

ISONOL 93



Version 2.0

Chemwatch21-1264

Chemwatch Material Safety Data Sheet (Conforms to Regulations (EC) No 1907/2006, (EC) No 1272/2008 and their amendments)

Print Date: 15-Sep-2011

CHEMWATCH SDS

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SAFETY DATA SHEET

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

1.1. Product Identifier

Product name: ISONOL 93
Chemical product name: No data available
Synonyms: No data available
Proper shipping name: No data available
Chemical formula: No data available
Other means of identification: No data available
Index number: No data available
ID number: No data available
CAS number: No data available
REACH registration number: No data available
EC number: Not Available

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

Relevant identified uses: Used according to manufacturer's directions. Polyurethane elastomer curative.
Uses advised against: No data available

1.3. Details of the supplier of the safety data sheet

Registered company name: Era Polymers Pty Ltd
Address: 25-27 Green Street, Banksmeadow, NSW, 2019, AUS
Telephone: +61 2 9666 3788
Fax: +61 2 9666 4805
Email:
Website: www.erapol.com.au

1.4. Emergency telephone number

Association / Organisation:
Other emergency telephone numbers: 1800 039 008 (AUS)
Other emergency telephone numbers: +61 3 9573 3112; +800 243 62255

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

DSD classification: In case of mixtures, classification has been prepared by following DPD (Directive 1999/45/EC) or CLP (Regulation (EC) No 1272/2008) regulations
DSD classification (additional): No data available
DPD classification:
R22 ● Harmful if swallowed.
R36/37/38 ● Irritating to eyes, respiratory system and skin.
R65 ● HARVFUL-May cause lung damage if swallowed.
CLP classification:
Acute Toxicity (Oral) Category 4
Aspiration Hazard Category 1
Skin Corrosion/Irritation Category 2
Eye Irritation Category 2A
STOT - SE (Resp. Irr.) Category 3
CLP classification (additional): No data available

2.2. Label elements

CLP label elements

Signal word: DANGER
Hazard statement(s):
H302 Harmful if swallowed
H304 May be fatal if swallowed and enters airways
H315 Causes skin irritation

| | |
|------|----------------------------------|
| H319 | Causes serious eye irritation |
| H335 | May cause respiratory irritation |

Determined by Chemwatch using CLP criteria

Additional Statement(s): No data available

Supplementary statement(s): No data available

| Precautionary statement(s): | Prevention Code | Phrase |
|-----------------------------|-----------------|--|
| | P261 | Avoid breathing dust/fume/gas/mist/vapours/spray. |
| | P264 | Wash ... thoroughly after handling. |
| | P270 | Do not eat, drink or smoke when using this product. |
| | P271 | Use only outdoors or in a well-ventilated area. |
| | P280 | Wear protective gloves/protective clothing/eye protection/face protection. |
| | Response Code | Phrase |
| | F301+F310 | IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician. |
| | F301+F312 | IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell. |
| | F304+F340 | IF INHALED: Remove to fresh air and keep at rest in a position comfortable for breathing. |
| | F305+P351+P338 | IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. |
| | F312 | Call a POISON CENTER or doctor/physician if you feel unwell. |
| | F330 | Rinse mouth. |
| | F331 | Do NOT induce vomiting. |
| | F337+F313 | If eye irritation persists: Get medical advice/attention. |
| | Storage Code | Phrase |
| | F403+P233 | Store in a well-ventilated place. Keep container tightly closed. |
| | F405 | Store locked up. |
| | Disposal Code | Phrase |
| | F501 | Dispose of contents/container to ... |

DSD / DPD label elements

Relevant risk statements are found in section 2.1

Indication(s) of danger: CONSIDERED A DANGEROUS MIXTURE ACCORDING TO DIRECTIVE 1999/45/EC AND ITS AMENDMENTS.

| | | |
|-----------------------|-----|--|
| Safety advice: | S23 | • Do not breathe gas/fumes/vapour/spray. |
| | S24 | • Avoid contact with skin. |
| | S25 | • Avoid contact with eyes. |
| | S36 | • Wear suitable protective clothing. |
| | S37 | • Wear suitable gloves. |
| | S39 | • Wear eye/face protection. |
| | S40 | • To clean the floor and all objects contaminated by this material, use water. |
| | S13 | • Keep away from food, drink and animal feeding stuffs. |
| | S26 | • In case of contact with eyes, rinse with plenty of water and contact Doctor or Poisons Information Centre. |
| | S46 | • If swallowed, IMMEDIATELY contact Doctor or Poisons Information Centre. (show this container or label). |

2.3. Other hazards

No data available

PBT/vPvB criteria No data available

SECTION 3: Composition / information on ingredients

3.1. Substances

See 'Composition on ingredients' in section 3.2

3.2. Mixtures

| 1. CAS No 2. EC No 3. Index No 4. REACH No | %[weight] | Name | Classification according to Directive 1999/45/EC [DPD] | Classification according to (EC) No 1272/2008 [CLP] |
|---|-----------|---------------------|--|---|
| | | | Xn R22 R65 | |
| | | | R36/37/38 | |
| | | | R21? | |
| | | | R33? | |
| | | | R40(3)? | |
| | | | R67? | |
| 1. 110-63-4 2. 203-786-5 3. 203-786-5 4. No data available | >20 | 1,4-butylene glycol | | <ul style="list-style-type: none"> Acute Toxicity Category 4 Aspiration Hazard Category 1 Eye Irritation Category 2A Skin Corrosion/Irritation Category 2 STOT - SE Category 3 STOT - SE Category 3 |

SECTION 4: First aid measures

4.1. Description of first aid measures

General: Nb data available

Ingestion:

- 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.

- Avoid giving milk or oils.
- Avoid giving alcohol.

Eye Contact:

If this product comes in contact with the eyes:

- 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:

If skin contact occurs:

- 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:

- If fumes or combustion products are inhaled remove from contaminated area.
- Lay patient down. Keep warm and rested.
- Prostheses such as false teeth, which may block airway, should be removed, where possible, prior to initiating first aid procedures.
- 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.
- Transport to hospital, or doctor.

4.2. Most important symptoms and effects, both acute and delayed

Inhaled: • Acute effects from inhalation of high concentrations of vapour may be nose, throat and chest irritation with coughing, sneezing and possible nausea.

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.
Swallowing of the liquid may cause aspiration of vomit into the lungs with the risk of haemorrhaging, pulmonary oedema, progressing to chemical pneumonitis; serious consequences may result.
Signs and symptoms of chemical (aspiration) pneumonitis may include coughing, gasping, choking, burning of the mouth, difficult breathing, and bluish coloured skin (cyanosis).

Skin Contact:

- 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 dermatitis condition.
- Open cuts, abraded or irritated skin should not be exposed to this material.

Eye:

Evidence exists, or practical experience predicts, that the material may cause eye irritation in a substantial number of individuals and/or may produce significant ocular lesions which are present twenty-four hours or more after instillation into the eye(s) of experimental animals.
Repeated or prolonged eye contact may cause inflammation characterised by temporary redness (similar to windburn) of the conjunctiva (conjunctivitis); temporary impairment of vision and/or other transient eye damage/ulceration may occur.

Chronic:

Principal routes of exposure are by accidental skin and eye contact and by inhalation of vapours especially at higher temperatures.

As with any chemical product, contact with unprotected bare skin; inhalation of vapour, mist or dust in work place atmosphere; or ingestion in any form, should be avoided by observing good occupational work practice.

4.3. Indication of any immediate medical attention and special treatment needed

Any material aspirated during vomiting may produce lung injury. Therefore emesis should not be induced mechanically or pharmacologically. Mechanical means should be used if it is considered necessary to evacuate the stomach contents; these include gastric lavage after endotracheal intubation. If spontaneous vomiting has occurred after ingestion, the patient should be monitored for difficult breathing, as adverse effects of aspiration into the lungs may be delayed up to 48 hours.

SECTION 5: Firefighting measures

5.1. Extinguishing media

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

5.2. Special hazards arising from the substrate or mixture

Fire Incompatibility:

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

5.3. Advice for firefighters

Fire Fighting:

- 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.
- Avoid spraying water onto liquid pools.
- **DO NOT** approach containers suspected to be hot.
- Cool fire exposed containers with water spray from a protected location.
- If safe to do so, remove containers from path of fire.

Fire/Explosion Hazard:

- 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).
- May emit acrid smoke.
- Mists containing combustible materials may be explosive.

Combustion products include:
carbon dioxide (CO₂)
other pyrolysis products typical of burning organic material

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Personal Protective Equipment:

Gloves, boots (chemical resistant).

Minor Spills:

- Remove all ignition sources.
- Clean up all spills immediately.
- Avoid breathing vapours and contact with skin and eyes.
- Control personal contact by using protective equipment.
- Contain and absorb spill with sand, earth, inert material or vermiculite.
- Wipe up.
- Place in a suitable, labelled container for waste disposal.

Major Spills:

Moderate hazard.

- Clear area of personnel and move upwind.
- Alert Fire Brigade and tell them location and nature of hazard.
- Wear breathing apparatus plus protective gloves.
- Prevent, by any means available, spillage from entering drains or water course.
- No smoking, naked lights or ignition sources.
- Increase ventilation.
- Stop leak if safe to do so.
- Contain spill with sand, earth or vermiculite.
- Collect recoverable product into labelled containers for recycling.
- Absorb remaining product with sand, earth or vermiculite.
- Collect solid residues and seal in labelled drums for disposal.
- Wash area and prevent runoff into drains.
- If contamination of drains or waterways occurs, advise emergency services.

6.2. Environmental precautions

See section 12

6.3. Methods and material for containment and cleaning up

6.4. Reference to other sections

Personal Protective Equipment advice is contained in Section 8 of the MSDS

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Safe handling

- **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.
- **DO NOT enter confined spaces until atmosphere has been checked.**
- Avoid smoking, naked lights or ignition sources.
- Avoid contact with incompatible materials.
- When handling, **DO NOT eat, drink or smoke.**
- Keep containers securely sealed when not in use.
- Avoid physical damage to containers.
- Always wash hands with soap and water after handling.
- Work clothes should be laundered separately.
- Use good occupational work practice.
- Observe manufacturer's storing and handling recommendations.
- Atmosphere should be regularly checked against established exposure standards to ensure safe working conditions.

Fire and explosion protection

See section 5

Other information

- Store in original containers.
- Keep containers securely sealed.
- No smoking, naked lights or ignition sources.
- Store in a cool, dry, well-ventilated area.
- Store away from incompatible materials and foodstuff containers.
- Protect containers against physical damage and check regularly for leaks.
- Observe manufacturer's storing and handling recommendations.

SAFE STORAGE WITH OTHER CLASSIFIED CHEMICALS

+ X + X X +

+: May be stored together.

O: May be stored together with specific preventions.

X: Must not be stored together.

7.2. Conditions for safe storage, including any incompatibilities

Suitable container:

- Metal can or drum
- Packaging as recommended by manufacturer.
- Check all containers are clearly labelled and free from leaks.

Storage incompatibility:

Alcohols

- are incompatible with strong acids, acid chlorides, acid anhydrides, oxidising and reducing agents.
- reacts, possibly violently, with alkaline metals and alkaline earth metals to produce hydrogen
- react with strong acids, strong caustics, aliphatic amines, isocyanates, acetaldehyde, benzoyl peroxide, chromic acid, chromium oxide, dialkylzinc, dichlorine oxide, ethylene oxide, hypochlorous acid, isopropyl chlorocarbonate, lithium tetrahydroaluminate, nitrogen dioxide, pentafluoroguanidine, phosphorus halides, phosphorus pentasulfide, tangerine oil, triethylaluminium, triisobutylaluminium
- should not be heated above 49 deg. C. when in contact with aluminium equipment

Package Material

No data available

Incompatibilities:

7.3. Specific end use(s)

See section 1.2

SECTION 8: Exposure controls / personal protection

8.1. Control parameters

Derived No Effect Level (DNEL)

| Exposure Pattern | Workers | General Population | Exposure Pattern | Workers | General Population |
|--|---------|--------------------|---|-------------------|--------------------|
| Long term - dermal, systemic effects | - | - | Short term - dermal, systemic effects | No data available | No data available |
| Long term - inhalation, systemic effects | - | - | Short term - inhalation, systemic effects | No data available | No data available |
| Long term - oral, systemic effects | - | - | Short term - oral, systemic effects | No data available | No data available |
| Long term - dermal, local effects | - | - | Short term - dermal, local effects | No data available | No data available |
| Long term - inhalation, local effects | - | - | Short term - inhalation, local effects | No data available | No data available |

Occupational Exposure Limits (OEL)

The following materials had no OELs on our records

- 1,4-butylene glycol: CAS:110-63-4 CAS:74829-49-5 CAS:38274-25-8

No data available

ERACURE 210:

Not available

1,4-BUTYLENE GLYCOL:

Sensory irritants are chemicals that produce temporary and undesirable side-effects on the eyes, nose or throat. Historically occupational exposure standards for these irritants have been based on observation of workers' responses to various airborne concentrations. Present day expectations require that nearly every individual should be protected against even minor sensory irritation and exposure standards are established using uncertainty factors or safety factors of 5 to 10 or more. On occasion animal no-observable-effect-levels (NOEL) are used to determine these limits where human results are unavailable. An additional approach, typically used by the TLV committee (USA) in determining respiratory standards for this group of chemicals, has been to assign ceiling values (TLV C) to rapidly acting irritants and to assign short-term exposure limits (TLV STELs) when the weight of evidence from irritation, bioaccumulation and other endpoints combine to warrant such a limit. In contrast the MAK Commission (Germany) uses a five-category system based on intensive odour, local irritation, and elimination half-life. However this system is being replaced to be consistent with the European Union (EU) Scientific Committee for Occupational Exposure Limits (SCOEL); this is more closely allied to that of the USA.

OSHA (USA) concluded that exposure to sensory irritants can:

- cause inflammation
- cause increased susceptibility to other irritants and infectious agents
- lead to permanent injury or dysfunction
- permit greater absorption of hazardous substances and
- acclimate the worker to the irritant warning properties of these substances thus increasing the risk of overexposure.

8.2. Exposure controls

8.2.1. Appropriate engineering controls

Engineering controls are used to remove a hazard or place a barrier between the worker and the hazard. Well-designed engineering controls can be highly effective in protecting workers and will typically be independent of worker interactions to provide this high level of protection.

The basic types of engineering controls are:

Process controls which involve changing the way a job activity or process is done to reduce the risk.

Enclosure and/or isolation of emission source which keeps a selected hazard "physically" away from the worker and ventilation that strategically "adds" and "removes" air in the work environment. Ventilation can remove or dilute an air contaminant if designed properly. The design of a ventilation system must match the particular process and chemical or contaminant in use.

Employers may need to use multiple types of controls to prevent employee overexposure.

General exhaust is adequate under normal operating conditions. Local exhaust ventilation may be required in special circumstances. If risk of overexposure exists, wear approved respirator. Supplied-air type respirator may be required in special circumstances. Correct fit is essential to ensure adequate protection. Provide adequate ventilation in warehouses and enclosed storage areas. Air contaminants generated in the workplace possess varying "escape" velocities which, in turn, determine the "capture velocities" of fresh circulating air required to effectively remove the contaminant.

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

Within each range the appropriate value depends on:

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

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

8.2.2. Personal protection

Eye and face protection:

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

Skin protection: See Hand protection: below

Hand protection:

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

Suitability and durability of glove type is dependent on usage. Important factors in the selection of gloves include:

- frequency and duration of contact,
- chemical resistance of glove material,
- glove thickness and
- dexterity

Select gloves tested to a relevant standard (e.g. Europe EN 374, US F739, AS/NZS 2161.1 or national equivalent).

- When prolonged or frequently repeated contact may occur, a glove with a protection class of 5 or higher (breakthrough time greater than 240 minutes according to EN 374, AS/NZS 2161.10.1 or national equivalent) is recommended.
- When only brief contact is expected, a glove with a protection class of 3 or higher (breakthrough time greater than 60 minutes according to EN 374, AS/NZS 2161.10.1 or national equivalent) is recommended.
- Contaminated gloves should be replaced.

Gloves must only be worn on clean hands. After using gloves, hands should be washed and dried thoroughly. Application of a non-perfumed moisturiser is recommended.

Body protection: See Other protection: below

Other protection:

- Overalls.
- P.V.C. apron.
- Barrier cream
- Skin cleansing cream
- Eye wash unit.

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

Cartridge respirators should never be used for emergency ingress or in areas of unknown vapour concentrations or oxygen content. The wearer must be warned to leave the contaminated area immediately on detecting any odours through the respirator. The odour may indicate that the mask is not functioning properly, that the vapour concentration is too high, or that the mask is not properly fitted. Because of these limitations, only restricted use of cartridge respirators is considered appropriate.

Thermal hazards: No data available

Recommended material(s): 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:

- 1,4-butylene glycol

| Material | CPI |
|----------|-----|
| BUTYL | A |
| NITRILE | A |

* 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.

8.2.3. Environmental exposure controls

See section 12

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

| | |
|--|--------------------------------------|
| Appearance | Colourless liquid; mixes with water. |
| Odour | No data available |
| Odour threshold | No data available |
| Taste | No data available |
| pH (1% solution) | No data available |
| pH (as supplied) | No data available |
| Melting point / freezing point (°C) | No data available |
| Initial boiling point and boiling range (°C) | No data available |
| Flash point (°C) | No data available |
| Evaporation rate | No data available |
| Flammability | No data available |
| Vapour pressure (kPa) | No data available |
| Vapour density (Air = 1) | No data available |
| Relative density (Water = 1) | 1.0-1.05 |
| Solubility in Water (g/L) | Miscible |
| Partition coefficient: n-octanol / water | No data available |
| Auto-ignition temperature (°C) | No data available |
| Critical temperature (°C) | No data available |
| Viscosity (cSt) | No data available |
| Explosive properties | No data available |
| Oxidising properties | No data available |
| Physical state | Liquid |
| Upper Explosive Limit (%) | No data available |
| Lower Explosive Limit (%) | No data available |
| Surface Tension | No data available |
| Volatile Component (%vol) | No data available |
| Gas group | No data available |
| Molecular weight (g/mol) | No data available |
| Evaporation Rate (BuAc = 1 EA = 1 Ether = 1) | No data available |
| IUCLID Remarks | No data available |

9.2. Other information

No data available

SECTION 10: Stability and reactivity

| | | |
|-------|------------------------------------|--|
| 10.1. | Reactivity | See section 7.2 |
| 10.2. | Chemical stability | ↓ <ul style="list-style-type: none">• Presence of incompatible materials.• Product is considered stable.• Hazardous polymerisation will not occur. |
| 10.3. | Possibility of hazardous reactions | See section 7.2 |
| 10.4. | Conditions to avoid | See section 7.2 |
| 10.5. | Incompatible materials | See section 7.2 |
| 10.6. | Hazardous decomposition products | See section 5.3 |

SECTION 11: Toxicological information

11.1. Information on toxicological effects

| | |
|-------------------------|-------------------|
| Mutagenicity: | No data available |
| Reproductive Toxicity: | No data available |
| Carcinogenicity: | No data available |
| STOT - single exposure: | No data available |

ERACURE 210: Not available. Refer to individual constituents. 1,4-BUTYLENE GLYCOL: unless otherwise specified data extracted from RTECS - Register of Toxic Effects of Chemical Substances.

TOXICITY

Oral (rat) LD50: 1525 mg/kg

IRRITATION

Nil Reported

Intraperitoneal (rat) LD50: 1070 mg/kg

Oral (mouse) LD50: 2062 mg/kg

Intraperitoneal (mouse) LD50: 1650 mg/kg

Oral (rabbit) LD50: 2531 mg/kg

Oral (g.pig) LD50: 1200 mg/kg

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 hyperactivity on methacholine challenge testing and the lack of minimal lymphocytic inflammation, without eosinophilia, have also been included in the criteria for diagnosis of RADS. 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. Industrial bronchitis, on the other hand, is a disorder that occurs as result of exposure due to high concentrations of irritating substance (often particulate in nature) and is completely reversible after exposure ceases. The disorder is characterised by dyspnea, cough and mucus production. for 1,4-butylene glycol (syn: 1,4-butanediol) Acute toxicity: Acute lethal toxicity of 1,4-butylene glycol is low via all administration routes. Major toxicity by oral administration is respiratory failure and catalepsy. This chemical is a slight irritant to the skin, eyes and respiratory tract, but not a skin sensitizer. As 1,4-butylene glycol is rapidly absorbed and metabolized to gamma-hydroxybutyric acid in animals and humans, neurotoxic effect of 1,4-butylene glycol such as depression of central nervous system is considered to be caused by the metabolite, gamma-hydroxybutyric acid. 1,4-Butylene glycol seems to show a competitive inhibition of alcohol dehydrogenase and increases the toxic effect of alcohol. Repeat dose toxicity: In an OECD combined repeat dose and reproductive/developmental screening toxicity test (OECD TG 422), rats were administered by gavage at doses of 200, 400 and 800 mg/kg/day for 45 days in males and from 14 days before mating to day 3 of lactation in females. Neurobehavioral toxicity (i.e. hyperactivity and coma after hypoactivity and recumbency) and pathological changes (diffuse transitional epithelial hyperplasia and fibrosis in the lamina propria of the urinary bladder) were observed. The transient hyperactivity only just after administration was observed at the lowest dose of 200 mg/kg/day. This neurotoxicity in dams was also observed in developmental toxicity study of mice at doses of 300 and 600 mg/kg/day by gavage during gestational days 6-15 but not at 100 mg/kg/day. This study was conducted by NTP test guideline under GLP. Therefore NOAEL of 100 mg/kg/day for oral repeated toxicity is sufficiently reliable. In a 2 week inhalation rat study at 1.1 g/m³ (6 hours/day, 5 days/week), no changes including neurotoxicity were observed. Therefore, 1.1 g/m³ was considered to be inhalation NOAEL. Repeated intraperitoneal administration induced narcotic effect at more than 500 mg/kg/day, but NOAEL was not established. From repeated dose studies, it is evident that critical effect is neurotoxicity. However, the nature of the data does not allow for the identification of the dose-response and NOAEL for this effect. Reproductive toxicity: A reduction in foetal body weight of rats was observed in the above OECD combined repeat dose and reproductive/developmental screening toxicity test (OECD TG 422) but this effect was considered to be secondary to maternal toxicity. NOAEL for reproductive toxicity is the highest dose of 800 mg/kg/day. Developmental toxicity: In the developmental toxicity study of mice at 100, 300 and 600 mg/kg/day described above, the only definitive expression of developmental toxicity was a reduction in average foetal body weight at doses of 300 and 600 mg/kg/day (92% and 83% of control weight, respectively). However, this effect against foetal development was considered to be secondary to maternal toxicity. No teratogenicity was observed at any doses. Thus, 600 mg/kg/day is the developmental NOAEL. Genotoxicity of this chemical may be negative because of no teratogenic mutation in *S. Typhimurium* TA100, TA98, TA1535, TA1537, and *E.coli* WP2 *uvrA* with and without metabolic activation (OECD TG 471 and 472), nor chromosomal aberration in *in vitro* in CHL/IU cells with or without metabolic activation system OECD TG (473).

SECTION 12: Ecological information

12.1. Toxicity

| | |
|--|-------------------|
| Fish: | No data available |
| Daphnia Magna: | No data available |
| Algae: | No data available |
| Toxic to aquatic micro-organisms: | No data available |

1,4-BUTYLENE GLYCOL:

for 1,4-butylene glycol (syn: 1,4-butanediol)

Environmental fate:

1,4-Butylene glycol is a liquid at 20 deg C, and this chemical is classified as a readily biodegradable chemical (OECD 301C: 100 % after 14-day). Bioconcentration factor may be low judging from a low *P_{ow}* value (0.50 at 25 deg C).

Ecotoxicity:

Fish LC50 (96 h): medaka (*Oryzias latipes*) >100 mg/l (OECD TG 203)

Fish LC50 (14 d): medaka (*Oryzias latipes*) >100 mg/l

Daphnia magna EC50 (48 h): >1000 mg/l (OECD TG 202)

Daphnia magna NOEC (21 d): >85 mg/l

Algae EC50 (72 h): *Selenastrum capricornutum* >1000 mg/l; NOEC >1000 mg/l

An assessment factor of 100 was used to chronic toxicity data to determine PNEC, because chronic toxicity data for fish were not available. Thus, PNEC of this chemical is >0.85 mg/l.

Toxicity of this chemical to aquatic organisms is low, because all toxicity data are higher than 85 mg/l.

DO NOT discharge into sewer or waterways.

12.2. Persistence and degradability

| Ingredient | Persistence: Water/Soil | Persistence: Air |
|---------------------|-------------------------|-------------------|
| ERACURE 210 | No Data Available | No Data Available |
| 1,4-butylene glycol | HIGH | No Data Available |

12.3. Bioaccumulative potential

| Ingredient | Bioaccumulation |
|---------------------|-----------------|
| 1,4-butylene glycol | LOW |

12.4. Mobility in soil

| Ingredient | Mobility |
|---------------------|------------------|
| 1,4-butylene glycol | HIGH (ESTIMATED) |

12.5. Results of PBT and vPvB assessment

| | P | B | T |
|---|-------------------|-------------------|-------------------|
| Relevant available data | No data available | No data available | No data available |
| PBT and vPvB Criteria fulfilled? | No data available | No data available | No data available |

12.6. Other adverse effects

No data available

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Product / Packaging disposal:

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.

A Hierarchy of Controls seems to be common - the user should investigate:

- Reduction
- Reuse
- Recycling
- Disposal (if all else fails)

This material may be recycled if unused, or if it has not been contaminated so as to make it unsuitable for its intended use. If it has been contaminated, it may be possible to reclaim the product by filtration, distillation or some other means. Shelf life considerations should also be applied in making decisions of this type. Note that properties of a material may change in use, and recycling or reuse may not always be appropriate.

- **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.

Waste treatment options:

Sewage disposal options:

No relevant data

Other disposal recommendations:

SECTION 14: Transport information

Labels Required:

No data available

Land transport (ADR/ RID/ GGVSE)

No data available

| | | | | | | | | | | | | | |
|---|-------------------|---|--|--------------------------------|-------------------|---------------------|-------------------|--------------|-------------------|--------------------|-------------------|----------------------|-------------------|
| 14.1. UN number | None | 14.4. Packing group | No data available | | | | | | | | | | |
| 14.2. UN proper shipping name | No data available | 14.5. Environmental hazard | No relevant data | | | | | | | | | | |
| 14.3. Transport hazard class(es) | No data available | 14.6. Special precautions for user | <table border="1"> <tr> <td>Hazard identification (Kemler)</td> <td>No data available</td> </tr> <tr> <td>Classification Code</td> <td>No data available</td> </tr> <tr> <td>Hazard Label</td> <td>No data available</td> </tr> <tr> <td>Special provisions</td> <td>No data available</td> </tr> <tr> <td>Add limited quantity</td> <td>No data available</td> </tr> </table> | Hazard identification (Kemler) | No data available | Classification Code | No data available | Hazard Label | No data available | Special provisions | No data available | Add limited quantity | No data available |
| Hazard identification (Kemler) | No data available | | | | | | | | | | | | |
| Classification Code | No data available | | | | | | | | | | | | |
| Hazard Label | No data available | | | | | | | | | | | | |
| Special provisions | No data available | | | | | | | | | | | | |
| Add limited quantity | No data available | | | | | | | | | | | | |

Air transport (ICAO-IATA / DGR)

No data available

| | | | | | | | | | | | | | | | | | | | | | |
|---|---|-----------------------------------|-------------------|----------|-------------------|---|--|--------------------|-------------------|---------------------------------|-------------------|-------------------------------|-------------------|--|-------------------|--|-------------------|---|-------------------|--|-------------------|
| 14.1. UN number | None | 14.4. Packing group | No data available | | | | | | | | | | | | | | | | | | |
| 14.2. UN proper shipping name | No data available | 14.5. Environmental hazard | No relevant data | | | | | | | | | | | | | | | | | | |
| 14.3. Transport hazard class(es) | <table border="1"> <tr> <td>ICAO/IATA Class (Subrisk):</td> <td>No data available</td> </tr> <tr> <td>ERG Code</td> <td>No data available</td> </tr> </table> | ICAO/IATA Class (Subrisk): | No data available | ERG Code | No data available | 14.6. Special precautions for user | <table border="1"> <tr> <td>Special provisions</td> <td>No data available</td> </tr> <tr> <td>Cargo Only Packing Instructions</td> <td>No data available</td> </tr> <tr> <td>Cargo Only Maximum Qty / Pack</td> <td>No data available</td> </tr> <tr> <td>Passenger and Cargo Packing Instructions</td> <td>No data available</td> </tr> <tr> <td>Passenger and Cargo Maximum Qty / Pack</td> <td>No data available</td> </tr> <tr> <td>Passenger and Cargo Limited Quantity Packing Instructions</td> <td>No data available</td> </tr> <tr> <td>Passenger and Cargo Maximum Qty / Pack</td> <td>No data available</td> </tr> </table> | Special provisions | No data available | Cargo Only Packing Instructions | No data available | Cargo Only Maximum Qty / Pack | No data available | Passenger and Cargo Packing Instructions | No data available | Passenger and Cargo Maximum Qty / Pack | No data available | Passenger and Cargo Limited Quantity Packing Instructions | No data available | Passenger and Cargo Maximum Qty / Pack | No data available |
| ICAO/IATA Class (Subrisk): | No data available | | | | | | | | | | | | | | | | | | | | |
| ERG Code | No data available | | | | | | | | | | | | | | | | | | | | |
| Special provisions | No data available | | | | | | | | | | | | | | | | | | | | |
| Cargo Only Packing Instructions | No data available | | | | | | | | | | | | | | | | | | | | |
| Cargo Only Maximum Qty / Pack | No data available | | | | | | | | | | | | | | | | | | | | |
| Passenger and Cargo Packing Instructions | No data available | | | | | | | | | | | | | | | | | | | | |
| Passenger and Cargo Maximum Qty / Pack | No data available | | | | | | | | | | | | | | | | | | | | |
| Passenger and Cargo Limited Quantity Packing Instructions | No data available | | | | | | | | | | | | | | | | | | | | |
| Passenger and Cargo Maximum Qty / Pack | No data available | | | | | | | | | | | | | | | | | | | | |

Sea transport (IMDG-Code / GGVSee)

No data available

| | | | | | | | | | | | | |
|---|---|-----------------------------------|---------------------|-------------------|---|---|------------|-------------------|--------------------|-------------------|--------------------|-------------------|
| 14.1. UN number | None | 14.4. Packing group | No data available | | | | | | | | | |
| 14.2. UN proper shipping name | No data available | 14.5. Environmental hazard | No relevant data | | | | | | | | | |
| 14.3. Transport hazard class(es) | <table border="1"> <tr> <td>No data available</td> <td>IMDG Subrisk</td> <td>No data available</td> </tr> </table> | No data available | IMDG Subrisk | No data available | 14.6. Special precautions for user | <table border="1"> <tr> <td>EMS Number</td> <td>No data available</td> </tr> <tr> <td>Special provisions</td> <td>No data available</td> </tr> <tr> <td>Limited Quantities</td> <td>No data available</td> </tr> </table> | EMS Number | No data available | Special provisions | No data available | Limited Quantities | No data available |
| No data available | IMDG Subrisk | No data available | | | | | | | | | | |
| EMS Number | No data available | | | | | | | | | | | |
| Special provisions | No data available | | | | | | | | | | | |
| Limited Quantities | No data available | | | | | | | | | | | |

Inland waterways transport (ADNR/ River Rhine)

No data available

| | | | | | | |
|---|-------------------|----------------------------|-----------------------------------|---|---------------------|-------------------|
| 14.1. UN number | None | 14.4. Packing group | No data available | | | |
| 14.2. UN proper shipping name | No data available | | 14.5. Environmental hazard | No relevant data | | |
| 14.3. Transport hazard class(es) | No data available | ADNR Label | No data available | 14.6. Special precautions for user | Classification code | No data available |
| | | | | Limited quantity | No data available | |
| | | | | Equipment required | No data available | |
| | | | | Fire cones number | No data available | |

14.7. Transport in bulk according to Annex II of MARPOL 73 / 78 and the IBC code

No data available

SECTION 15: Regulatory information**15.1. Safety, health and environmental regulations / legislation specific for the substance or mixture****Regulations for ingredients****1,4-butylene glycol (CAS: 110-63-4,74829-49-5,38274-25-8) is found on the following regulatory lists;**

"EU Directive 2002/72/EC Plastic materials and articles intended to come into contact with foodstuffs - Annex II Section A: List of authorised monomers and other starting substances", "EU Directive 2002/72/EC Plastic materials and articles intended to come into contact with foodstuffs - Annex III Section A Incomplete list of additives fully harmonised at Community level", "European Chemicals Agency (ECHA) List of Registered Substances", "European Chemicals Agency (ECHA) List of substances identified for registration in 2010", "European Customs Inventory of Chemical Substances (English)", "European Union - European Inventory of Existing Commercial Chemical Substances (EINECS) (English)", "GESAMP/EHS Composite List - GESAMP Hazard Profiles"

No data for ERACURE 210 (CW: 21-1264)

This safety data sheet is in compliance with the following EU legislation and its adaptations – as far as applicable - : 67/548/EEC, 1999/45/EC, 98/24/EC, 92/85/EEC, 94/33/EC, 91/689/EEC, 1999/13/EC, Regulation (EU) No 453/2010, Regulation (EC) No 1907/2006, Regulation (EC) No 1272/2008, and their amendments as well as the following British legislation:

- The Control of Substances Hazardous to Health Regulations (COSHH) 2002

- COSHH Essentials

- The Management of Health and Safety at Work Regulations 1999

15.2. Chemical safety assessment

No data available

Annex VI

Acute Toxicity (Oral) Category 4

Aspiration Hazard Category 1

Skin Corrosion/Irritation Category 2

Eye Irritation Category 2A

STOT - SE (Resp. Irr.) Category 3

RISK

| Risk Codes | Risk Phrases |
|------------|--|
| R22 | Harmful if swallowed. |
| R36/37/38 | Irritating to eyes, respiratory system and skin. |
| R65 | HARMFUL-May cause lung damage if swallowed. |

SECTION 16: Other information**ANNEX 2: Indications of Danger**

| Xn | Harmful | | |
|-----------------------|---------|-----------------|----------------------|
| Substance | CAS | Suggested codes | |
| 1, 4- butylene glycol | | 110- 63- 4 | Mut3; R68 Xn; R22 |
| 1, 4- butylene glycol | | 74829- 49- 5 | Mut3; R68 Xn; R22 |
| 1, 4- butylene glycol | | 38274- 25- 8 | Mut3; R68 Xn; R22 |

Denmark Advisory list for selfclassification of dangerous substances

INGREDIENTS WITH MULTIPLE CAS NUMBERS

| Ingredient Name | CAS |
|---------------------|----------------------------------|
| 1,4-butylene glycol | 110-63-4, 74829-49-5, 38274-25-8 |

OTHER

- 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/references

- The (M)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.

● For detailed advice on Personal Protective Equipment, refer to the following EU CEN Standards:

EN 166 Personal eye-protection

EN 340 Protective clothing

EN 374 Protective gloves against chemicals and micro-organisms

EN 13832 Footwear protecting against chemicals

EN 133 Respiratory protective devices

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www.chemwatch.net

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Not applicable