



Ardex MC Rapid Part B Ardex (Ardex NZ)

Chemwatch: 44-1510
Version No: 4.1.1.1
Safety Data Sheet according to HSNO Regulations

Chemwatch Hazard Alert Code: 3

Issue Date: 01/11/2019
Print Date: 06/08/2020
S.GHS.NZL.EN

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

Product Identifier

| | |
|-------------------------------|--|
| Product name | Ardex MC Rapid Part B |
| Synonyms | Not Available |
| Proper shipping name | CORROSIVE LIQUID, N.O.S. (contains trimethylhexamethylene diamine and m-xylenediamine) |
| Other means of identification | Not Available |

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

| | |
|--------------------------|--------------------------------------|
| Relevant identified uses | Epoxy hardener for moisture barrier. |
|--------------------------|--------------------------------------|

Details of the supplier of the safety data sheet

| | |
|-------------------------|--|
| Registered company name | Ardex (Ardex NZ) |
| Address | 32 Lane Street Woolston Christchurch New Zealand |
| Telephone | +64 3384 3029 |
| Fax | +64 3384 9779 |
| Website | Not Available |
| Email | Not Available |

Emergency telephone number

| | |
|-----------------------------------|-----------------------|
| Association / Organisation | Ardex (Ardex NZ) |
| Emergency telephone numbers | +64 3 373 6900 |
| Other emergency telephone numbers | 0800 764 766 (NZ NPC) |

SECTION 2 Hazards identification

Classification of the substance or mixture

Considered a Hazardous Substance according to the criteria of the New Zealand Hazardous Substances New Organisms legislation.
Classified as Dangerous Goods for transport purposes.

ChemWatch Hazard Ratings

| | Min | Max | |
|--------------|-----|-----|--------------|
| Flammability | 1 | 1 | |
| Toxicity | 2 | 2 | 0 = Minimum |
| Body Contact | 3 | 3 | 1 = Low |
| Reactivity | 1 | 1 | 2 = Moderate |
| Chronic | 2 | 2 | 3 = High |
| | | | 4 = Extreme |

| | |
|---|--|
| Classification [1] | Flammable Liquid Category 4, Metal Corrosion Category 1, Acute Toxicity (Oral) Category 4, Acute Toxicity (Dermal) Category 3, Acute Toxicity (Inhalation) Category 4, Skin Corrosion/Irritation Category 1B, Serious Eye Damage Category 1, Skin Sensitizer Category 1, Respiratory Sensitizer Category 1, Chronic Aquatic Hazard Category 2, Acute Terrestrial Hazard Category 3, Acute Vertebrate Hazard Category 3 |
| Legend: | 1. Classified by Chemwatch; 2. Classification drawn from CCID EPA NZ; 3. Classification drawn from Regulation (EU) No 1272/2008 - Annex VI |
| Determined by Chemwatch using GHS/HSNO criteria | 3.1D, 8.1A, 6.1C (dermal), 6.1D (inhalation), 6.1D (oral), 8.2B, 8.3A, 6.5A (respiratory), 6.5B (contact), 9.1B, 9.2C, 9.3C |

Label elements

Ardex MC Rapid Part B

| | |
|---------------------|---|
| Hazard pictogram(s) |  |
|---------------------|---|

| | |
|-------------|---------------|
| Signal word | Danger |
|-------------|---------------|

Hazard statement(s)

| | |
|------|--|
| H227 | Combustible liquid. |
| H290 | May be corrosive to metals. |
| H302 | Harmful if swallowed. |
| H311 | Toxic in contact with skin. |
| H332 | Harmful if inhaled. |
| H314 | Causes severe skin burns and eye damage. |
| H317 | May cause an allergic skin reaction. |
| H334 | May cause allergy or asthma symptoms or breathing difficulties if inhaled. |
| H411 | Toxic to aquatic life with long lasting effects. |
| H423 | Harmful to the soil environment |
| H433 | Harmful to terrestrial vertebrates. |

Precautionary statement(s) Prevention

| | |
|------|--|
| P210 | Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. |
| P260 | Do not breathe mist/vapours/spray. |
| P271 | Use only outdoors or in a well-ventilated area. |
| P273 | Avoid release to the environment. |

Precautionary statement(s) Response

| | |
|----------------|--|
| P301+P330+P331 | IF SWALLOWED: Rinse mouth. Do NOT induce vomiting. |
| P303+P361+P353 | IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water [or shower]. |
| P304+P340 | IF INHALED: Remove person to fresh air and keep comfortable for breathing. |
| P305+P351+P338 | IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. |

Precautionary statement(s) Storage

| | |
|------|-----------------------------------|
| P403 | Store in a well-ventilated place. |
| 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 |
|------------|-----------|--|
| 98-54-4 | 30-60 | <u>p-tert-butylphenol</u> |
| 1477-55-0 | 30-60 | <u>m-xylenediamine</u> |
| 25620-58-0 | 10-30 | <u>trimethylhexamethylene diamine</u> |
| 90-72-2 | 1-5 | <u>2,4,6-tris(dimethylamino)methylphenol</u> |
| 100-51-6 | 1-5 | <u>benzyl alcohol</u> |
| 109-55-7 | 0.1-1 | <u>3-dimethylaminopropylamine</u> |

SECTION 4 First aid measures

Description of first aid measures

| | |
|-------------|---|
| Eye Contact | <p>If this product comes in contact with the eyes:</p> <ul style="list-style-type: none"> ▶ Immediately hold eyelids apart and flush the eye continuously with 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. ▶ Continue flushing until advised to stop by the Poisons Information Centre or a doctor, or for at least 15 minutes. ▶ Transport to hospital or doctor without delay. ▶ Removal of contact lenses after an eye injury should only be undertaken by skilled personnel. <p>For amines:</p> |
|-------------|---|

| | |
|---------------------|--|
| | <ul style="list-style-type: none"> ▶ If liquid amines come in contact with the eyes, irrigate immediately and continuously with low pressure flowing water, preferably from an eye wash fountain, for 15 to 30 minutes. ▶ For more effective flushing of the eyes, use the fingers to spread apart and hold open the eyelids. The eyes should then be "rolled" or moved in all directions. ▶ Seek immediate medical attention, preferably from an ophthalmologist. |
| Skin Contact | <p>If skin or hair contact occurs:</p> <ul style="list-style-type: none"> ▶ Immediately flush body and clothes with large amounts of water, using safety shower if available. ▶ Quickly remove all contaminated clothing, including footwear. ▶ Wash skin and hair with running water. Continue flushing with water until advised to stop by the Poisons Information Centre. ▶ Transport to hospital, or doctor. <p>For amines:</p> <ul style="list-style-type: none"> ▶ In case of major exposure to liquid amine, promptly remove any contaminated clothing, including rings, watches, and shoe, preferably under a safety shower. ▶ Wash skin for 15 to 30 minutes with plenty of water and soap. Call a physician immediately. ▶ Remove and dry-clean or launder clothing soaked or soiled with this material before reuse. Dry cleaning of contaminated clothing may be more effective than normal laundering. ▶ Inform individuals responsible for cleaning of potential hazards associated with handling contaminated clothing. ▶ Discard contaminated leather articles such as shoes, belts, and watchbands. ▶ Note to Physician: Treat any skin burns as thermal burns. After decontamination, consider the use of cold packs and topical antibiotics. |
| Inhalation | <ul style="list-style-type: none"> ▶ 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. <p>For amines:</p> <ul style="list-style-type: none"> ▶ All employees working in areas where contact with amine catalysts is possible should be thoroughly trained in the administration of appropriate first aid procedures. ▶ Experience has demonstrated that prompt administration of such aid can minimize the effects of accidental exposure. ▶ Promptly move the affected person away from the contaminated area to an area of fresh air. ▶ Keep the affected person calm and warm, but not hot. ▶ If breathing is difficult, oxygen may be administered by a qualified person. ▶ If breathing stops, give artificial respiration. Call a physician at once. ▶ Inhalation of vapours or aerosols (mists, fumes) may cause lung oedema. ▶ Corrosive substances may cause lung damage (e.g. lung oedema, fluid in the lungs). ▶ As this reaction may be delayed up to 24 hours after exposure, affected individuals need complete rest (preferably in semi-recumbent posture) and must be kept under medical observation even if no symptoms are (yet) manifested. ▶ Before any such manifestation, the administration of a spray containing a dexamethasone derivative or beclomethasone derivative may be considered. <p>This must definitely be left to a doctor or person authorised by him/her. (ICSC13719)</p> |
| Ingestion | <ul style="list-style-type: none"> ▶ For advice, contact a Poisons Information Centre or a doctor at once. ▶ Urgent hospital treatment is likely to be needed. ▶ 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. ▶ Transport to hospital or doctor without delay. <p>For amines:</p> <ul style="list-style-type: none"> ▶ If liquid amine are ingested, have the affected person drink several glasses of water or milk. ▶ Do not induce vomiting. ▶ Immediately transport to a medical facility and inform medical personnel about the nature of the exposure. The decision of whether to induce vomiting should be made by an attending physician. |

Indication of any immediate medical attention and special treatment needed

For acute or short-term repeated exposures to highly alkaline materials:

- ▶ Respiratory stress is uncommon but present occasionally because of soft tissue edema.
 - ▶ Unless endotracheal intubation can be accomplished under direct vision, cricothyroidotomy or tracheotomy may be necessary.
 - ▶ Oxygen is given as indicated.
 - ▶ The presence of shock suggests perforation and mandates an intravenous line and fluid administration.
 - ▶ Damage due to alkaline corrosives occurs by liquefaction necrosis whereby the saponification of fats and solubilisation of proteins allow deep penetration into the tissue.
- Alkalis continue to cause damage after exposure.

INGESTION:

- ▶ Milk and water are the preferred diluents
- No more than 2 glasses of water should be given to an adult.

- ▶ Neutralising agents should never be given since exothermic heat reaction may compound injury.

* Catharsis and emesis are absolutely contra-indicated.

* Activated charcoal does not absorb alkali.

* Gastric lavage should not be used.

Supportive care involves the following:

- ▶ Withhold oral feedings initially.
- ▶ If endoscopy confirms transmucosal injury start steroids only within the first 48 hours.
- ▶ Carefully evaluate the amount of tissue necrosis before assessing the need for surgical intervention.
- ▶ Patients should be instructed to seek medical attention whenever they develop difficulty in swallowing (dysphagia).

SKIN AND EYE:

- ▶ Injury should be irrigated for 20-30 minutes.

Eye injuries require saline. [Ellenhorn & Barceloux: Medical Toxicology]

For amines:

- ▶ Certain amines may cause injury to the respiratory tract and lungs if aspirated. Also, such products may cause tissue destruction leading to stricture. If lavage is performed, endotracheal and/or esophagoscopy control is suggested.
- ▶ No specific antidote is known.
- ▶ Care should be supportive and treatment based on the judgment of the physician in response to the reaction of the patient.

Laboratory animal studies have shown that a few amines are suspected of causing depletion of certain white blood cells and their precursors in lymphoid tissue. These effects may be due to an immunosuppressive mechanism.

Some persons with hyperreactive airways (e.g., asthmatic persons) may experience wheezing attacks (bronchospasm) when exposed to airway irritants.

Lung injury may result following a single massive overexposure to high vapour concentrations or multiple exposures to lower concentrations of any pulmonary irritant material. Health effects of amines, such as skin irritation and transient corneal edema ("blue haze," "halo effect," "glauropsia"), are best prevented by means of formal worker education, industrial hygiene monitoring, and exposure control methods. Persons who are highly sensitive to the triggering effect of non-specific irritants should not be assigned to jobs in which such agents are used, handled, or manufactured.

Medical surveillance programs should consist of a pre-placement evaluation to determine if workers or applicants have any impairments (e.g., hyperreactive airways or bronchial asthma) that would limit their fitness for work in jobs with potential for exposure to amines. A clinical baseline can be established at the time of this evaluation.

Periodic medical evaluations can have significant value in the early detection of disease and in providing an opportunity for health counseling.

Medical personnel conducting medical surveillance of individuals potentially exposed to polyurethane amine catalysts should consider the following:

- Health history, with emphasis on the respiratory system and history of infections
- Physical examination, with emphasis on the respiratory system and the lymphoreticular organs (lymph nodes, spleen, etc.)
- Lung function tests, pre- and post-bronchodilator if indicated
- Total and differential white blood cell count
- Serum protein electrophoresis

Persons who are concurrently exposed to isocyanates also should be kept under medical surveillance.

Pre-existing medical conditions generally aggravated by exposure include skin disorders and allergies, chronic respiratory disease (e.g. bronchitis, asthma, emphysema), liver disorders, kidney disease, and eye disease.

Broadly speaking, exposure to amines, as characterised by amine catalysts, may cause effects similar to those caused by exposure to ammonia. As such, amines should be considered potentially injurious to any tissue that is directly contacted.

Inhalation of aerosol mists or vapors, especially of heated product, can result in chemical pneumonitis, pulmonary edema, laryngeal edema, and delayed scarring of the airway or other affected organs. There is no specific treatment.

Clinical management is based upon supportive treatment, similar to that for thermal burns.

Persons with major skin contact should be maintained under medical observation for at least 24 hours due to the possibility of delayed reactions.

Polyurethane Amine Catalysts: Guidelines for Safe Handling and Disposal Technical Bulletin June 2000

Alliance for Polyurethanes Industry

Treat symptomatically.

For acute or short term repeated exposures to phenols/ cresols:

- Phenol is absorbed rapidly through lungs and skin. [Massive skin contact may result in collapse and death]*
- [Ingestion may result in ulceration of upper respiratory tract; perforation of oesophagus and/or stomach, with attendant complications, may occur. Oesophageal stricture may occur.]*
- An initial excitatory phase may present. Convulsions may appear as long as 18 hours after ingestion. Hypotension and ventricular tachycardia that require vasopressor and antiarrhythmic therapy, respectively, can occur.
- Respiratory arrest, ventricular dysrhythmias, seizures and metabolic acidosis may complicate severe phenol exposures so the initial attention should be directed towards stabilisation of breathing and circulation with ventilation, intubation, intravenous lines, fluids and cardiac monitoring as indicated.
- [Vegetable oils retard absorption; do NOT use paraffin oils or alcohols. Gastric lavage, with endotracheal intubation, should be repeated until phenol odour is no longer detectable; follow with vegetable oil. A saline cathartic should then be given.]* ALTERNATIVELY: Activated charcoal (1g/kg) may be given. A cathartic should be given after oral activated charcoal.
- Severe poisoning may require slow intravenous injection of methylene blue to treat methaemoglobinaemia.
- [Renal failure may require haemodialysis.]*
- Most absorbed phenol is biotransformed by the liver to ethereal and glucuronide sulfates and is eliminated almost completely after 24 hours. [Ellenhorn and Barceloux: Medical Toxicology] *[Union Carbide]

BIOLOGICAL EXPOSURE INDEX - BEI

These represent the determinants observed in specimens collected from a healthy worker who has been exposed to the Exposure Standard (ES or TLV):

| Determinant | Index | Sampling Time | Comments |
|--------------------------|----------------------|---------------|----------|
| 1. Total phenol in blood | 250 mg/gm creatinine | End of shift | B, NS |

B: Background levels occur in specimens collected from subjects **NOT** exposed

NS: Non-specific determinant; also seen in exposure to other materials

SECTION 5 Firefighting measures

Extinguishing media

- Foam.
- Dry chemical powder.
- BCF (where regulations permit).
- Carbon dioxide.

Special hazards arising from the substrate or mixture

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

Advice for firefighters

| | |
|------------------------------|--|
| Fire Fighting | <p>For amines:</p> <ul style="list-style-type: none"> ▸ For firefighting, cleaning up large spills, and other emergency operations, workers must wear a self-contained breathing apparatus with full face-piece, operated in a pressure-demand mode. ▸ Airline and air purifying respirators should not be worn for firefighting or other emergency or upset conditions. ▸ Respirators should be used in conjunction with a respiratory protection program, which would include suitable fit testing and medical evaluation of the user. ▸ 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 fire fighting procedures suitable for surrounding area. |
| Fire/Explosion Hazard | <ul style="list-style-type: none"> ▸ Combustible. ▸ Slight fire hazard when exposed to heat or flame. ▸ Heating may cause expansion or decomposition leading to violent rupture of containers. ▸ On combustion, may emit toxic fumes of carbon monoxide (CO). <p>Combustion products include: carbon dioxide (CO₂) nitrogen oxides (NO_x) other pyrolysis products typical of burning organic material. May emit corrosive fumes.</p> |

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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"> ▶ Drains for storage or use areas should have retention basins for pH adjustments and dilution of spills before discharge or disposal of material. ▶ Check regularly for spills and leaks. for amines: <ul style="list-style-type: none"> ▶ If possible (i.e., without risk of contact or exposure), stop the leak. ▶ Contain the spilled material by diking, then neutralize. ▶ Next, absorb the neutralized product with clay, sawdust, vermiculite, or other inert absorbent and shovel into containers. ▶ Store the containers outdoors. ▶ Clean up all spills immediately. ▶ Avoid breathing vapours and contact with skin and eyes. ▶ Control personal contact with the substance, by using protective equipment. ▶ Contain and absorb spill with sand, earth, inert material or vermiculite. |
| Major Spills | <p>For amines:</p> <ul style="list-style-type: none"> ▶ First remove all ignition sources from the spill area. ▶ Have firefighting equipment nearby, and have firefighting personnel fully trained in the proper use of the equipment and in the procedures used in fighting a chemical fire. ▶ Spills and leaks of polyurethane amine catalysts should be contained by diking, if necessary, and cleaned up only by properly trained and equipped personnel. All others should promptly leave the contaminated area and stay upwind. ▶ DO NOT touch the spill material ▶ Clear area of personnel and move upwind. ▶ 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. |

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

SECTION 7 Handling and storage

Precautions for safe handling

| | |
|--------------------------|---|
| Safe handling | <ul style="list-style-type: none"> ▶ DO NOT USE brass or copper containers / stirrers ▶ 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. ▶ Avoid contact with moisture. |
| Other information | <ul style="list-style-type: none"> ▶ Store in original containers. ▶ Keep containers securely sealed. ▶ Store in a cool, dry, well-ventilated area. ▶ Store away from incompatible materials and foodstuff containers. ▶ DO NOT store near acids, or oxidising agents ▶ No smoking, naked lights, heat or ignition sources. |

Conditions for safe storage, including any incompatibilities

| | |
|--------------------------------|--|
| Suitable container | <ul style="list-style-type: none"> ▶ DO NOT use aluminium or galvanised containers ▶ Lined metal can, lined metal pail/ can. ▶ Plastic pail. ▶ Polyliner drum. ▶ Packing as recommended by manufacturer. |
| Storage incompatibility | <ul style="list-style-type: none"> ▶ Violent reaction and fire may result when amine catalysts are exposed to, or mixed with, oxidizing agents such as perchlorates, nitrates, permanganates, chromates, nitric acid, halogens, peroxides, and some cleaning solutions containing acids. ▶ The large amount of heat generated by the reaction of the catalyst with the oxidizing agent may be sufficient to cause vigorous boiling, which can cause the hot material to splash or splatter. ▶ Avoid oxidising agents, acids, acid chlorides, acid anhydrides, chloroformates. ▶ Avoid contact with copper, aluminium and their alloys. |

SECTION 8 Exposure controls / personal protection

Control parameters

Occupational Exposure Limits (OEL)

INGREDIENT DATA

| Source | Ingredient | Material name | TWA | STEL | Peak | Notes |
|--|-----------------|-----------------------|---------------|---------------|-----------|----------------------|
| New Zealand Workplace Exposure Standards (WES) | m-xylenediamine | m-Xylene a,a'-diamine | Not Available | Not Available | 0.1 mg/m3 | skin-Skin absorption |

Emergency Limits

| Ingredient | Material name | TEEL-1 | TEEL-2 | TEEL-3 |
|--------------------|--|-----------|----------|-----------|
| p-tert-butylphenol | Tert-butylphenol, p-; (Tert-butylphenol, 4-) | 1.5 mg/m3 | 40 mg/m3 | 240 mg/m3 |

Continued...

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| Ingredient | Material name | TEEL-1 | TEEL-2 | TEEL-3 |
|---------------------------------------|---|-----------|----------|-----------|
| 2,4,6-tris(dimethylamino)methylphenol | Tris(dimethylaminomethyl)phenol, 2,4,6- | 6.5 mg/m3 | 72 mg/m3 | 430 mg/m3 |
| benzyl alcohol | Benzyl alcohol | 30 ppm | 52 ppm | 740 ppm |
| 3-dimethylaminopropylamine | Dimethyl-1,3-propanediamine, N,N-; (1-Amino-3-dimethylaminopropane) | 1.2 ppm | 13 ppm | 89 ppm |


| Ingredient | Original IDLH | Revised IDLH |
|---------------------------------------|---------------|---------------|
| p-tert-butylphenol | Not Available | Not Available |
| m-xylenediamine | Not Available | Not Available |
| trimethylhexamethylene diamine | Not Available | Not Available |
| 2,4,6-tris(dimethylamino)methylphenol | Not Available | Not Available |
| benzyl alcohol | Not Available | Not Available |
| 3-dimethylaminopropylamine | Not Available | Not Available |

Occupational Exposure Banding

| Ingredient | Occupational Exposure Band Rating | Occupational Exposure Band Limit |
|--------------------------------|-----------------------------------|----------------------------------|
| p-tert-butylphenol | E | ≤ 0.01 mg/m ³ |
| trimethylhexamethylene diamine | E | ≤ 0.1 ppm |
| benzyl alcohol | E | ≤ 0.1 ppm |
| 3-dimethylaminopropylamine | 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.

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. The basic types of engineering controls are:</p> <p>Process controls which involve changing the way a job activity or process is done to reduce the risk.</p> <p>Enclosure and/or isolation of emission source which keeps a selected hazard "physically" away from the worker and ventilation that strategically "adds" and "removes" air in the work environment.</p> |
| Personal protection |  |
| Eye and face protection | <ul style="list-style-type: none"> ▶ Chemical goggles. ▶ Full face shield may be required for supplementary but never for primary protection of eyes. ▶ 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. <p>For amines: SPECIAL PRECAUTION:</p> <ul style="list-style-type: none"> ▶ Because amines are alkaline materials that can cause rapid and severe tissue damage, wearing of contact lenses while working with amines is strongly discouraged. Wearing such lenses can prolong contact of the eye tissue with the amine, thereby causing more severe damage. ▶ Appropriate eye protection should be worn whenever amines are handled or whenever there is any possibility of direct contact with liquid products, vapors, or aerosol mists. <p>CAUTION:</p> <ul style="list-style-type: none"> ▶ Ordinary safety glasses or face-shields will not prevent eye irritation from high concentrations of vapour. |
| Skin protection | See Hand protection below |
| Hands/feet protection | <ul style="list-style-type: none"> ▶ Wear chemical protective gloves, e.g. PVC. ▶ Wear safety footwear or safety gumboots, e.g. Rubber ▶ When handling corrosive liquids, wear trousers or overalls outside of boots, to avoid spills entering boots. <p>NOTE:</p> <ul style="list-style-type: none"> ▶ The material may produce skin sensitisation in predisposed individuals. Care must be taken, when removing gloves and other protective equipment, to avoid all possible skin contact. ▶ Contaminated leather items, such as shoes, belts and watch-bands should be removed and destroyed. <p>The selection of suitable gloves does not only depend on the material, but also on further marks of quality which vary from manufacturer to manufacturer. Where the chemical is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.</p> <p>The exact break through time for substances has to be obtained from the manufacturer of the protective gloves and has to be observed when making a final choice.</p> <p>Personal hygiene is a key element of effective hand care.</p> <p>For amines:</p> <ul style="list-style-type: none"> ▶ 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 ▶ Where there is a possibility of exposure to liquid amines skin protection should include: rubber gloves, (neoprene, nitrile, or butyl). ▶ DO NOT USE latex. ▶ Leather wear not recommended: Contaminated leather footwear, watch bands, should be destroyed, i.e. burnt, as they cannot be adequately decontaminated ▶ Neoprene rubber gloves |
| Body protection | See Other protection below |
| Other protection | <ul style="list-style-type: none"> ▶ Overalls. ▶ PVC Apron. ▶ PVC protective suit may be required if exposure severe. ▶ Eyewash unit. |

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:

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| Material | CPI |
|----------|-----|
| BUTYL | A |
| 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.

Respiratory protection

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

Selection of the Class and Type of respirator will depend upon the level of breathing zone contaminant and the chemical nature of the contaminant. Protection Factors (defined as the ratio of contaminant outside and inside the mask) may also be important.

| Required minimum protection factor | Maximum gas/vapour concentration present in air p.p.m. (by volume) | Half-face Respirator | Full-Face Respirator |
|------------------------------------|--|----------------------|----------------------|
| up to 10 | 1000 | AK-AUS / Class1 P2 | - |
| up to 50 | 1000 | - | AK-AUS / Class 1 P2 |
| up to 50 | 5000 | Airline * | - |
| up to 100 | 5000 | - | AK-2 P2 |
| up to 100 | 10000 | - | AK-3 P2 |
| 100+ | | | Airline** |

* - Continuous Flow ** - Continuous-flow or positive pressure demand

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

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

Where engineering controls are not feasible and work practices do not reduce airborne amine concentrations below recommended exposure limits, appropriate respiratory protection should be used. In such cases, air-purifying respirators equipped with cartridges designed to protect against amines are recommended.

SECTION 9 Physical and chemical properties**Information on basic physical and chemical properties**

| | | | |
|---|---|--|----------------|
| Appearance | Yellowish liquid with amine odour; does not mix with water. | | |
| Physical state | Liquid | Relative density (Water = 1) | 1.0 |
| Odour | Not Available | Partition coefficient n-octanol / water | Not Available |
| Odour threshold | Not Available | Auto-ignition temperature (°C) | Not Available |
| pH (as supplied) | Not Available | Decomposition temperature | Not Available |
| Melting point / freezing point (°C) | Not Available | Viscosity (cSt) | Not Available |
| Initial boiling point and boiling range (°C) | >200 | Molecular weight (g/mol) | Not Applicable |
| Flash point (°C) | >76 (SCC) | Taste | Not Available |
| Evaporation rate | Not Available | Explosive properties | Not Available |
| Flammability | Combustible. | Oxidising properties | Not Available |
| Upper Explosive Limit (%) | Not Available | Surface Tension (dyn/cm or mN/m) | Not Available |
| Lower Explosive Limit (%) | Not Available | Volatile Component (%vol) | Not Available |
| Vapour pressure (kPa) | Not Available | Gas group | Not Available |
| Solubility in water | Immiscible | pH as a solution (1%) | Not Available |
| Vapour density (Air = 1) | Not Available | VOC g/L | Not Available |

SECTION 10 Stability and reactivity

| | |
|---------------------------|--|
| Reactivity | See section 7 |
| Chemical stability | <ul style="list-style-type: none"> ▶ Unstable in the presence of incompatible materials. ▶ Product is considered stable. ▶ Hazardous polymerisation will not occur. |

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

SECTION 11 Toxicological information

Information on toxicological effects

| | |
|---------------------|---|
| Inhaled | <p>Inhalation of aerosols (mists, fumes), generated by the material during the course of normal handling, may be harmful. Inhalation of epoxy resin amine hardeners (including polyamines and amine adducts) may produce bronchospasm and coughing episodes lasting several days after cessation of the exposure. Even faint traces of these vapours may trigger an intense reaction in individuals showing "amine asthma".</p> <p>The compound causes intestinal irritation due to its caustic nature. Lower doses may cause impaired appetite, sluggish reaction to stimuli and reduced alertness. High doses may cause eye irritation, excessive tear secretion; difficulty in breathing; lung, liver and kidney damage. Death may also result.</p> <p>Exposure to high levels of p-tert-butylphenol dust may result in spasm of the bronchi and lung swelling. Vapours and mist may irritate the nose and throat. Inhaling concentrated vapour may cause headaches, nausea, drowsiness, slurred speech, dizziness, stupor, sleepiness and even unconsciousness. Delayed lung injury and chemical lung inflammation may also result.</p> <p>Inhalation of amine vapours may cause irritation of the mucous membrane of the nose and throat, and lung irritation with respiratory distress and cough. Swelling and inflammation of the respiratory tract is seen in serious cases; with headache, nausea, faintness and anxiety. Inhalation hazard is increased at higher temperatures.</p> <p>If phenols are absorbed via the lungs, systemic effects may occur affecting the cardiovascular and nervous systems. Inhalation can result in profuse perspiration, intense thirst, nausea, vomiting, diarrhoea, cyanosis, restlessness, stupor, falling blood pressure, hyperventilation, abdominal pain, anaemia, convulsions, coma, swelling and inflammation of the lung.</p> |
| Ingestion | <p>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.</p> <p>The material can produce chemical burns within the oral cavity and gastrointestinal tract following ingestion.</p> <p>Ingestion of amine epoxy-curing agents (hardeners) may cause severe abdominal pain, nausea, vomiting or diarrhoea. The vomitus may contain blood and mucus.</p> <p>Ingestion of p-tert-butylphenol may cause fatigue, muscle weakness, laboured breathing and gastrointestinal irritation.</p> <p>Amines without benzene rings when swallowed are absorbed throughout the gut. Corrosive action may cause damage throughout the gastrointestinal tract.</p> |
| Skin Contact | <p>Skin contact with the material may be harmful; systemic effects may result following absorption.</p> <p>The material can produce chemical burns following direct contact with the skin.</p> <p>Amine epoxy-curing agents (hardeners) may produce primary skin irritation and sensitisation dermatitis in predisposed individuals. Cutaneous reactions include erythema, intolerable itching and severe facial swelling.</p> <p>Undiluted benzene-1,3-dimethanamine may be corrosive to the skin. Concentrated solution of the material produces severe reddening and irritation. Repeated applications of a dilute concentration produce local swelling and redness, and skin sensitisation, which has been reported among workers in plastics manufacturing.</p> <p>Skin contact with p-tert-butylphenol may result in severe irritation or ulceration and burns, and sensitization has been known to occur. Skin inflammation may also result from less severe exposures.</p> <p>Open cuts, abraded or irritated skin should not be exposed to this material</p> <p>Entry into the blood-stream, through, for example, cuts, abrasions or lesions, may produce systemic injury with harmful effects. Examine the skin prior to the use of the material and ensure that any external damage is suitably protected.</p> |
| Eye | <p>The material can produce chemical burns to the eye following direct contact. Vapours or mists may be extremely irritating.</p> <p>If applied to the eyes, this material causes severe eye damage.</p> <p>Eye contact with p-tert-butylphenol may cause severe pain and eye damage. If concentrated, the vapour will irritate the eyes and cause inflammation of the conjunctiva and excessive tear secretion.</p> <p>Irritation of the eyes may produce a heavy secretion of tears (lacrimation).</p> |
| Chronic | <p>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.</p> <p>Inhaling this product is more likely to cause a sensitisation reaction in some persons compared to the general population.</p> <p>Skin contact with the material is more likely to cause a sensitisation reaction in some persons compared to the general population.</p> <p>Ample evidence from experiments exists that there is a suspicion this material directly reduces fertility.</p> <p>Substance accumulation, in the human body, may occur and may cause some concern following repeated or long-term occupational exposure.</p> <p>Long-term exposure to phenol derivatives can cause skin inflammation, loss of appetite and weight, weakness, muscle aches and pain, liver damage, dark urine, loss of nails, skin eruptions, diarrhoea, nervous disorders with headache, salivation, fainting, discolouration of the skin and eyes, vertigo and mental disorders, and damage to the liver and kidneys.</p> |

| | | |
|------------------------------|--|---|
| Ardex MC Rapid Part B | TOXICITY | IRRITATION |
| | Not Available | Not Available |
| p-tert-butylphenol | TOXICITY | IRRITATION |
| | Dermal (rabbit) LD50: 2288 mg/kg ^[2] | Eye (rabbit) 0.05 mg/24h - SEVERE |
| | Oral (rat) LD50: >2000 mg/kg ^[1] | Eye (rabbit): 10 mg - SEVERE |
| | | Eye: adverse effect observed (irritating) ^[1] |
| | | Skin (rabbit): 500 mg/4h - mild |
| | | Skin: adverse effect observed (irritating) ^[1] |
| m-xylenediamine | TOXICITY | IRRITATION |
| | Dermal (rabbit) LD50: 2000 mg/kg ^[2] | Eye (rabbit): 0.05 mg/24h SEVERE |
| | Inhalation (rat) LC50: 174.800325 mg/l/1h ^[2] | Skin (rabbit): 0.75 mg/24h SEVERE |
| | Oral (rat) LD50: >200 mg/kg ^[1] | |

Ardex MC Rapid Part B

| | | |
|---|---|--|
| trimethylhexamethylene diamine | TOXICITY | IRRITATION |
| | Oral (rat) LD50: 910 mg/kg ^[2] | Eye (rabbit): Corrosive * Skin (rabbit): Corrosive * |
| 2,4,6-tris[(dimethylamino)methyl]phenol | TOXICITY | IRRITATION |
| | dermal (rat) LD50: >973 mg/kg ^[1] | Eye (rabbit): 0.05 mg/24h - SEVERE |
| | Inhalation (rat) LC50: >0.125 mg/l/1hr.] ^[2] | Eye: adverse effect observed (irreversible damage) ^[1] |
| | Oral (rat) LD50: 1200 mg/kg ^[2] | Skin (rabbit): 2 mg/24h - SEVERE Skin: adverse effect observed (corrosive) ^[1] |
| benzyl alcohol | TOXICITY | IRRITATION |
| | Dermal (rabbit) LD50: 2000 mg/kg ^[2] | Eye (rabbit): 0.75 mg open SEVERE |
| | Inhalation (rat) LC50: >4.178 mg/l/4h ^[2] | Eye: adverse effect observed (irritating) ^[1] |
| | Oral (rat) LD50: 1230 mg/kg ^[2] | Skin (man): 16 mg/48h-mild Skin (rabbit): 10 mg/24h open-mild Skin: no adverse effect observed (not irritating) ^[1] |
| 3-dimethylaminopropylamine | TOXICITY | IRRITATION |
| | dermal (rat) LD50: >400-2000 mg/kg ^[1] | Eye (rabbit): 5 mg - moderate |
| | Oral (rat) LD50: 377.1 mg/kg ^[1] | Eye: adverse effect observed (irreversible damage) ^[1] Skin (rabbit): 0.1 mg/24h - open Skin: adverse effect observed (corrosive) ^[1] Skin: adverse effect observed (irritating) ^[1] |

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

| | |
|---|---|
| P-TERT-BUTYLPHENOL | <p>These substances are intravenous anaesthetic agents. They have a very low level of acute toxicity; they may cause skin irritation. Repeated exposure may irritate the stomach. There is no evidence of this group of substances causing mutation or adverse effects on reproduction. However, at high doses, there may be reduction of newborn weight and reduced survival in early lactation period.</p> <p>For p-tert-butylphenol: p-tert-butylphenol has low acute toxicity via all routes. It irritates the skin, eyes and airway. It may cause skin sensitisation in humans. Exposure by all routes can lead to loss of pigment from the skin.</p> |
| M-XYLENEDIAMINE | <p>Allergic reactions involving the respiratory tract are usually due to interactions between IgE antibodies and allergens and occur rapidly. Allergic potential of the allergen and period of exposure often determine the severity of symptoms. Some people may be genetically more prone than others, and exposure to other irritants may aggravate symptoms. Allergy causing activity is due to interactions with proteins.</p> <p>Attention should be paid to atopic diathesis, characterised by increased susceptibility to nasal inflammation, asthma and eczema. Exogenous allergic alveolitis is induced essentially by allergen specific immune-complexes of the IgG type; cell-mediated reactions (T lymphocytes) may be involved. Such allergy is of the delayed type with onset up to four hours following exposure.</p> <p>For benzene-1,3-dimethanamine (m-xylene-alpha, alpha'-diamine):</p> <p>Animal testing showed that benzene-1,3-methanamine caused tissue damage to the digestive and respiratory organs, if given by mouth or inhaled, respectively. The chemical is corrosive to animal skin, and may cause sensitization. Testing has not shown any reproductive toxicity or ability to cause mutations. In humans, it appears to act as a gastrointestinal irritant, and has been shown to cause contact sensitization, even at low concentrations.</p> |
| TRIMETHYLHEXAMETHYLENE DIAMINE | <p>The material may produce moderate eye irritation leading to inflammation. Repeated or prolonged exposure to irritants may produce conjunctivitis.</p> <p>The material may produce respiratory tract irritation, and result in damage to the lung including reduced lung function.</p> |
| 2,4,6-TRIS[(DIMETHYLAMINO)METHYL]PHENOL | <p>No significant acute toxicological data identified in literature search.</p> |
| BENZYL ALCOHOL | <p>Unlike benzylic alcohols, the beta-hydroxyl group of the members of benzyl alkyl alcohols contributes to break down reactions but do not undergo phase II metabolic activation. Though structurally similar to cancer causing ethyl benzene, phenethyl alcohol is only of negligible concern due to limited similarity in their pattern of activity.</p> <p>For benzoates:</p> <p>Benzyl alcohol, benzoic acid and its sodium and potassium salt have a common metabolic and excretion pathway. All but benzyl alcohol are considered to be unharmed and of low acute toxicity. They may cause slight irritation by oral, dermal or inhalation exposure except sodium benzoate which doesn't irritate the skin. Studies showed increased mortality, reduced weight gain, liver and kidney effects at higher doses, also, lesions of the brains, thymus and skeletal muscles may occur with benzyl alcohol.</p> <p>Adverse reactions to fragrances in perfumes and fragranced cosmetic products include allergic contact dermatitis, irritant contact dermatitis, sensitivity to light, immediate contact reactions, and pigmented contact dermatitis. Airborne and conjugal contact dermatitis occurs. Contact allergy is a lifelong condition, so symptoms may occur on re-exposure. Allergic contact dermatitis can be severe and widespread, with significant impairment of quality of life and potential consequences for fitness for work.</p> <p>If the perfume contains a sensitizing component, intolerance to perfumes by inhalation may occur.</p> <p>Fragrance allergens act as haptens, low molecular weight chemicals that cause an immune response only when attached to a carrier protein. However, not all sensitizing fragrance chemicals are directly reactive, but require previous activation. A prehapten is a chemical that itself causes little or no sensitization, but is transformed into a hapten in the skin (bioactivation), usually via enzyme catalysis. It is not always possible to know whether a particular allergen that is not directly reactive acts as a prehapten or a prohapten, or both.</p> <p>This is a member or analogue of a group of benzyl derivatives generally regarded as safe (GRAS), based partly on their self-limiting properties as flavouring substances in food. In humans and other animals, they are rapidly absorbed, broken down and excreted, with a wide safety margin. They also lack significant potential to cause genetic toxicity and mutations. The intake of benzyl derivatives as natural components of traditional foods is actually higher than the intake as intentionally added flavouring substances. The aryl alkyl alcohol (AAA) fragrance ingredients have diverse chemical structures, with similar metabolic and toxicity profiles. The</p> |

Ardex MC Rapid Part B

| | |
|---|--|
| | AAA fragrances demonstrate low acute and subchronic toxicity by skin contact and swallowing. At concentrations likely to be encountered by consumers, AAA fragrance ingredients are non-irritating to the skin. The potential for eye irritation is minimal. |
| 3-DIMETHYLAMINOPROPYLAMINE | for 3-dimethylaminopropylamine (syn 3-aminopropylidimethylamine, DMPA) Acute toxicity: DMPA was been found to be harmful following oral administration to rats. In a field study workers showed impaired respiration (wheezy breath, constricted chest, irritation of mucosa of the eyes, nose and pharynx) as a result of occupational exposure to DMPA (2.34 – 5.87 mg/m ³ = 0.55 – 1.38 ppm). Based on the results of the sensitisation test on the skin DMPA has been classified as having a sensitising effect. DMPA showed strong irritating or corrosive effects. Repeat dose toxicity: In a oral 28-day subchronic toxicity study with rats, the no-observed-adverse effect-level (NOAEL) was 50 mg /kg bw/day. In the oral reproduction/developmental toxicity screening test the no-observed-adverse effect-level (NOAEL) was 200 mg/kg bw/day. Genotoxicity: DMPA was not mutagenic in the Ames Test and in a mouse micronucleus assay. |
| P-TERT-BUTYLPHENOL & M-XYLENEDIAMINE & 2,4,6-TRIS((DIMETHYLAMINO)METHYL)PHENOL | The material may produce severe irritation to the eye causing pronounced inflammation. Repeated or prolonged exposure to irritants may produce conjunctivitis. |
| P-TERT-BUTYLPHENOL & TRIMETHYLHEXAMETHYLENE DIAMINE & BENZYL ALCOHOL | The material may cause skin irritation after prolonged or repeated exposure and may produce on contact skin redness, swelling, the production of vesicles, scaling and thickening of the skin. |
| P-TERT-BUTYLPHENOL & M-XYLENEDIAMINE & TRIMETHYLHEXAMETHYLENE DIAMINE & 2,4,6-TRIS((DIMETHYLAMINO)METHYL)PHENOL & 3-DIMETHYLAMINOPROPYLAMINE | 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. |
| M-XYLENEDIAMINE & TRIMETHYLHEXAMETHYLENE DIAMINE & BENZYL ALCOHOL & 3-DIMETHYLAMINOPROPYLAMINE | The following information refers to contact allergens as a group and may not be specific to this product. Contact allergies quickly manifest themselves as contact eczema, more rarely as urticaria or Quincke's oedema. The pathogenesis of contact eczema involves a cell-mediated (T lymphocytes) immune reaction of the delayed type. Other allergic skin reactions, e.g. contact urticaria, involve antibody-mediated immune reactions. The significance of the contact allergen is not simply determined by its sensitisation potential: the distribution of the substance and the opportunities for contact with it are equally important. |
| M-XYLENEDIAMINE & 2,4,6-TRIS((DIMETHYLAMINO)METHYL)PHENOL | The material may cause severe skin irritation after prolonged or repeated exposure and may produce on contact skin redness, swelling, the production of vesicles, scaling and thickening of the skin. Repeated exposures may produce severe ulceration. |
| M-XYLENEDIAMINE & TRIMETHYLHEXAMETHYLENE DIAMINE & 2,4,6-TRIS((DIMETHYLAMINO)METHYL)PHENOL & 3-DIMETHYLAMINOPROPYLAMINE | Overexposure to most of these materials may cause adverse health effects. Many amine-based compounds can cause release of histamines, which, in turn, can trigger allergic and other physiological effects, including constriction of the bronchi or asthma and inflammation of the cavity of the nose. Whole-body symptoms include headache, nausea, faintness, anxiety, a decrease in blood pressure, rapid heartbeat, itching, reddening of the skin, urticaria (hives) and swelling of the face, which are usually transient. There are generally four routes of possible or potential exposure: inhalation, skin contact, eye contact, and swallowing. Inhalation: Inhaling vapours may result in moderate to severe irritation of the tissues of the nose and throat and can irritate the lungs. Higher concentrations of certain amines can produce severe respiratory irritation, characterized by discharge from the nose, coughing, difficulty in breathing and chest pain. Chronic exposure via inhalation may cause headache, nausea, vomiting, drowsiness, sore throat, inflammation of the bronchi and lungs, and possible lung damage. |

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

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

SECTION 12 Ecological information

Toxicity

| | Endpoint | Test Duration (hr) | Species | Value | Source |
|------------------------------|---------------|--------------------|-------------------------------|---------------|---------------|
| Ardex MC Rapid Part B | Not Available | Not Available | Not Available | Not Available | Not Available |
| p-tert-butylphenol | LC50 | 96 | Fish | >1mg/L | 2 |
| | EC50 | 48 | Crustacea | =3.9mg/L | 1 |
| | EC50 | 72 | Algae or other aquatic plants | ca.2.4mg/L | 2 |
| | BCF | 24 | Algae or other aquatic plants | 0.05mg/L | 4 |
| | NOEC | 3072 | Fish | 0.01mg/L | 2 |
| m-xylenediamine | LC50 | 96 | Fish | 75mg/L | 2 |
| | EC50 | 48 | Crustacea | 15.2mg/L | 2 |
| | EC50 | 72 | Algae or other aquatic plants | 12mg/L | 2 |
| | NOEC | 504 | Crustacea | 4.7mg/L | 2 |

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| | Endpoint | Test Duration (hr) | Species | Value | Source |
|----------------------------|---|--------------------|-------------------------------|------------|------------|
| | trimethylhexamethylene diamine | LC50 | 96 | Fish | 78.605mg/L |
| EC50 | | 96 | Algae or other aquatic plants | 9.058mg/L | 3 |
| EC10 | | 72 | Algae or other aquatic plants | =16.3mg/L | 1 |
| | Endpoint | Test Duration (hr) | Species | Value | Source |
| | 2,4,6-tris[(dimethylamino)methyl]phenol | LC50 | 96 | Fish | 175mg/L |
| EC50 | | 72 | Algae or other aquatic plants | 2.8mg/L | 2 |
| benzyl alcohol | Endpoint | Test Duration (hr) | Species | Value | Source |
| | LC50 | 96 | Fish | 10mg/L | 2 |
| | EC50 | 48 | Crustacea | 230mg/L | 2 |
| | EC50 | 96 | Algae or other aquatic plants | 76.828mg/L | 2 |
| NOEC | 336 | Fish | 5.1mg/L | 2 | |
| 3-dimethylaminopropylamine | Endpoint | Test Duration (hr) | Species | Value | Source |
| | LC50 | 96 | Fish | =100mg/L | 1 |
| | EC50 | 48 | Crustacea | 59.46mg/L | 2 |
| | EC50 | 72 | Algae or other aquatic plants | 7-120mg/L | 2 |
| | EC10 | 528 | Crustacea | 5.65mg/L | 2 |
| NOEC | 528 | Crustacea | 3.64mg/L | 2 | |

Legend: Extracted from 1. IUCLID Toxicity Data 2. Europe ECHA Registered Substances - Ecotoxicological Information - Aquatic Toxicity 3. EPIWIN Suite V3.12 (QSAR) - Aquatic Toxicity Data (Estimated) 4. US EPA, Ecotox database - Aquatic Toxicity Data 5. ECETOC Aquatic Hazard Assessment Data 6. NITE (Japan) - Bioconcentration Data 7. METI (Japan) - Bioconcentration Data 8. Vendor Data

Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
Prevent, by any means available, spillage from entering drains or water courses.
DO NOT discharge into sewer or waterways.

Persistence and degradability

| Ingredient | Persistence: Water/Soil | Persistence: Air |
|---|-------------------------|------------------|
| p-tert-butylphenol | HIGH | HIGH |
| m-xylenediamine | HIGH | HIGH |
| trimethylhexamethylene diamine | HIGH | HIGH |
| 2,4,6-tris[(dimethylamino)methyl]phenol | HIGH | HIGH |
| benzyl alcohol | LOW | LOW |
| 3-dimethylaminopropylamine | HIGH | HIGH |

Bioaccumulative potential

| Ingredient | Bioaccumulation |
|---|------------------------|
| p-tert-butylphenol | LOW (BCF = 240) |
| m-xylenediamine | LOW (BCF = 2.7) |
| trimethylhexamethylene diamine | LOW (LogKOW = 1.6347) |
| 2,4,6-tris[(dimethylamino)methyl]phenol | LOW (LogKOW = 0.773) |
| benzyl alcohol | LOW (LogKOW = 1.1) |
| 3-dimethylaminopropylamine | LOW (LogKOW = -0.4502) |

Mobility in soil

| Ingredient | Mobility |
|---|-------------------|
| p-tert-butylphenol | LOW (KOC = 1912) |
| m-xylenediamine | LOW (KOC = 914.6) |
| trimethylhexamethylene diamine | LOW (KOC = 1101) |
| 2,4,6-tris[(dimethylamino)methyl]phenol | LOW (KOC = 15130) |
| benzyl alcohol | LOW (KOC = 15.66) |
| 3-dimethylaminopropylamine | LOW (KOC = 73.36) |

SECTION 13 Disposal considerations

Waste treatment methods

Product / Packaging disposal † Containers may still present a chemical hazard/ danger when empty.

Continued...

- ▶ Return to supplier for reuse/ recycling if possible.
- Otherwise:
- ▶ If container can not be cleaned sufficiently well to ensure that residuals do not remain or if the container cannot be used to store the same product, then puncture containers, to prevent re-use, and bury at an authorised landfill.
 - ▶ Where possible retain label warnings and SDS and observe all notices pertaining to the product.
 - ▶ Recycle wherever possible.
 - ▶ Consult manufacturer for recycling options or consult local or regional waste management authority for disposal if no suitable treatment or disposal facility can be identified.
 - ▶ Treat and neutralise at an approved treatment plant.
 - ▶ Treatment should involve: Neutralisation with suitable dilute acid followed by: burial in a land-fill specifically licensed to accept chemical and / or pharmaceutical wastes or Incineration in a licensed apparatus (after admixture with suitable combustible material).
 - ▶ Most polyurethane amine catalysts and their byproducts can be chemically or biologically degraded.
 - ▶ Incineration is the preferred method of disposal; however, nitrogen oxide emission control may be required to meet current environmental regulations.
 - ▶ Landfill disposal of amine-containing wastes is acceptable only where landfill sites are governmentally approved to receive this type of waste.
 - ▶ A suitable industrial or municipal waste treatment system also can be used, depending upon the quality and quantity of waste to be treated, the treatment plant capability, and discharge water quality standards.
- Drum Disposal
- ▶ While the many laws, regulations, and ordinances governing the disposal of empty containers are varied and complex, one principle is common to all: the responsibility for the proper disposal of empty containers lies with the waste generator.
 - ▶ Moreover, the waste generator is also responsible for any injury to health or environment caused by improper disposal.
 - ▶ It is imperative, therefore, that all persons responsible for the disposal of chemical wastes (including "empty" drums) be familiar with the requirements of the legislation governing such 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.
- ▶ **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.

Ensure that the hazardous substance is disposed in accordance with the Hazardous Substances (Disposal) Notice 2017



Disposal Requirements

Packages that have been in direct contact with the hazardous substance must be only disposed if the hazardous substance was appropriately removed and cleaned out from the package. The package must be disposed according to the manufacturer's directions taking into account the material it is made of. Packages which hazardous content have been appropriately treated and removed may be recycled.

The hazardous substance must only be disposed if it has been treated by a method that changed the characteristics or composition of the substance and it is no longer hazardous.

SECTION 14 Transport information

Labels Required

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

Land transport (UN)

| | | |
|------------------------------|--|----------------|
| UN number | 1760 | |
| UN proper shipping name | CORROSIVE LIQUID, N.O.S. (contains trimethylhexamethylene diamine and m-xylenediamine) | |
| Transport hazard class(es) | Class | 8 |
| | Subrisk | Not Applicable |
| Packing group | III | |
| Environmental hazard | Environmentally hazardous | |
| Special precautions for user | Special provisions | 223; 274 |
| | Limited quantity | 5 L |

Air transport (ICAO-IATA / DGR)

| | |
|-------------------------|--|
| UN number | 1760 |
| UN proper shipping name | Corrosive liquid, n.o.s. * (contains trimethylhexamethylene diamine and m-xylenediamine) |

| | | |
|-------------------------------------|---|----------------|
| Transport hazard class(es) | ICAO/IATA Class | 8 |
| | ICAO / IATA Subrisk | Not Applicable |
| | ERG Code | 8L |
| Packing group | III | |
| Environmental hazard | Environmentally hazardous | |
| Special precautions for user | Special provisions | A3 A803 |
| | Cargo Only Packing Instructions | 856 |
| | Cargo Only Maximum Qty / Pack | 60 L |
| | Passenger and Cargo Packing Instructions | 852 |
| | Passenger and Cargo Maximum Qty / Pack | 5 L |
| | Passenger and Cargo Limited Quantity Packing Instructions | Y841 |
| | Passenger and Cargo Limited Maximum Qty / Pack | 1 L |

Sea transport (IMDG-Code / GGVSee)

| | | |
|-------------------------------------|--|----------------|
| UN number | 1760 | |
| UN proper shipping name | CORROSIVE LIQUID, N.O.S. (contains trimethylhexamethylene diamine and m-xylenediamine) | |
| Transport hazard class(es) | IMDG Class | 8 |
| | IMDG Subrisk | Not Applicable |
| Packing group | III | |
| Environmental hazard | Marine Pollutant | |
| Special precautions for user | EMS Number | F-A , S-B |
| | Special provisions | 223 274 |
| | Limited Quantities | 5 L |

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

Not Applicable

SECTION 15 Regulatory information**Safety, health and environmental regulations / legislation specific for the substance or mixture**

This substance is to be managed using the conditions specified in an applicable Group Standard

| HSR Number | Group Standard |
|------------|---|
| HSR002596 | Laboratory Chemicals and Reagent Kits Group Standard 2017 |
| HSR002628 | N.O.S. (Toxic [6.1, 6.7], Corrosive, Combustible) Group Standard 2017 |
| HSR100425 | Pharmaceutical Active Ingredients Group Standard 2017 |
| HSR100757 | Veterinary Medicine (Limited Pack Size, Finished Dose) Standard 2017 |

p-tert-butylphenol is found on the following regulatory lists

New Zealand Approved Hazardous Substances with controls
 New Zealand Hazardous Substances and New Organisms (HSNO) Act - Classification of Chemicals

New Zealand Hazardous Substances and New Organisms (HSNO) Act - Classification of Chemicals - Classification Data
 New Zealand Inventory of Chemicals (NZIoC)

m-xylenediamine is found on the following regulatory lists

New Zealand Inventory of Chemicals (NZIoC)

New Zealand Workplace Exposure Standards (WES)

trimethylhexamethylene diamine is found on the following regulatory lists

New Zealand Inventory of Chemicals (NZIoC)

2,4,6-tris[(dimethylamino)methyl]phenol is found on the following regulatory lists

New Zealand Approved Hazardous Substances with controls
 New Zealand Hazardous Substances and New Organisms (HSNO) Act - Classification of Chemicals

New Zealand Hazardous Substances and New Organisms (HSNO) Act - Classification of Chemicals - Classification Data
 New Zealand Inventory of Chemicals (NZIoC)

benzyl alcohol is found on the following regulatory lists

New Zealand Approved Hazardous Substances with controls
 New Zealand Hazardous Substances and New Organisms (HSNO) Act - Classification of Chemicals

New Zealand Hazardous Substances and New Organisms (HSNO) Act - Classification of Chemicals - Classification Data
 New Zealand Inventory of Chemicals (NZIoC)

3-dimethylaminopropylamine is found on the following regulatory lists

New Zealand Approved Hazardous Substances with controls
 New Zealand Hazardous Substances and New Organisms (HSNO) Act - Classification of Chemicals

New Zealand Hazardous Substances and New Organisms (HSNO) Act - Classification of Chemicals - Classification Data
 New Zealand Inventory of Chemicals (NZIoC)

Hazardous Substance Location

Subject to the Health and Safety at Work (Hazardous Substances) Regulations 2017.

| Hazard Class | Quantity beyond which controls apply for closed containers | Quantity beyond which controls apply when use occurring in open containers |
|----------------|--|--|
| Not Applicable | Not Applicable | Not Applicable |

Certified Handler

Subject to Part 4 of the Health and Safety at Work (Hazardous Substances) Regulations 2017.

| Class of substance | Quantities |
|---|--------------|
| 6.1A, 6.1B, 6.1C (except for propellant powders of classes 1.1C (UN 0160) and 1.3C (UN 0161)) | Any quantity |

Refer Group Standards for further information

Tracking Requirements

Not Applicable

National Inventory Status

| National Inventory | Status |
|--------------------------------|---|
| Australia - AIIC | Yes |
| Australia - Non-Industrial Use | No (p-tert-butylphenol; m-xylenediamine; trimethylhexamethylene diamine; 2,4,6-tris[(dimethylamino)methyl]phenol; benzyl alcohol; 3-dimethylaminopropylamine) |
| Canada - DSL | Yes |
| Canada - NDSL | No (p-tert-butylphenol; m-xylenediamine; trimethylhexamethylene diamine; 2,4,6-tris[(dimethylamino)methyl]phenol; benzyl alcohol; 3-dimethylaminopropylamine) |
| China - IECSC | Yes |
| Europe - EINEC / ELINCS / NLP | Yes |
| Japan - ENCS | Yes |
| Korea - KECI | Yes |
| New Zealand - NZIoC | Yes |
| Philippines - PICCS | Yes |
| USA - TSCA | Yes |
| Taiwan - TCSI | Yes |
| Mexico - INSQ | Yes |
| Vietnam - NCI | Yes |
| Russia - ARIPS | Yes |
| Legend: | Yes = All CAS declared ingredients are on the inventory No = One or more of the CAS listed ingredients are not on the inventory and are not exempt from listing (see specific ingredients in brackets) |

SECTION 16 Other information

| | |
|----------------------|------------|
| Revision Date | 01/11/2019 |
| Initial Date | 07/11/2014 |

SDS Version Summary

| Version | Issue Date | Sections Updated |
|---------|------------|--|
| 4.1.1.1 | 01/11/2019 | One-off system update. NOTE: This may or may not change the GHS classification |

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
 OSF: Odour Safety Factor
 NOAEL :No Observed Adverse Effect Level
 LOAEL: Lowest Observed Adverse Effect Level
 TLV: Threshold Limit Value
 LOD: Limit Of Detection
 OTV: Odour Threshold Value

BCF: BioConcentration Factors

BEI: Biological Exposure Index

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