a 2-year carcinogenicity study with rats, BIT did not produce excess tumours. The results derived from this test are questionable because no dose series was administered and because there were too few animals. The isothiazolinones are known contact sensitisers. Sensitisation is more likely with the chlorinated species as opposed to the non-chlorinated species. Prolonged or repeated skin contact may cause degreasing with drying, cracking and dermatitis following. | |
| | TOXICITY | IRRITATION |
| Liqui Moly Scheiben-Reiniger-Super-Konzentrat / Windscreen Washer Additive | Not Available | Not Available |
| sodium linear-(C12-14)alkyl ether sulfate | TOXICITY | IRRITATION |
| | dermal (rat) LD50: >2000 mg/kg ^[1] Oral (rat) LD50: 4100 mg/kg ^[1] | Not Available |
| (C14-17)-secondary-alkanesulfonic acid, sodium salt | TOXICITY | IRRITATION |
| | Oral (rat) LD50: 500 mg/kg ^[2] | Nil reported * [Atotech] |
| 1,2-benzisothiazoline-3-one | TOXICITY | IRRITATION |
| | Oral (rat) LD50: 670 mg/kg ^[2] | *MAK Documentation Nil reported |
| 2-methyl-4-isothiazolin-3-one | TOXICITY | IRRITATION |
| | Not Available | Not Available |
| 2-bromo-2-nitropropan-1,3-diol | TOXICITY | IRRITATION |
| | dermal (rat) LD50: 64 mg/kg ^[2] | Eye (rabbit): 5 mg |
| | Inhalation (rat) LC50: >5 mg/L/4hr ^[2] | Skin (human): 10 mg moderate |
| | Inhalation (rat) LC50: 0.8 mg/L/4hr ^[2] Oral (rat) LD50: 180 mg/kg ^[2] | Skin (rabbit): 500 mg/24h mild Skin (rabbit): 80 mg moderate |
| 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 | |

| | |
|---|---|
| SODIUM LINEAR-(C12-14)ALKYL ETHER SULFATE | Alcohol ethoxysulfates (AES) are of low acute toxicity. Neat AES are irritant to the skin and eyes. |
| (C14-17)-SECONDARY-ALKANESULFONIC ACID, SODIUM SALT | Secondary alkyl sulfonate anionic surfactants (SAS) are readily absorbed after oral administration. They can cause skin irritation and are at risk of causing serious damage to eyes. Sub-chronic exposure revealed no adverse effects. There was no indication of increased risk of cancer after oral ingestion. |
| 1,2-BENZISOTHIAZOLINE-3-ONE | Acute toxicity data show that 1,2-benzisothiazoline-3-one (BIT) is moderately toxic by the oral and dermal routes but that this chemical is a severe eye irritant. Irritation to the skin from acute data show only mild skin irritation, but repeated dermal application indicated a more significant skin irritation response. The neurotoxicity observed in the rat acute oral toxicity study (piloerection and upward curvature of the spine at 300 mg/kg and above; decreased activity, prostration, decreased abdominal muscle tone, reduced righting reflex, and decreased rate and depth of breathing at 900 mg/kg) and the acute dermal toxicity study (upward curvature of the spine was observed in increased incidence, but this was absent after day 5 post-dose at a dose of 2000 mg/kg) were felt to be at exposures in excess of those expected from the use pattern of this pesticide and that such effects would not be observed at estimated exposure doses. Subchronic oral toxicity studies showed systemic effects after repeated oral administration including decreased body weight, increased incidence of forestomach hyperplasia, and non-glandular stomach lesions in rats. |
| 2-METHYL-4-ISOTHIAZOLIN-3-ONE | The material may be irritating to the eye, with prolonged contact causing inflammation. Repeated or prolonged exposure to irritants may produce conjunctivitis. 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. Considered to be a minor sensitiser in Kathon CG (1) (1). Bruze et al - Contact Dermatitis 20: 219-39, 1989 |
| 2-BROMO-2-NITROPROPAN-1,3-DIOL | Formaldehyde generators (releasers) are often used as preservatives. The maximum authorised concentration of free formaldehyde is 0.2% and must be labelled with the warning sign "contains formaldehyde" where the concentration exceeds 0.05%. The use of formaldehyde-releasing preservatives ensures that the level of free formaldehyde in the products is always low but sufficient to inhibit microbial growth - it disrupts metabolism to cause death of the organism. However there is a concern that formaldehyde generators can produce amines capable of causing cancers (nitrosamines) when used in formulations containing amines. Chemical with the aliphatic nitro group (-C-NO ₂) have been added to a list of DNA-reactive subgroups recognised by the National Toxicological Program (NTP, U.S. Dept Health and Human Services) for possible carcinogenic activity. |
| Liqui Moly Scheiben-Reiniger-Super-Konzentrat / Windscreen Washer Additive & SODIUM LINEAR-(C12-14)ALKYL ETHER SULFATE & 2-METHYL-4-ISOTHIAZOLIN-3-ONE | No significant acute toxicological data identified in literature search. |

Liqui Moly Scheiben-Reiniger-Super-Konzentrat / Windscreen Washer Additive

| | |
|---|--|
| Liqui Moly Scheiben-Reiniger-Super-Konzentrat / Windscreen Washer Additive & (C14-17)-SECONDARY-ALKANESULFONIC ACID, SODIUM SALT | for alkyl sulfates; alkane sulfonates and alpha-olefin sulfonates Most chemicals of this category are not defined substances, but mixtures of homologues with different alkyl chain lengths. Alpha-olefin sulfonates are mixtures of alkene sulfonate and hydroxyl alkane sulfonates with the sulfonate group in the terminal position and the double bond, or hydroxyl group, located at a position in the vicinity of the sulfonate group. Common physical and/or biological pathways result in structurally similar breakdown products, and are, together with the surfactant properties, responsible for similar environmental behavior and essentially identical hazard profiles with regard to human health. Acute toxicity: These substances are well absorbed after ingestion; penetration through the skin is however poor. |
| 1,2-BENZISOTHIAZOLINE-3-ONE & 2-METHYL-4-ISOTHIAZOLIN-3-ONE | The following information refers to contact allergens as a group and may not be specific to this product. 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. |
| 2-METHYL-4-ISOTHIAZOLIN-3-ONE & 2-BROMO-2-NITROPROPAN-1,3-DIOL | Asthma-like symptoms may continue for months or even years after exposure to the material ceases. This may be due to a non-allergenic condition known as reactive airways dysfunction syndrome (RADS) which can occur following exposure to high levels of highly irritating compound. Key criteria for the diagnosis of RADS include the absence of preceding respiratory disease, in a non-atopic individual, with abrupt onset of persistent asthma-like symptoms within minutes to hours of a documented exposure to the irritant. A reversible airflow pattern, on spirometry, with the presence of moderate to severe bronchial hyperreactivity on methacholine challenge testing and the lack of minimal lymphocytic inflammation, without eosinophilia, have also been included in the criteria for diagnosis of RADS. |
| 2-METHYL-4-ISOTHIAZOLIN-3-ONE & 2-BROMO-2-NITROPROPAN-1,3-DIOL | 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 available but does not fill the criteria for classification
 ✓ – Data required to make classification available
 ⊖ – Data Not Available to make classification

SECTION 12 ECOLOGICAL INFORMATION

Toxicity

| Ingredient | Endpoint | Test Duration (hr) | Species | Value | Source |
|---|----------|--------------------|-------------------------------|-------------|--------|
| sodium linear-(C12-14)alkyl ether sulfate | LC50 | 96 | Fish | >1- <10mg/L | 2 |
| sodium linear-(C12-14)alkyl ether sulfate | EC50 | 48 | Crustacea | 7.2mg/L | 2 |
| sodium linear-(C12-14)alkyl ether sulfate | EC50 | 72 | Algae or other aquatic plants | 1.8mg/L | 2 |
| sodium linear-(C12-14)alkyl ether sulfate | EC50 | 504 | Crustacea | 0.37mg/L | 2 |
| sodium linear-(C12-14)alkyl ether sulfate | NOEC | 672 | Fish | 0.1mg/L | 2 |
| (C14-17)-secondary-alkanesulfonic acid, sodium salt | LC50 | 96 | Fish | >1- <10mg/L | 2 |
| (C14-17)-secondary-alkanesulfonic acid, sodium salt | EC50 | 48 | Crustacea | 9.2mg/L | 2 |
| (C14-17)-secondary-alkanesulfonic acid, sodium salt | EC50 | 72 | Algae or other aquatic plants | >61mg/L | 2 |
| (C14-17)-secondary-alkanesulfonic acid, sodium salt | EC50 | 48 | Crustacea | 9.8mg/L | 2 |
| (C14-17)-secondary-alkanesulfonic acid, sodium salt | NOEC | 528 | Crustacea | 0.36mg/L | 2 |
| 1,2-benzisothiazoline-3-one | LC50 | 96 | Fish | 1.6mg/L | 4 |
| 1,2-benzisothiazoline-3-one | EC50 | 48 | Crustacea | 0.062mg/L | 4 |
| 1,2-benzisothiazoline-3-one | EC50 | 48 | Crustacea | 4.4mg/L | 4 |
| 2-methyl-4-isothiazolin-3-one | LC50 | 96 | Fish | 0.07mg/L | 4 |
| 2-methyl-4-isothiazolin-3-one | EC50 | 48 | Crustacea | 0.18mg/L | 4 |
| 2-methyl-4-isothiazolin-3-one | EC50 | 72 | Algae or other aquatic plants | 0.05mg/L | 4 |

Continued...

Liqui Moly Scheiben-Reiniger-Super-Konzentrat / Windscreen Washer Additive

| | | | | | |
|--------------------------------|------|-----|-------------------------------|---------------|---|
| 2-methyl-4-isothiazolin-3-one | EC50 | 96 | Algae or other aquatic plants | 0.538mg/L | 3 |
| 2-bromo-2-nitropropan-1,3-diol | LC50 | 96 | Fish | 20mg/L | 4 |
| 2-bromo-2-nitropropan-1,3-diol | EC50 | 48 | Crustacea | 0.78mg/L | 4 |
| 2-bromo-2-nitropropan-1,3-diol | EC50 | 72 | Algae or other aquatic plants | 0.25mg/L | 2 |
| 2-bromo-2-nitropropan-1,3-diol | EC50 | 504 | Crustacea | 0.27-0.88mg/L | 2 |
| 2-bromo-2-nitropropan-1,3-diol | NOEC | 72 | Algae or other aquatic plants | 0.08mg/L | 2 |

Legend:

Extracted from 1. IUCLID Toxicity Data 2. Europe ECHA Registered Substances - Ecotoxicological Information - Aquatic Toxicity 3. EPIWIN Suite V3.12 - 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

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.

For alkyl sulfates; alkane sulfonates and alpha-olefin sulfonates:

Environmental Fate: The similar physical and chemical properties of these chemicals result in similar ecotoxic action and environmental fate throughout the group. The lineal hydrophobic hydrocarbon chain structure and the polar sulfate or sulfonate groups confer surfactant properties and enable the commercial use of these substances as anionic surface active agents. Within each subcategory the most important parameter influencing ecotoxicity is the varying length of the alkyl chain. As ionic substances, the chemicals in this group all have extremely low vapor pressures, and therefore decompose before reaching their theoretical boiling points.

Environmental Fate: Isothiazolinones are antimicrobials used to control bacteria, fungi, and for wood preservation and antifouling agents. They are frequently used in personal care products such as shampoos and other hair care products, as well as certain paint formulations. The most common isothiazolinone combinations are 5-chloro-2-methyl-4-isothiazolin-3-one, (CMI), and 2-methyl-4-isothiazolin-3-one, (MI).

Aquatic Fate: 5-chloro-2-methyl-4-isothiazolin-3-one, (CMI), and 2-methyl-4-isothiazolin-3-one, (MI), undergo primary biological breakdown with half-lives of less than 24 hours in both oxygenated and low oxygen sediments with >55% breakdown occurring within 29 days.

For 2-bromo-2-nitropropan-1,3-diol (Bronopol)

Environmental fate:

One hydrolysis study indicates that bronopol appears to hydrolyse slowly at acidic or neutral pH conditions. Bronopol decomposes in aqueous solution on exposure to light. Increases in temperature increase decomposition.

Ecotoxicity:

Bird LD50: mallard duck 510 mg/kg

Bird dietary LC50: quail 4488 ppm

Daphnia magna EC50 (48 h): 1.4 mg/l

Fish LC50: trout 41.5 ppm

DO NOT discharge into sewer or waterways.

Persistence and degradability

| Ingredient | Persistence: Water/Soil | Persistence: Air |
|--------------------------------|-------------------------|------------------|
| 2-methyl-4-isothiazolin-3-one | HIGH | HIGH |
| 2-bromo-2-nitropropan-1,3-diol | LOW | LOW |

Bioaccumulative potential

| Ingredient | Bioaccumulation |
|--------------------------------|------------------------|
| 2-methyl-4-isothiazolin-3-one | LOW (LogKOW = -0.8767) |
| 2-bromo-2-nitropropan-1,3-diol | LOW (LogKOW = -0.6408) |

Mobility in soil

| Ingredient | Mobility |
|--------------------------------|-------------------|
| 2-methyl-4-isothiazolin-3-one | LOW (KOC = 27.88) |
| 2-bromo-2-nitropropan-1,3-diol | HIGH (KOC = 1) |

SECTION 13 DISPOSAL CONSIDERATIONS**Waste treatment methods**

| | |
|-------------------------------------|---|
| Product / Packaging disposal | <p>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.</p> <p>A Hierarchy of Controls seems to be common - the user should investigate:</p> <ul style="list-style-type: none"> ▶ Reduction ▶ Reuse ▶ Recycling ▶ Disposal (if all else fails) <p>This material may be recycled if unused, or if it has not been contaminated so as to make it unsuitable for its intended use.</p> <ul style="list-style-type: none"> ▶ DO NOT allow wash water from cleaning or process equipment to enter drains. ▶ It may be necessary to collect all wash water for treatment before disposal. ▶ In all cases disposal to sewer may be subject to local laws and regulations and these should be considered first. ▶ Where in doubt contact the responsible authority. ▶ Recycle wherever possible or consult manufacturer for recycling options. ▶ Consult State Land Waste Authority for disposal. |
|-------------------------------------|---|

- ▶ Bury or incinerate residue at an approved site.
- ▶ 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

SECTION 15 REGULATORY INFORMATION

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

SODIUM LINEAR-(C12-14)ALKYL ETHER SULFATE(68891-38-3) IS FOUND ON THE FOLLOWING REGULATORY LISTS

Australia Hazardous Substances Information System - Consolidated Lists

Australia Inventory of Chemical Substances (AICS)

(C14-17)-SECONDARY-ALKANESULFONIC ACID, SODIUM SALT(97489-15-1) IS FOUND ON THE FOLLOWING REGULATORY LISTS

Not Applicable

1,2-BENZISOTHAZOLINE-3-ONE(2634-33-5) IS FOUND ON THE FOLLOWING REGULATORY LISTS

Australia Hazardous Substances Information System - Consolidated Lists

Australia Inventory of Chemical Substances (AICS)

2-METHYL-4-ISOTHAZOLIN-3-ONE(2682-20-4) IS FOUND ON THE FOLLOWING REGULATORY LISTS

Australia Inventory of Chemical Substances (AICS)

2-BROMO-2-NITROPROPAN-1,3-DIOL(52-51-7) IS FOUND ON THE FOLLOWING REGULATORY LISTS

Australia Hazardous Substances Information System - Consolidated Lists

Australia Inventory of Chemical Substances (AICS)

| National Inventory | Status |
|-------------------------------|--|
| Australia - AICS | N ((C14-17)-secondary-alkanesulfonic acid, sodium salt) |
| Canada - DSL | Y |
| Canada - NDSL | N (sodium linear-(C12-14)alkyl ether sulfate; 1,2-benzisothiazoline-3-one; 2-bromo-2-nitropropan-1,3-diol; 2-methyl-4-isothiazolin-3-one; (C14-17)-secondary-alkanesulfonic acid, sodium salt) |
| China - IECSC | Y |
| Europe - EINEC / ELINCS / NLP | Y |
| Japan - ENCS | Y |
| Korea - KECI | Y |
| New Zealand - NZIoC | Y |
| Philippines - PICCS | Y |
| USA - TSCA | N ((C14-17)-secondary-alkanesulfonic acid, sodium salt) |
| Legend: | Y = All ingredients are on the inventory N = Not determined or one or more ingredients are not on the inventory and are not exempt from listing(see specific ingredients in brackets) |

SECTION 16 OTHER INFORMATION

Other information

Ingredients with multiple cas numbers

| Name | CAS No |
|---|-----------------------|
| sodium linear-(C12-14)alkyl ether sulfate | 68891-38-3, 9004-82-4 |

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.

A list of reference resources used to assist the committee may be found at:

www.chemwatch.net

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

Liqui Moly Scheiben-Reiniger-Super-Konzentrat / Windscreen Washer Additive

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

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

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