

# AC Orca

## Axichem Pty Ltd

Chemwatch: 4846-06

Version No: 6.1

Safety Data Sheet according to WHS Regulations (Hazardous Chemicals) Amendment 2020 and ADG requirements

Chemwatch Hazard Alert Code: 3

Issue Date: 29/11/2023

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L.GHS.AUS.EN

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

#### Product Identifier

|                               |  |
|-------------------------------|--|
| Product name                  | AC Orca  |
| Chemical Name                 | Not Applicable                                     |
| Synonyms                      | Not Available                                      |
| Proper shipping name          | CORROSIVE LIQUID, N.O.S. (contains propionic acid) |
| 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 | Acidifying and penetrating surfactant. |
|--------------------------|--|

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

|                         |  |
|-------------------------|--|
| Registered company name | Axichem Pty Ltd  |
| Address                 | 9 Palings Court Nerang QLD 4211 Australia                    |
| Telephone               | 07 5596 1736   |
| Fax                     | Not Available  |
| Website                 | <a href="http://www.axichem.com.au">www.axichem.com.au</a>   |
| Email                   | <a href="mailto:msds@axichem.com.au">msds@axichem.com.au</a> |

#### Emergency telephone number

|                                   |                                     |
|-----------------------------------|-------------------------------------|
| Association / Organisation        | CHEMWATCH EMERGENCY RESPONSE (24/7) |
| Emergency telephone numbers       | +61 1800 951 288                    |
| Other emergency telephone numbers | +61 3 9573 3188                     |

Once connected and if the message is not in your preferred language then please dial 01

### SECTION 2 Hazards identification

#### Classification of the substance or mixture

|                               |  |
|-------------------------------|--|
| Poisons Schedule              | S5   |
| Classification <sup>[1]</sup> | Acute Toxicity (Oral) Category 4, Skin Corrosion/Irritation Category 1B, Serious Eye Damage/Eye Irritation Category 1, Reproductive Toxicity Category 2, Specific Target Organ Toxicity - Repeated Exposure Category 2, Hazardous to the Aquatic Environment Long-Term Hazard Category 2 |
| 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 | Danger |
|-------------|--------|

**Hazard statement(s)**

|        |  |
|--------|--|
| H302   | Harmful if swallowed.  |
| H314   | Causes severe skin burns and eye damage.                                 |
| H361fd | Suspected of damaging fertility. Suspected of damaging the unborn child. |
| H373   | May cause damage to organs through prolonged or repeated exposure.       |
| H411   | Toxic to aquatic life with long lasting effects.                         |

**Precautionary statement(s) Prevention**

|      |  |
|------|--|
| P201 | Obtain special instructions before use.  |
| P260 | Do not breathe mist/vapours/spray.   |
| P264 | Wash all exposed external body areas thoroughly after handling.                  |
| P280 | Wear protective gloves, protective clothing, eye protection and face protection. |
| P270 | Do not eat, drink or smoke when using this product.                              |
| P273 | Avoid release to the environment.  |

**Precautionary statement(s) Response**

|                |  |
|----------------|--|
| P301+P330+P331 | IF SWALLOWED: Rinse mouth. Do NOT induce vomiting. If more than 15 mins from Doctor, INDUCE VOMITING (if conscious).             |
| P303+P361+P353 | IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water [or shower].                         |
| P305+P351+P338 | IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. |
| P308+P313      | IF exposed or concerned: Get medical advice/ attention.  |
| P310           | Immediately call a POISON CENTER/doctor/physician/first aider.   |
| P363           | Wash contaminated clothing before reuse.   |
| P391           | Collect spillage.  |
| P301+P312      | IF SWALLOWED: Call a POISON CENTER/doctor/physician/first aider if you feel unwell.  |
| P304+P340      | IF INHALED: Remove person to fresh air and keep comfortable for breathing.   |

**Precautionary statement(s) Storage**

|      |                  |
|------|------------------|
| P405 | Store locked up. |
|------|------------------|

**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                            |
|---------------|-----------|---------------------------------|
| 79-09-4       | 30-40     | <u>propionic acid</u>           |
| Not Available |           | (350 g/L)                       |
| 8002-43-5     | 30-40     | <u>lecithin</u>                 |
| Not Available |           | (350 g/L)                       |
| 9016-45-9     | 10-30     | <u>nonylphenol, ethoxylated</u> |
| 7732-18-5     | 10-30     | <u>water</u>                    |

**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**

Continued...

|                     |  |
|---------------------|--|
| <b>Eye Contact</b>  | <p>If this product comes in contact with the eyes:</p> <ul style="list-style-type: none"> <li>▶ Immediately hold eyelids apart and flush the eye continuously with running water.</li> <li>▶ 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.</li> <li>▶ Continue flushing until advised to stop by the Poisons Information Centre or a doctor, or for at least 15 minutes.</li> <li>▶ Transport to hospital or doctor without delay.</li> <li>▶ Removal of contact lenses after an eye injury should only be undertaken by skilled personnel.</li> </ul>   |
| <b>Skin Contact</b> | <p>If skin contact occurs:</p> <ul style="list-style-type: none"> <li>▶ Immediately remove all contaminated clothing, including footwear.</li> <li>▶ Flush skin and hair with running water (and soap if available).</li> <li>▶ Seek medical attention in event of irritation.</li> </ul>  |
| <b>Inhalation</b>   | <ul style="list-style-type: none"> <li>▶ If fumes or combustion products are inhaled remove from contaminated area.</li> <li>▶ Lay patient down. Keep warm and rested.</li> <li>▶ Prostheses such as false teeth, which may block airway, should be removed, where possible, prior to initiating first aid procedures.</li> <li>▶ Apply artificial respiration if not breathing, preferably with a demand valve resuscitator, bag-valve mask device, or pocket mask as trained. Perform CPR if necessary.</li> <li>▶ Transport to hospital, or doctor.</li> </ul>  |
| <b>Ingestion</b>    | <ul style="list-style-type: none"> <li>▶ For advice, contact a Poisons Information Centre or a doctor at once.</li> <li>▶ Urgent hospital treatment is likely to be needed.</li> <li>▶ <b>If swallowed do NOT induce vomiting.</b></li> <li>▶ If vomiting occurs, lean patient forward or place on left side (head-down position, if possible) to maintain open airway and prevent aspiration.</li> <li>▶ Observe the patient carefully.</li> <li>▶ Never give liquid to a person showing signs of being sleepy or with reduced awareness; i.e. becoming unconscious.</li> <li>▶ Give water to rinse out mouth, then provide liquid slowly and as much as casualty can comfortably drink.</li> <li>▶ Transport to hospital or doctor without delay.</li> </ul> |

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

Treat symptomatically.

### SECTION 5 Firefighting measures

#### Extinguishing media

- ▶ Water spray or fog.
- ▶ Foam.
- ▶ Dry chemical powder.
- ▶ BCF (where regulations permit).
- ▶ Carbon dioxide.

#### Special hazards arising from the substrate or mixture

|                             |   |
|-----------------------------|---|
| <b>Fire Incompatibility</b> | Avoid contamination with strong oxidising agents as ignition may result |
|-----------------------------|---|

#### Advice for firefighters

|                              |   |
|------------------------------|---|
| <b>Fire Fighting</b>         | <ul style="list-style-type: none"> <li>▶ Alert Fire Brigade and tell them location and nature of hazard.</li> <li>▶ Wear full body protective clothing with breathing apparatus.</li> <li>▶ Prevent, by any means available, spillage from entering drains or water course.</li> <li>▶ Use fire fighting procedures suitable for surrounding area.</li> <li>▶ <b>Do not approach containers suspected to be hot.</b></li> <li>▶ Cool fire exposed containers with water spray from a protected location.</li> <li>▶ If safe to do so, remove containers from path of fire.</li> <li>▶ Equipment should be thoroughly decontaminated after use.</li> </ul>                     |
| <b>Fire/Explosion Hazard</b> | <ul style="list-style-type: none"> <li>▶ The material is not readily combustible under normal conditions.</li> <li>▶ However, it will break down under fire conditions and the organic component may burn.</li> <li>▶ Not considered to be a significant fire risk.</li> <li>▶ Heat may cause expansion or decomposition with violent rupture of containers.</li> <li>▶ Decomposes on heating and may produce toxic fumes of carbon monoxide (CO).</li> <li>▶ May emit acrid smoke.</li> </ul> <p>Decomposes on heating and produces toxic fumes of:</p> <p>carbon dioxide (CO<sub>2</sub>)<br/> nitrogen oxides (NO<sub>x</sub>)<br/> phosphorus oxides (PO<sub>x</sub>)</p> |
| <b>HAZCHEM</b>               | 2X  |

## 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"> <li>▶ Clean up all spills immediately.</li> <li>▶ Avoid breathing vapours and contact with skin and eyes.</li> <li>▶ Control personal contact with the substance, by using protective equipment.</li> <li>▶ Contain and absorb spill with sand, earth, inert material or vermiculite.</li> <li>▶ Wipe up.</li> <li>▶ Place in a suitable, labelled container for waste disposal.</li> </ul>   |
| Major Spills | <p>Minor hazard.</p> <ul style="list-style-type: none"> <li>▶ Clear area of personnel.</li> <li>▶ Alert Fire Brigade and tell them location and nature of hazard.</li> <li>▶ Control personal contact with the substance, by using protective equipment as required.</li> <li>▶ Prevent spillage from entering drains or water ways.</li> <li>▶ Contain spill with sand, earth or vermiculite.</li> <li>▶ Collect recoverable product into labelled containers for recycling.</li> <li>▶ Absorb remaining product with sand, earth or vermiculite and place in appropriate containers for disposal.</li> <li>▶ Wash area and prevent runoff into drains or waterways.</li> <li>▶ If contamination of drains or waterways occurs, advise emergency services.</li> </ul> |

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"> <li>▶ Limit all unnecessary personal contact.</li> <li>▶ Wear protective clothing when risk of exposure occurs.</li> <li>▶ Use in a well-ventilated area.</li> <li>▶ Avoid contact with incompatible materials.</li> <li>▶ When handling, <b>DO NOT eat, drink or smoke.</b></li> <li>▶ Keep containers securely sealed when not in use.</li> <li>▶ Avoid physical damage to containers.</li> <li>▶ Always wash hands with soap and water after handling.</li> <li>▶ Work clothes should be laundered separately.</li> <li>▶ Use good occupational work practice.</li> <li>▶ Observe manufacturer's storage and handling recommendations contained within this SDS.</li> <li>▶ Atmosphere should be regularly checked against established exposure standards to ensure safe working conditions are maintained.</li> </ul> |
| Other information | <ul style="list-style-type: none"> <li>▶ Store in original containers.</li> <li>▶ Keep containers securely sealed.</li> <li>▶ Store in a cool, dry, well-ventilated area.</li> <li>▶ Store away from incompatible materials and foodstuff containers.</li> <li>▶ Protect containers against physical damage and check regularly for leaks.</li> <li>▶ Observe manufacturer's storage and handling recommendations contained within this SDS.</li> </ul>  |

### Conditions for safe storage, including any incompatibilities

|                         |  |
|-------------------------|--|
| Suitable container      | <ul style="list-style-type: none"> <li>▶ Lined metal can, lined metal pail/ can.</li> <li>▶ Plastic pail.</li> <li>▶ Polyliner drum.</li> <li>▶ Packing as recommended by manufacturer.</li> <li>▶ Check all containers are clearly labelled and free from leaks.</li> </ul> |
| Storage incompatibility | <ul style="list-style-type: none"> <li>▶ Segregate from alkalis, oxidising agents and chemicals readily decomposed by acids, i.e. cyanides, sulfides, carbonates.</li> </ul>   |

## SECTION 8 Exposure controls / personal protection

### Control parameters

Occupational Exposure Limits (OEL)

Continued...

INGREDIENT DATA

| Source                       | Ingredient     | Material name  | TWA               | STEL          | Peak          | Notes         |
|------------------------------|----------------|----------------|-------------------|---------------|---------------|---------------|
| Australia Exposure Standards | propionic acid | Propionic acid | 10 ppm / 30 mg/m3 | Not Available | Not Available | Not Available |

Emergency Limits

| Ingredient               | TEEL-1    | TEEL-2    | TEEL-3      |
|--------------------------|-----------|-----------|-------------|
| propionic acid           | 15 ppm    | 28 ppm    | 170 ppm     |
| nonylphenol, ethoxylated | 4.5 mg/m3 | 49 mg/m3  | 300 mg/m3   |
| nonylphenol, ethoxylated | 43 mg/m3  | 470 mg/m3 | 5,400 mg/m3 |

| Ingredient               | Original IDLH | Revised IDLH  |
|--------------------------|---------------|---------------|
| propionic acid           | Not Available | Not Available |
| lecithin                 | Not Available | Not Available |
| nonylphenol, ethoxylated | Not Available | Not Available |
| water                    | Not Available | Not Available |

Occupational Exposure Banding





| Ingredient               | Occupational Exposure Band Rating  | Occupational Exposure Band Limit |
|--------------------------|--|----------------------------------|
| nonylphenol, ethoxylated | E  | ≤ 0.1 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. |                                  |

MATERIAL DATA

None assigned. Refer to individual constituents.

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. 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.</p> <p>General exhaust is adequate under normal operating conditions. Local exhaust ventilation may be required in specific circumstances. If risk of overexposure exists, wear 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.</p> |                                  |
|                                  | Type of Contaminant:   | Air Speed:                       |
|                                  | solvent, vapours, degreasing etc., evaporating from tank (in still air).   | 0.25-0.5 m/s<br>(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<br>(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<br>(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<br>(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.  |
| Individual protection measures, such as personal protective equipment |      |
| Eye and face protection   | <ul style="list-style-type: none"> <li>▸ Safety glasses with side shields; or as required,</li> <li>▸ Chemical goggles. [AS/NZS 1337.1, EN166 or national equivalent]</li> <li>▸ 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].</li> </ul> |
| Skin protection   | See Hand protection below  |
| Hands/feet protection   | Wear chemical protective gloves, e.g. PVC.<br>Wear safety footwear.  |
| Body protection   | See Other protection below   |
| Other protection  | <ul style="list-style-type: none"> <li>▸ Overalls.</li> <li>▸ PVC Apron.</li> <li>▸ PVC protective suit may be required if exposure severe.</li> <li>▸ Eyewash unit.</li> <li>▸ Ensure there is ready access to a safety shower.</li> </ul>  |

## Recommended material(s)

### GLOVE SELECTION INDEX

Glove selection is based on a modified presentation of the:

**"Forsberg Clothing Performance Index".**

The effect(s) of the following substance(s) are taken into account in the **computer-generated** selection:

AC Orca

| Material       | CPI |
|----------------|-----|
| BUTYL          | C   |
| NATURAL RUBBER | C   |
| NEOPRENE       | C   |
| PE             | C   |
| PVA            | C   |
| VITON          | C   |

\* CPI - Chemwatch Performance Index

A: Best Selection

B: Satisfactory; may degrade after 4 hours continuous immersion

C: Poor to Dangerous Choice for other than short term immersion

**NOTE:** As a series of factors will influence the actual performance of the glove, a final selection must be based on detailed observation. -

\* Where the glove is to be used on a short term, casual or infrequent basis, factors such as "feel" or convenience (e.g. disposability), may dictate a choice of gloves which might otherwise be unsuitable following long-term or frequent use. A qualified practitioner should be consulted.

### Ansell Glove Selection

| Glove — In order of recommendation |
|------------------------------------|
| AlphaTec 02-100                    |
| AlphaTec® Solvex® 37-185           |
| AlphaTec® 58-008                   |
| AlphaTec® 58-530B                  |

## Respiratory protection

Type AB-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                      | AB-AUS P2            | -                    | AB-PAPR-AUS / Class 1 P2 |
| up to 50 x ES                      | -                    | AB-AUS / Class 1 P2  | -                        |
| up to 100 x ES                     | -                    | AB-2 P2              | AB-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(SO<sub>2</sub>), G = Agricultural chemicals, K = Ammonia(NH<sub>3</sub>), Hg = Mercury, NO = Oxides of nitrogen, MB = Methyl bromide, AX = Low boiling point organic compounds(below 65 degC)

|                          |
|--------------------------|
| AlphaTec® 58-530W        |
| AlphaTec® 58-735         |
| AlphaTec® 79-700         |
| AlphaTec® Solvex® 37-675 |
| DermaShield™ 73-711      |
| MICROFLEX® 63-864        |

The suggested gloves for use should be confirmed with the glove supplier.

## SECTION 9 Physical and chemical properties

### Information on basic physical and chemical properties

|   |   |  |                |
|---|---|--|----------------|
| <b>Appearance</b>                                   | Dark brown liquid with pungent vinegar like odour. Forms emulsion with water. |  |                |
| <b>Physical state</b>                               | Liquid  | <b>Relative density (Water = 1)</b>            | 1.027          |
| <b>Odour</b>  | Not Available   | <b>Partition coefficient n-octanol / water</b> | Not Available  |
| <b>Odour threshold</b>                              | Not Available   | <b>Auto-ignition temperature (°C)</b>          | Not Available  |
| <b>pH (as supplied)</b>                             | Not Applicable  | <b>Decomposition temperature (°C)</b>          | Not Available  |
| <b>Melting point / freezing point (°C)</b>          | Not Available   | <b>Viscosity (cSt)</b>                         | Not Available  |
| <b>Initial boiling point and boiling range (°C)</b> | Not Available   | <b>Molecular weight (g/mol)</b>                | Not Applicable |
| <b>Flash point (°C)</b>                             | Not Applicable  | <b>Taste</b>                                   | Not Available  |
| <b>Evaporation rate</b>                             | Not Available   | <b>Explosive properties</b>                    | Not Available  |
| <b>Flammability</b>                                 | Not Applicable  | <b>Oxidising properties</b>                    | Not Available  |
| <b>Upper Explosive Limit (%)</b>                    | Not Applicable  | <b>Surface Tension (dyn/cm or mN/m)</b>        | Not Available  |
| <b>Lower Explosive Limit (%)</b>                    | Not Applicable  | <b>Volatile Component (%vol)</b>               | Not Available  |
| <b>Vapour pressure (kPa)</b>                        | Not Available   | <b>Gas group</b>                               | Not Available  |
| <b>Solubility in water</b>                          | Miscible  | <b>pH as a solution (1%)</b>                   | 3.6            |
| <b>Vapour density (Air = 1)</b>                     | Not Available   | <b>VOC g/L</b>                                 | Not Available  |

## SECTION 10 Stability and reactivity

|   |  |
|---|--|
| <b>Reactivity</b>                         | See section 7  |
| <b>Chemical stability</b>                 | <ul style="list-style-type: none"> <li>▶ Unstable in the presence of incompatible materials.</li> <li>▶ Product is considered stable.</li> <li>▶ Hazardous polymerisation will not occur.</li> </ul> |
| <b>Possibility of hazardous reactions</b> | See section 7  |
| <b>Conditions to avoid</b>                | See section 7  |
| <b>Incompatible materials</b>             | See section 7  |
| <b>Hazardous decomposition products</b>   | See section 5  |

## SECTION 11 Toxicological information

### Information on toxicological effects

|                |   |
|----------------|---|
| <b>Inhaled</b> | Acidic corrosives produce respiratory tract irritation with coughing, choking and mucous membrane damage. Symptoms of exposure may include dizziness, headache, nausea and weakness. In more severe exposures, pulmonary oedema may be evident either immediately or after a latent period of 5-72 hours. Symptoms of pulmonary oedema include a tightness in the chest, dyspnoea, frothy sputum and cyanosis. Examination may reveal hypotension, a weak and rapid pulse and moist rates. Death, due to anoxia, may occur several hours after onset of the pulmonary oedema. |
|----------------|---|

|                     |  |
|---------------------|--|
| <b>Ingestion</b>    | The material can produce chemical burns within the oral cavity and gastrointestinal tract following ingestion.   |
| <b>Skin Contact</b> | Evidence exists, or practical experience predicts, that the material either produces inflammation of the skin in a substantial number of individuals following direct contact, and/or produces significant inflammation when applied to the healthy intact skin of animals, for up to four hours, such inflammation being present twenty-four hours or more after the end of the exposure period. Skin irritation may also be present after prolonged or repeated exposure; this may result in a form of contact dermatitis (nonallergic). The dermatitis is often characterised by skin redness (erythema) and swelling (oedema) which may progress to blistering (vesiculation), scaling and thickening of the epidermis. At the microscopic level there may be intercellular oedema of the spongy layer of the skin (spongiosis) and intracellular oedema of the epidermis. The material may accentuate any pre-existing skin condition |
| <b>Eye</b>          | When applied to the eye(s) of animals, the material produces severe ocular lesions which are present twenty-four hours or more after instillation.   |
| <b>Chronic</b>      | Repeated or prolonged exposure to corrosives may result in the erosion of teeth, inflammatory and ulcerative changes in the mouth and necrosis (rarely) of the jaw. Bronchial irritation, with cough, and frequent attacks of bronchial pneumonia may ensue. Gastrointestinal disturbances may also occur. Chronic exposures may result in dermatitis and/or conjunctivitis.   |

| AC Orca                  | TOXICITY  | IRRITATION  |
|--------------------------|---|---|
|                          | Dermal (Rabbit) LD50: >5000 mg/kg <sup>[2]</sup>                  | Not Available   |
|                          | Inhalation (Rat) LC50: >6040 mg/m <sup>3</sup> /4h <sup>[2]</sup> |   |
|                          | Oral (Rat) LD50: >5000 mg/kg <sup>[2]</sup>                       |   |
| propionic acid           | TOXICITY  | IRRITATION  |
|                          | Dermal (rabbit) LD50: 500 mg/kg <sup>[2]</sup>                    | Eye (rabbit): 990 mg - SEVERE                             |
|                          | Inhalation(Rat) LC50: >4.9 mg/l4h <sup>[2]</sup>                  | Eye: adverse effect observed (irritating) <sup>[1]</sup>  |
|                          | Oral (Rat) LD50: 2600 mg/kg <sup>[2]</sup>                        | Skin (rabbit):495 mg(open)-SEVERE                         |
|                          |   | Skin: adverse effect observed (corrosive) <sup>[1]</sup>  |
| lecithin                 | TOXICITY  | IRRITATION  |
|                          | Not Available   | Not Available   |
| nonylphenol, ethoxylated | TOXICITY  | IRRITATION  |
|                          | Dermal (rabbit) LD50: 2943.2 mg/kg <sup>[2]</sup>                 | Eye (rabbit): 5 mg SEVERE                                 |
|                          | Oral (Rat) LD50: 1310 mg/kg <sup>[2]</sup>                        | Eye: adverse effect observed (irritating) <sup>[1]</sup>  |
|                          |   | Skin (human): 15 mg/3D mild                               |
|                          |   | Skin (rabbit): 500 mg mild                                |
|                          |   | Skin: adverse effect observed (irritating) <sup>[1]</sup> |
| water                    | TOXICITY  | IRRITATION  |
|                          | Oral (Rat) LD50: >90000 mg/kg <sup>[2]</sup>                      | 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

|                       |  |
|-----------------------|--|
| <b>AC Orca</b>        | [for similar formulation, Manufacturer]  |
| <b>PROPIONIC ACID</b> | <p>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.</p> <p>The material may produce severe skin irritation after prolonged or repeated exposure, and may produce a contact dermatitis (nonallergic). This form of dermatitis is often characterised by skin redness (erythema) thickening of the epidermis. Histologically there may be intercellular oedema of the spongy layer (spongiosis) and intracellular oedema of the epidermis. Prolonged contact is unlikely, given the severity of response, but repeated exposures may produce severe ulceration.</p> |



**NONYLPHENOL,  
ETHOXYLATED**

For nonylphenol and its compounds:

Alkylphenols like nonylphenol and bisphenol A have estrogenic effects in the body. They are known as xenoestrogens. Estrogenic substances and other endocrine disruptors are compounds that have hormone-like effects in both wildlife and humans. Xenoestrogens usually function by binding to estrogen receptors and acting competitively against natural estrogens. Nonylphenol has been found to act as an agonist of GPER (G protein-coupled estrogen receptor). Nonylphenol has been shown to mimic the natural hormone 17 $\beta$ -estradiol, and it competes with the endogenous hormone for binding with the estrogen receptors ER $\alpha$  and ER $\beta$ .

Effects in pregnant women.

Subcutaneous injections of nonylphenol in late pregnancy causes the expression of certain placental and uterine proteins, namely CaBP-9k, which suggest it can be transferred through the placenta to the fetus. It has also been shown to have a higher potency on the first trimester placenta than the endogenous estrogen 17 $\beta$ -estradiol. In addition, early prenatal exposure to low doses of nonylphenol cause an increase in apoptosis (programmed cell death) in placental cells. These "low doses" ranged from 10<sup>-13</sup>-10<sup>-9</sup> M, which is lower than what is generally found in the environment.

Nonylphenol has also been shown to affect cytokine signaling molecule secretions in the human placenta. In vitro cell cultures of human placenta during the first trimester were treated with nonylphenol, which increase the secretion of cytokines including interferon gamma, interleukin 4, and interleukin 10, and reduced the secretion of tumor necrosis factor alpha. This unbalanced cytokine profile at this part of pregnancy has been documented to result in implantation failure, pregnancy loss, and other complications.

Effects on metabolism

Nonylphenol has been shown to act as an obesity enhancing chemical or obesogen, though it has paradoxically been shown to have anti-obesity properties. Growing embryos and newborns are particularly vulnerable when exposed to nonylphenol because low-doses can disrupt sensitive processes that occur during these important developmental periods. Prenatal and perinatal exposure to nonylphenol has been linked with developmental abnormalities in adipose tissue and therefore in metabolic hormone synthesis and release. Specifically, by acting as an estrogen mimic, nonylphenol has generally been shown to interfere with hypothalamic appetite control. The hypothalamus responds to the hormone leptin, which signals the feeling of fullness after eating, and nonylphenol has been shown to both increase and decrease eating behavior by interfering with leptin signaling in the midbrain. Nonylphenol has been shown mimic the action of leptin on neuropeptide Y and anorectic POMC neurons, which has an anti-obesity effect by decreasing eating behavior. This was seen when estrogen or estrogen mimics were injected into the ventromedial hypothalamus. On the other hand, nonylphenol has been shown to increase food intake and have obesity enhancing properties by lowering the expression of these anorexigenic neurons in the brain. Additionally, nonylphenol affects the expression of ghrelin: an enzyme produced by the stomach that stimulates appetite. Ghrelin expression is positively regulated by estrogen signaling in the stomach, and it is also important in guiding the differentiation of stem cells into adipocytes (fat cells). Thus, acting as an estrogen mimic, prenatal and perinatal exposure to nonylphenol has been shown to increase appetite and encourage the body to store fat later in life. Finally, long-term exposure to nonylphenol has been shown to affect insulin signaling in the liver of adult male rats.

Cancer

Nonylphenol exposure has also been associated with breast cancer. It has been shown to promote the proliferation of breast cancer cells, due to its agonistic activity on ER $\alpha$  (estrogen receptor alpha) in estrogen-dependent and estrogen-independent breast cancer cells. Some argue that nonylphenol's suggested estrogenic effect coupled with its widespread human exposure could potentially influence hormone-dependent breast cancer disease

Polyethers, for example, ethoxylated surfactants and polyethylene glycols, are highly susceptible towards air oxidation as the ether oxygens will stabilize intermediary radicals involved. Investigations of a chemically well-defined alcohol (pentaethylene glycol mono-n-dodecyl ether) ethoxylate, showed that polyethers form complex mixtures of oxidation products when exposed to air.

Sensitization studies in guinea pigs revealed that the pure nonoxidized surfactant itself is nonsensitizing but that many of the investigated oxidation products are sensitizers. Two hydroperoxides were identified in the oxidation mixture, but only one (16-hydroperoxy-3,6,9,12,15-pentaoxaheptacosan-1-ol) was stable enough to be isolated. It was found to be a strong sensitizer in LLNA (local lymph node assay for detection of sensitization capacity). The formation of other hydroperoxides was indicated by the detection of their corresponding aldehydes in the oxidation mixture.

On the basis of the lower irritancy, nonionic surfactants are often preferred to ionic surfactants in topical products. However, their susceptibility towards autooxidation also increases the irritation. Because of their irritating effect, it is difficult to diagnose ACD to these compounds by patch testing.

Allergic Contact Dermatitis—Formation, Structural Requirements, and Reactivity of Skin Sensitizers.

Ann-Therese Karlberg et al; Chem. Res. Toxicol. 2008, 21, 53-69

Polyethylene glycols (PEGs) have a wide variety of PEG-derived mixtures due to their readily linkable terminal primary hydroxyl groups in combination with many possible compounds and complexes such as ethers, fatty acids, castor oils, amines, propylene glycols, among other derivatives. PEGs and their derivatives are broadly utilized in cosmetic products as surfactants, emulsifiers, cleansing agents, humectants, and skin conditioners.

PEGs and PEG derivatives were generally regulated as safe for use in cosmetics, with the conditions that impurities and by-products, such as ethylene oxides and 1,4-dioxane, which are known carcinogenic materials, should be removed before they are mixed in cosmetic formulations.

Most PEGs are commonly available commercially as mixtures of different oligomer sizes in broadly- or narrowly-defined molecular weight (MW) ranges. For instance, PEG-10,000 typically designates a mixture of PEG molecules (n = 195 to 265) having an average MW of 10,000. PEG is also known as polyethylene oxide (PEO) or polyoxyethylene (POE), with the three names being chemical synonyms. However, PEGs mainly refer to oligomers and polymers with molecular masses below 20,000 g/mol, while PEOs are polymers with molecular masses above 20,000 g/mol, and POEs are polymers of any molecular mass. Relatively small molecular weight PEGs are produced by the chemical reaction between ethylene oxide and water or ethylene glycol (or other ethylene glycol oligomers), as catalyzed by acidic or basic catalysts. To produce PEO or high-molecular weight PEGs, synthesis is performed by suspension polymerization. It is necessary to hold the growing polymer chain in solution during the course of the poly-condensation process. The reaction is catalyzed by magnesium-, aluminum-, or calcium-organoelement compounds. To prevent coagulation of polymer chains in the solution, chelating additives such as dimethylglyoxime are used

Safety Evaluation of Polyethylene Glycol (PEG) Compounds for Cosmetic Use: Toxicol Res 2015; 31:105-136 The Korean

## Society of Toxicology

<http://doi.org/10.5487/TR.2015.31.2.105>

Human beings have regular contact with alcohol ethoxylates through a variety of industrial and consumer products such as soaps, detergents, and other cleaning products. Exposure to these chemicals can occur through ingestion, inhalation, or contact with the skin or eyes. Studies of acute toxicity show that volumes well above a reasonable intake level would have to occur to produce any toxic response. Moreover, no fatal case of poisoning with alcohol ethoxylates has ever been reported. Multiple studies investigating the acute toxicity of alcohol ethoxylates have shown that the use of these compounds is of low concern in terms of oral and dermal toxicity.

Clinical animal studies indicate these chemicals may produce gastrointestinal irritation such as ulcerations of the stomach, pilo-erection, diarrhea, and lethargy. Similarly, slight to severe irritation of the skin or eye was generated when undiluted alcohol ethoxylates were applied to the skin and eyes of rabbits and rats. The chemical shows no indication of being a genotoxin, carcinogen, or mutagen (HERA 2007). No information was available on levels at which these effects might occur, though toxicity is thought to be substantially lower than that of nonylphenol ethoxylates.

Polyethers, for example, ethoxylated surfactants and polyethylene glycols, are highly susceptible towards air oxidation as the ether oxygens will stabilize intermediary radicals involved. Investigations of a chemically well-defined alcohol (pentaethylene glycol mono-n-dodecyl ether) ethoxylate, showed that polyethers form complex mixtures of oxidation products when exposed to air.

Sensitization studies in guinea pigs revealed that the pure nonoxidized surfactant itself is nonsensitizing but that many of the investigated oxidation products are sensitizers. Two hydroperoxides were identified in the oxidation mixture, but only one (16-hydroperoxy-3,6,9,12,15-pentaoxaheptacosan-1-ol) was stable enough to be isolated. It was found to be a strong sensitizer in LLNA (local lymph node assay for detection of sensitization capacity). The formation of other hydroperoxides was indicated by the detection of their corresponding aldehydes in the oxidation mixture.

On the basis of the lower irritancy, nonionic surfactants are often preferred to ionic surfactants in topical products. However, their susceptibility towards autooxidation also increases the irritation. Because of their irritating effect, it is difficult to diagnose allergic contact dermatitis (ACD) to these compounds by patch testing.

Overall, alcohol alkoxyates (AAs) are not expected to be systemically toxic, although some short chain ethylene glycol ethers, e.g. methyl and ethyl homologues are of concern for a range of adverse health effects. They include skin and eye irritation, liver and kidney damage, bone marrow and central nervous system (CNS) depression, testicular atrophy, developmental toxicity, and immunotoxicity. For higher propyl and butyl homologues, the toxicity involves haemolysis (anaemia) with secondary effects relating to haemosiderin accumulation in the spleen, liver and kidney, and compensatory haematopoiesis in the bone marrow. Systemic toxicity was shown to decrease with increasing alkyl chain lengths and/or alkoxylation degrees (ECETOC, 2005; US EPA, 2010). The chemicals ethylene glycol hexyl ether (with a longer alkyl chain length, CAS No. 112-25-4) and diethylene glycol butyl ether (with a higher ethoxylation degree, CAS No. 112-34-5) have no evidence of systemic effects including haemolysis. Commercially available AAs are mixtures of homologues of varying carbon chain lengths and it is possible that some of the chemicals with an average alkyl chain length  $C \geq 6$  may also contain shorter alkyl chains  $C < 6$ . It is not practical to quantify the proportion of shorter  $C < 6$  chain lengths present in such chemicals, or these shorter chain lengths may not be present at all. The available data suggest a lack of systemic toxicity for the AE chemicals with potential short alkyl chain presence (NICNASa); therefore, the toxicity of the chemicals in this assessment is unlikely to be significantly affected by the presence of shorter chain alkyl groups.

Alcohol ethoxylates are according to CESIO (2000) classified as Irritant or Harmful depending on the number of EO-units:

EO < 5 gives Irritant (Xi) with R38 (Irritating to skin) and R41 (Risk of serious damage to eyes)

EO > 5-15 gives Harmful (Xn) with R22 (Harmful if swallowed) - R38/41

EO > 15-20 gives Harmful (Xn) with R22-41

>20 EO is not classified (CESIO 2000)

Oxo-AE, C13 EO10 and C13 EO15, are Irritating (Xi) with R36/38 (Irritating to eyes and skin).

AE are not included in Annex 1 of the list of dangerous substances of the Council Directive 67/548/EEC

In general, alcohol ethoxylates (AE) are readily absorbed through the skin of guinea pigs and rats and through the gastrointestinal mucosa of rats. AE are quickly eliminated from the body through the urine, faeces, and expired air (CO<sub>2</sub>). Orally dosed AE was absorbed rapidly and extensively in rats, and more than 75% of the dose was absorbed. When applied to the skin of humans, the doses were absorbed slowly and incompletely (50% absorbed in 72 hours). Half of the absorbed surfactant was excreted promptly in the urine and smaller amounts of AE appeared in the faeces and expired air (CO<sub>2</sub>). The metabolism of C12 AE yields PEG, carboxylic acids, and CO<sub>2</sub> as metabolites. The LD<sub>50</sub> values after oral administration to rats range from about 1-15 g/kg body weight indicating a low to moderate acute toxicity.

The ability of nonionic surfactants to cause a swelling of the stratum corneum of guinea pig skin has been studied. The swelling mechanism of the skin involves a combination of ionic binding of the hydrophilic group as well as hydrophobic interactions of the alkyl chain with the substrate. One of the mechanisms of skin irritation caused by surfactants is considered to be denaturation of the proteins of skin. It has also been established that there is a connection between the potential of surfactants to denature protein in vitro and their effect on the skin. Nonionic surfactants do not carry any net charge and, therefore, they can only form hydrophobic bonds with proteins. For this reason, proteins are not deactivated by nonionic surfactants, and proteins with poor solubility are not solubilized by nonionic surfactants. A substantial amount of toxicological data and information in vivo and in vitro demonstrates that there is no evidence for alcohol ethoxylates (AEs) being genotoxic, mutagenic or carcinogenic. No adverse reproductive or developmental effects were observed. The majority of available toxicity studies revealed NOAELs in excess of 100 mg/kg bw/d but the lowest NOAEL for an individual AE was established to be 50 mg/kg bw/day. This value was subsequently considered as a conservative, representative value in the risk assessment of AE. The effects were restricted to changes in organ weights with no histopathological organ changes with the exception of liver hypertrophy (indicative of an adaptive response to metabolism rather than a toxic effect). It is noteworthy that there was practically no difference in the NOAEL in oral studies of 90-day or 2 years of duration in rats. A comparison of the aggregate consumer exposure and the systemic NOAEL (taking into account an oral absorption value of 75%) results in a Margin of Exposure of 5,800. Taking into account the conservatism in the exposure assessment and the assigned systemic NOAEL, this margin of exposure is considered more than adequate to account for the inherent uncertainty and variability of the hazard database and inter and intra-species extrapolations.

AEs are not contact sensitisers. Neat AE are irritating to eyes and skin. The irritation potential of aqueous solutions of AEs depends on concentrations. Local dermal effects due to direct or indirect skin contact in certain use scenarios where the products are diluted are not of concern as AEs are not expected to be irritating to the skin at in-use concentrations. Potential irritation of the respiratory tract is not a concern given the very low levels of airborne AE generated as a consequence of spray cleaner aerosols or laundry powder detergent dust.

In summary, the human health risk assessment has demonstrated that the use of AE in household laundry and cleaning detergents is safe and does not cause concern with regard to consumer use.

For high boiling ethylene glycol ethers (typically triethylene- and tetraethylene glycol ethers):

**Skin absorption:** Available skin absorption data for triethylene glycol ether (TGBE), triethylene glycol methyl ether (TGME), and triethylene glycol ethylene ether (TGEE) suggest that the rate of absorption in skin of these three glycol ethers is 22 to 34 micrograms/cm<sup>2</sup>/hr, with the methyl ether having the highest permeation constant and the butyl ether having the lowest. The rates of absorption of TGBE, TGEE and TGME are at least 100-fold less than EGME, EGEE, and EGBE, their ethylene glycol monoalkyl ether counterparts, which have absorption rates that range from 214 to 2890 micrograms/cm<sup>2</sup>/hr. Therefore, an increase in either the chain length of the alkyl substituent or the number of ethylene glycol moieties appears to lead to a decreased rate of percutaneous absorption. However, since the ratio of the change in values of the ethylene glycol to the diethylene glycol series is larger than that

of the diethylene glycol to triethylene glycol series, the effect of the length of the chain and number of ethylene glycol moieties on absorption diminishes with an increased number of ethylene glycol moieties. Therefore, although tetraethylene glycol methyl ether (TetraME) and tetraethylene glycol butyl ether (TetraBE) are expected to be less permeable to skin than TGME and TGBE, the differences in permeation between these molecules may only be slight.

**Metabolism:** The main metabolic pathway for metabolism of ethylene glycol monoalkyl ethers (EGME, EGEE, and EGBE) is oxidation via alcohol and aldehyde dehydrogenases (ALD/ADH) that leads to the formation of an alkoxy acids. Alkoxy acids are the only toxicologically significant metabolites of glycol ethers that have been detected *in vivo*. The principal metabolite of TGME is believed to be 2-[2-(2-methoxyethoxy)ethoxy] acetic acid. Although ethylene glycol, a known kidney toxicant, has been identified as an impurity or a minor metabolite of glycol ethers in animal studies it does not appear to contribute to the toxicity of glycol ethers.

The metabolites of category members are not likely to be metabolized to any large extent to toxic molecules such as ethylene glycol or the mono alkoxy acids because metabolic breakdown of the ether linkages also has to occur

**Acute toxicity:** Category members generally display low acute toxicity by the oral, inhalation and dermal routes of exposure.

Signs of toxicity in animals receiving lethal oral doses of TGBE included loss of righting reflex and flaccid muscle tone, coma, and heavy breathing. Animals administered lethal oral doses of TGEE exhibited lethargy, ataxia, blood in the urogenital area and piloerection before death.

**Irritation:** The data indicate that the glycol ethers may cause mild to moderate skin irritation. TGEE and TGBE are highly irritating to the eyes. Other category members show low eye irritation.

**Repeat dose toxicity:** Results of these studies suggest that repeated exposure to moderate to high doses of the glycol ethers in this category is required to produce systemic toxicity

In a 21-day dermal study, TGME, TGEE, and TGBE were administered to rabbits at 1,000 mg/kg/day. Erythema and oedema were observed. In addition, testicular degeneration (scored as trace in severity) was observed in one rabbit given TGEE and one rabbit given TGME. Testicular effects included spermatid giant cells, focal tubular hypospermatogenesis, and increased cytoplasmic vacuolisation. Due to a high incidence of similar spontaneous changes in normal New Zealand White rabbits, the testicular effects were considered not to be related to treatment. Thus, the NOAELs for TGME, TGEE and TGBE were established at 1000 mg/kg/day. Findings from this report were considered unremarkable.

A 2-week dermal study was conducted in rats administered TGME at doses of 1,000, 2,500, and 4,000 mg/kg/day. In this study, significantly-increased red blood cells at 4,000 mg/kg/day and significantly-increased urea concentrations in the urine at 2,500 mg/kg/day were observed. A few of the rats given 2,500 or 4,000 mg/kg/day had watery caecal contents and/or haemolysed blood in the stomach. These gross pathologic observations were not associated with any histologic abnormalities in these tissues or alterations in haematologic and clinical chemistry parameters. A few males and females treated with either 1,000 or 2,500 mg/kg/day had a few small scabs or crusts at the test site. These alterations were slight in degree and did not adversely affect the rats.

In a 13-week drinking water study, TGME was administered to rats at doses of 400, 1,200, and 4,000 mg/kg/day. Statistically-significant changes in relative liver weight were observed at 1,200 mg/kg/day and higher. Histopathological effects included hepatocellular cytoplasmic vacuolisation (minimal to mild in most animals) and hypertrophy (minimal to mild) in males at all doses and hepatocellular hypertrophy (minimal to mild) in high dose females. These effects were statistically significant at 4,000 mg/kg/day. Cholangiofibrosis was observed in 7/15 high-dose males; this effect was observed in a small number of bile ducts and was of mild severity. Significant, small decreases in total test session motor activity were observed in the high-dose animals, but no other neurological effects were observed. The changes in motor activity were secondary to systemic toxicity.

**Mutagenicity:** Mutagenicity studies have been conducted for several category members. All *in vitro* and *in vivo* studies were negative at concentrations up to 5,000 micrograms/plate and 5,000 mg/kg, respectively, indicating that the category members are not genotoxic at the concentrations used in these studies. The uniformly negative outcomes of various mutagenicity studies performed on category members lessen the concern for carcinogenicity.

**Reproductive toxicity:** Although mating studies with either the category members or surrogates have not been performed, several of the repeated dose toxicity tests with the surrogates have included examination of reproductive organs. A lower molecular weight glycol ether, ethylene glycol methyl ether (EGME), has been shown to be a testicular toxicant. In addition, results of repeated dose toxicity tests with TGME clearly show testicular toxicity at an oral dose of 4,000 mg/kg/day four times greater than the limit dose of 1,000 mg/kg/day recommended for repeat dose studies. It should be noted that TGME is 350 times less potent for testicular effects than EGME. TGBE is not associated with testicular toxicity, TetraME is not likely to be metabolised by any large extent to 2-MAA (the toxic metabolite of EGME), and a mixture containing predominantly methylated glycol ethers in the C5-C11 range does not produce testicular toxicity (even when administered intravenously at 1,000 mg/kg/day).

|  |   |
|--|---|
|  | <p><b>Developmental toxicity:</b> The bulk of the evidence shows that effects on the foetus are not noted in treatments with 1,000 mg/kg/day during gestation. At 1,250 to 1,650 mg/kg/day TGME (in the rat) and 1,500 mg/kg/day (in the rabbit), the developmental effects observed included skeletal variants and decreased body weight gain.</p> <p>for nonylphenol:</p> <p>Nonylphenol was studied for oral toxicity in rats in a 28-day repeat dose toxicity test at doses of 0, 4, 15, 60 and 250 mg/kg/day. Changes suggesting renal dysfunction were mainly noted in both sexes given 250 mg/kg. Liver weights were increased in males given 60 mg/kg and in both sexes given 250 mg/kg group. Histopathologically, hypertrophy of the centrilobular hepatocytes was noted in both sexes given 250 mg/kg. Kidney weights were increased in males given 250 mg/kg and macroscopically, disseminated white spots, enlargement and pelvic dilatation were noted in females given 250 mg/kg. Histopathologically, the following lesions were noted in the 250 mg/kg group: basophilic change of the proximal tubules in both sexes, single cell necrosis of the proximal tubules, inflammatory cell infiltration in the interstitium and casts in females, basophilic change and dilatation of the collecting tubules in both sexes, simple hyperplasia of the pelvic mucosa and pelvic dilatation in females. In the urinary bladder, simple hyperplasia was noted in both sexes given 250 mg/kg. In the caecum, macroscopic dilatation was noted in both sexes given 250 mg/kg. Almost all changes except those in the kidney disappeared after a 14-day recovery period. The NOELs for males and females are considered to be 15 mg/kg/day and 60 mg/kg/day, respectively, under the conditions of the present study.</p> <p>Nonylphenol was not mutagenic to Salmonella typhimurium, TA100, TA1535, TA98, TA1537 and Escherichia coli WP2 uvrA, with or without an exogenous metabolic activation system.</p> <p>Nonylphenol induced neither structural chromosomal aberrations nor polyploidy in CHL/IU cells, in the absence or presence of an exogenous metabolic activation system.</p> <p>The material may cause skin irritation after prolonged or repeated exposure and may produce a contact dermatitis (nonallergic). This form of dermatitis is often characterised by skin redness (erythema) and swelling epidermis. Histologically there may be intercellular oedema of the spongy layer (spongiosis) and intracellular oedema of the epidermis.</p> |
| <b>PROPIONIC ACID &amp; NONYLPHENOL, ETHOXYLATED</b> | The material may produce severe irritation to the eye causing pronounced inflammation. Repeated or prolonged exposure to irritants may produce conjunctivitis.  |
| <b>LECITHIN &amp; WATER</b>                          | No significant acute toxicological data identified in literature search.  |

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

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

## SECTION 12 Ecological information

### Toxicity

| AC Orca                  | Endpoint      | Test Duration (hr) | Species                       | Value            | Source        |
|--------------------------|---------------|--------------------|-------------------------------|------------------|---------------|
|                          | Not Available | Not Available      | Not Available                 | Not Available    | Not Available |
| propionic acid           | Endpoint      | Test Duration (hr) | Species                       | Value            | Source        |
|                          | EC50          | 72h                | Algae or other aquatic plants | 45.8mg/l         | 1             |
|                          | EC50          | 48h                | Crustacea                     | 20.79-24.354mg/L | 4             |
|                          | EC50          | 96h                | Algae or other aquatic plants | 43mg/l           | 1             |
|                          | EC20(ECx)     | 96h                | Algae or other aquatic plants | 12mg/l           | 1             |
|                          | LC50          | 96h                | Fish                          | 50.49mg/L        | 4             |
| lecithin                 | Endpoint      | Test Duration (hr) | Species                       | Value            | Source        |
|                          | Not Available | Not Available      | Not Available                 | Not Available    | Not Available |
| nonylphenol, ethoxylated | Endpoint      | Test Duration (hr) | Species                       | Value            | Source        |
|                          | BCF           | 1008h              | Fish                          | <0.2             | 7             |
|                          | EC50          | 48h                | Crustacea                     | 86mg/l           | Not Available |
|                          | EC50          | 96h                | Algae or other aquatic plants | 12mg/l           | 4             |

Continued...

## AC Orca

|   |               |                    |               |               |               |
|---|---------------|--------------------|---------------|---------------|---------------|
|   | EC50(ECx)     | 48h                | Crustacea     | 86mg/l        | Not Available |
|   | LC50          | 96h                | Fish          | 1-1.8mg/l     | 4             |
| water   | Endpoint      | Test Duration (hr) | Species       | Value         | Source        |
|   | Not Available | Not Available      | Not Available | Not Available | Not Available |
| <b>Legend:</b> Extracted from 1. IUCLID Toxicity Data 2. Europe ECHA Registered Substances - Ecotoxicological Information - Aquatic Toxicity 4. US EPA, Ecotox database - Aquatic Toxicity Data 5. ECETOC Aquatic Hazard Assessment Data 6. NITE (Japan) - Bioconcentration Data 7. METI (Japan) - Bioconcentration Data 8. Vendor Data |               |                    |               |               |               |

**DO NOT** discharge into sewer or waterways.

### Persistence and degradability

| Ingredient               | Persistence: Water/Soil | Persistence: Air |
|--------------------------|-------------------------|------------------|
| propionic acid           | LOW                     | LOW              |
| nonylphenol, ethoxylated | LOW                     | LOW              |
| water                    | LOW                     | LOW              |

### Bioaccumulative potential

| Ingredient               | Bioaccumulation     |
|--------------------------|---------------------|
| propionic acid           | LOW (LogKOW = 0.33) |
| nonylphenol, ethoxylated | LOW (BCF = 16)      |

### Mobility in soil

| Ingredient               | Mobility           |
|--------------------------|--------------------|
| propionic acid           | HIGH (KOC = 1.201) |
| nonylphenol, ethoxylated | LOW (KOC = 940)    |



## SECTION 13 Disposal considerations

### Waste treatment methods

|                              |  |
|------------------------------|--|
| Product / Packaging disposal | <ul style="list-style-type: none"> <li>Recycle wherever possible or consult manufacturer for recycling options.</li> <li>Consult State Land Waste Management Authority for disposal.</li> <li>Treat and neutralise with soda ash at an effluent treatment plant.</li> <li>Recycle containers, otherwise dispose of in an authorised landfill.</li> </ul> |
|------------------------------|--|

## SECTION 14 Transport information

### Labels Required

|                  |   |
|------------------|---|
|                  |  |
| Marine Pollutant |  |
| HAZCHEM          | 2X  |

### Land transport (ADG)

|                               |  |
|-------------------------------|--|
| 14.1. UN number or ID number  | 1760   |
| 14.2. UN proper shipping name | CORROSIVE LIQUID, N.O.S. (contains propionic acid) |

Continued...

|                                    |                           |                |
|------------------------------------|---------------------------|----------------|
| 14.3. Transport hazard class(es)   | Class                     | 8              |
|                                    | Subsidiary Hazard         | Not Applicable |
| 14.4. Packing group                | II                        |                |
| 14.5. Environmental hazard         | Environmentally hazardous |                |
| 14.6. Special precautions for user | Special provisions        | 274            |
|                                    | Limited quantity          | 1 L            |

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

|                                    |   |                |
|------------------------------------|---|----------------|
| 14.1. UN number                    | 1760  |                |
| 14.2. UN proper shipping name      | Corrosive liquid, n.o.s. * (contains propionic acid)      |                |
| 14.3. Transport hazard class(es)   | ICAO/IATA Class   | 8              |
|                                    | ICAO / IATA Subsidiary Hazard                             | Not Applicable |
|                                    | ERG Code  | 8L             |
| 14.4. Packing group                | II  |                |
| 14.5. Environmental hazard         | Environmentally hazardous                                 |                |
| 14.6. Special precautions for user | Special provisions  | A3 A803        |
|                                    | Cargo Only Packing Instructions                           | 855            |
|                                    | Cargo Only Maximum Qty / Pack                             | 30 L           |
|                                    | Passenger and Cargo Packing Instructions                  | 851            |
|                                    | Passenger and Cargo Maximum Qty / Pack                    | 1 L            |
|                                    | Passenger and Cargo Limited Quantity Packing Instructions | Y840           |
|                                    | Passenger and Cargo Limited Maximum Qty / Pack            | 0.5 L          |

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

|                                    |  |                |
|------------------------------------|--|----------------|
| 14.1. UN number                    | 1760   |                |
| 14.2. UN proper shipping name      | CORROSIVE LIQUID, N.O.S. (contains propionic acid) |                |
| 14.3. Transport hazard class(es)   | IMDG Class   | 8              |
|                                    | IMDG Subsidiary Hazard                             | Not Applicable |
| 14.4. Packing group                | II   |                |
| 14.5. Environmental hazard         | Marine Pollutant                                   |                |
| 14.6. Special precautions for user | EMS Number   | F-A, S-B       |
|                                    | Special provisions                                 | 274            |
|                                    | Limited Quantities                                 | 1 L            |

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

Not Applicable

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

| Product name             | Group         |
|--------------------------|---------------|
| propionic acid           | Not Available |
| lecithin                 | Not Available |
| nonylphenol, ethoxylated | Not Available |
| water                    | Not Available |

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

Continued...



| Product name             | Ship Type     |
|--------------------------|---------------|
| propionic acid           | Not Available |
| lecithin                 | Not Available |
| nonylphenol, ethoxylated | Not Available |
| water                    | Not Available |

SECTION 15 Regulatory information

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

|   |
|---|
| <b>propionic acid is found on the following regulatory lists</b>                            |
| Australia Hazardous Chemical Information System (HCIS) - Hazardous Chemicals                |
| Australia Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP) - Schedule 5 |
| Australia Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP) - Schedule 6 |
| Australian Inventory of Industrial Chemicals (AIIC)   |
| <b>lecithin is found on the following regulatory lists</b>                                  |
| Australia Industrial Chemicals Introduction Scheme Comparable Chemicals Table               |
| Australian Inventory of Industrial Chemicals (AIIC)   |
| <b>nonylphenol, ethoxylated is found on the following regulatory lists</b>                  |
| Australia Hazardous Chemical Information System (HCIS) - Hazardous Chemicals                |
| Australia Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP) - Schedule 5 |
| Australia Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP) - Schedule 6 |
| Australian Inventory of Industrial Chemicals (AIIC)   |
| Chemical Footprint Project - Chemicals of High Concern List                                 |
| <b>water is found on the following regulatory lists</b>                                     |
| Australian Inventory of Industrial Chemicals (AIIC)   |

Additional Regulatory Information

Not Applicable

National Inventory Status

| National Inventory                              | Status  |
|---|---|
| Australia - AIIC / Australia Non-Industrial Use | Yes   |
| Canada - DSL                                    | Yes   |
| Canada - NDSL                                   | No (propionic acid; lecithin; nonylphenol, ethoxylated; water)  |
| China - IECSC                                   | Yes   |
| Europe - EINEC / ELINCS / NLP                   | Yes   |
| Japan - ENCS                                    | No (lecithin)   |
| Korea - KECI                                    | Yes   |
| New Zealand - NZIoC                             | Yes   |
| Philippines - PICCS                             | Yes   |
| USA - TSCA                                      | Yes   |
| Taiwan - TCSI                                   | Yes   |
| Mexico - INSQ                                   | Yes   |
| Vietnam - NCI                                   | Yes   |
| Russia - FBEPH                                  | Yes   |
| <b>Legend:</b>                                  | 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 | 29/11/2023 |
|---------------|------------|

**Initial Date** 05/06/2012

## SDS Version Summary

| Version | Date of Update | Sections Updated   |
|---------|----------------|--|
| 5.1     | 23/12/2022     | Classification review due to GHS Revision change.              |
| 6.1     | 29/11/2023     | Hazards identification - Classification, Transport Information |

## Other information

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
- DNEL: Derived No-Effect Level
- PNEC: Predicted no-effect concentration
  
- 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

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