

DANLAID DE400H HARDENER

Chemwatch Independent Material Safety Data Sheet
Issue Date: 22-Jun-2011
C9317EC

CHEMWATCH 27-3988
Version No:2.0
CD 2011/2 Page 1 of 8

Section 1 - CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME

DANLAID DE400H HARDENER

PROPER SHIPPING NAME

AMINES, LIQUID, CORROSIVE, N.O.S. or POLYAMINES, LIQUID, CORROSIVE, N.O.S.(contains formaldehyde/ benzenamine, hydrogenated)

PRODUCT USE

Curing agent.

SUPPLIER

Company: Danlaid Contracting Pty Ltd
Address:
43 DeHavilland Road
Mordialloc
VIC, 3195
Australia
Telephone: +61 3 8514 6300
Fax: +61 3 8514 6310
Email: sales@danlaid.com.au

Section 2 - HAZARDS IDENTIFICATION

STATEMENT OF HAZARDOUS NATURE

HAZARDOUS SUBSTANCE. DANGEROUS GOODS. According to NOHSC Criteria, and ADG Code.



RISK

- May form explosive peroxides.
- Harmful by inhalation, in contact with skin and if swallowed.
- Causes burns.
- Risk of serious damage to eyes.
- May cause SENSITISATION by skin contact.
- Harmful to aquatic organisms, may cause long- term adverse effects in the aquatic environment.
- Vapours may cause drowsiness and dizziness.

SAFETY

- Keep locked up.
- Do not breathe gas/fumes/vapour/spray.
- Avoid contact with skin.
- Avoid contact with eyes.
- Wear suitable protective clothing.
- Wear suitable gloves.
- Wear eye/face protection.
- Handle and open container with care.
- Use only in well ventilated areas.
- Keep container in a well ventilated place.
- To clean the floor and all objects contaminated by this material, use water and detergent.
- Keep container tightly closed.
- Take off immediately all contaminated clothing.
- In case of contact with eyes, rinse with plenty of water and contact Doctor or Poisons Information Centre.
- In case of accident or if you feel unwell IMMEDIATELY contact Doctor or Poisons Information Centre (show label if possible).
- This material and its container must be disposed of as hazardous waste.
- In case of accident by inhalation: remove casualty to fresh air and keep at rest.

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DANLAID DE400H HARDENER

Chemwatch Independent Material Safety Data Sheet

Issue Date: 22-Jun-2011

C9317EC

CHEMWATCH 27-3988

Version No:2.0

CD 2011/2 Page 2 of 8

Section 3 - COMPOSITION / INFORMATION ON INGREDIENTS

NAME	CAS RN	%
benzyl alcohol	100-51-6	30-60
formaldehyde/ benzenamine, hydrogenated organic acid	135108-88-2	30-60
4, 4' - methylenebis(cyclohexylamine)	1761-71-3	3-7 1-5

Section 4 - FIRST AID MEASURES

SWALLOWED

- - 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.

EYE

- If this product comes in contact with the eyes:
- 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.

SKIN

- If skin or hair contact occurs:
- 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.

INHALED

- - If fumes or combustion products are inhaled remove from contaminated area.
- Lay patient down. Keep warm and rested.
- Protheses 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.
- 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.

NOTES TO PHYSICIAN

- 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.
- Clinical experience of benzyl alcohol poisoning is generally confined to premature neonates in receipt of preserved intravenous salines.
- Metabolic acidosis, bradycardia, skin breakdown, hypotonia, hepatorenal failure, hypotension and cardiovascular collapse are characteristic.
 - High urine benzoate and hippuric acid as well as elevated serum benzoic acid levels are found.
 - The so-called "gaspings syndrome" describes the progressive neurological deterioration of poisoned neonates.
 - Management is essentially supportive.
-

Section 5 - FIRE FIGHTING MEASURES

EXTINGUISHING MEDIA

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

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DANLAID DE400H HARDENER

Chemwatch Independent Material Safety Data Sheet
Issue Date: 22-Jun-2011
C9317EC

CHEMWATCH 27-3988
Version No:2.0
CD 2011/2 Page 3 of 8
Section 5 - FIRE FIGHTING MEASURES

- Carbon dioxide.

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 fire fighting procedures suitable for surrounding area.

When any large container (including road and rail tankers) is involved in a fire, consider evacuation by 800 metres in all directions.

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).

Combustion products include: carbon dioxide (CO₂), aldehydes, nitrogen oxides (NO_x), other pyrolysis products typical of burning organic material.

May emit corrosive fumes.

WARNING: Long standing in contact with air and light may result in the formation of potentially explosive peroxides.

FIRE INCOMPATIBILITY

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

HAZCHEM

2X

Personal Protective Equipment

Breathing apparatus.

Gas tight chemical resistant suit.

Limit exposure duration to 1 BA set 30 mins.

Section 6 - ACCIDENTAL RELEASE MEASURES

MINOR SPILLS

- Slippery when spilt.
- 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.
- 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.

MAJOR SPILLS

- Slippery when spilt.
- 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 MSDS.

Section 7 - HANDLING AND STORAGE

PROCEDURE FOR HANDLING

- - DO NOT allow clothing wet with material to stay in contact with skin.
- The substance accumulates peroxides which may become hazardous only if it evaporates or is distilled or otherwise treated to concentrate the peroxides. The substance may concentrate around the container opening for example. Purchases of peroxidisable chemicals should be restricted to ensure that the chemical is used completely before it can become peroxidised.
- A responsible person should maintain an inventory of peroxidisable chemicals or annotate the general chemical inventory to indicate which chemicals are subject to peroxidation. An expiration date should be determined. The chemical should either be treated to remove peroxides or disposed of before this date.

continued...

DANLAID DE400H HARDENER

Chemwatch Independent Material Safety Data Sheet
Issue Date: 22-Jun-2011
C9317EC

CHEMWATCH 27-3988
Version No:2.0
CD 2011/2 Page 4 of 8
Section 7 - HANDLING AND STORAGE

- Avoid all personal contact, including inhalation.
- Wear protective clothing when risk of exposure occurs.
- Use in a well-ventilated area.
- Avoid contact with moisture.

SUITABLE CONTAINER

- - Lined metal can, lined metal pail/ can.
- Plastic pail.
- Polyliner drum.
- Packing as recommended by manufacturer.

For low viscosity materials

- Drums and jerricans must be of the non-removable head type.
- Where a can is to be used as an inner package, the can must have a screwed enclosure. <</>.

STORAGE INCOMPATIBILITY

- Benzyl alcohol:
 - may froth in contact with water
 - slowly oxidises in air, oxygen forming benzaldehyde
 - is incompatible with mineral acids, caustics, aliphatic amines, isocyanates
 - reacts violently with strong oxidisers, and explosively with sulfuric acid at elevated temperatures.
 - Avoid strong acids, acid chlorides, acid anhydrides and chloroformates.
 - Avoid contact with copper, aluminium and their alloys.
 - Avoid reaction with oxidising agents.

STORAGE REQUIREMENTS

- - 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.

Section 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION

EXPOSURE CONTROLS

The following materials had no OELs on our records

- | | |
|--|-------------------|
| • benzyl alcohol: | CAS:100- 51- 6 |
| • formaldehyde/ benzenamine, hydrogenated: | CAS:135108- 88- 2 |
| • 4, 4' - methylenebis(cyclohexylamine): | CAS:1761- 71- 3 |

PERSONAL PROTECTION

RESPIRATOR

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

EYE

- - 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 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].

HANDS/FEET

- - Wear chemical protective gloves, eg. PVC.
- Wear safety footwear or safety gumboots, eg. Rubber.
- When handling corrosive liquids, wear trousers or overalls outside of boots, to avoid spills entering boots.

NOTE:

- The material may produce skin sensitisation in predisposed individuals. Care must be taken, when removing gloves and other protective equipment, to avoid all possible skin contact.
- Contaminated leather items, such as shoes, belts and watch-bands should be removed and destroyed.
- Suitability and durability of glove type is dependent on usage. Important factors in the selection of gloves include: such as:
 - frequency and duration of contact,
 - chemical resistance of glove material,

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DANLAID DE400H HARDENER

Chemwatch Independent Material Safety Data Sheet
Issue Date: 22-Jun-2011
C9317EC

CHEMWATCH 27-3988
Version No:2.0
CD 2011/2 Page 5 of 8

Section 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION

- glove thickness and
- dexterity.
- Leather wear not recommended: Contaminated leather footwear, watch bands, should be destroyed, i.e. burnt, as they cannot be adequately decontaminated.

OTHER

- - Overalls.
- PVC Apron.
- PVC protective suit may be required if exposure severe.
- Eyewash unit.

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.

Section 9 - PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE

Amber coloured mobile liquid with an ammoniacal odour; does not mix with water.

PHYSICAL PROPERTIES

Liquid.

Does not mix with water.

Sinks in water.

Corrosive.

State	Liquid	Molecular Weight	Not Applicable
Melting Range (°C)	Not Available	Viscosity	Not Available
Boiling Range (°C)	222	Solubility in water (g/L)	Immiscible
Flash Point (°C)	Not Available	pH (1% solution)	Not Available
Decomposition Temp (°C)	Not Available	pH (as supplied)	Not Available
Autoignition Temp (°C)	Not Available	Vapour Pressure (kPa)	<0.09 @ 21C
Upper Explosive Limit (%)	Not Available	Specific Gravity (water=1)	1.06
Lower Explosive Limit (%)	Not Available	Relative Vapour Density (air=1)	Not Available
Volatile Component (%vol)	Not Available	Evaporation Rate	Not Available

Section 10 - STABILITY AND REACTIVITY

CONDITIONS CONTRIBUTING TO INSTABILITY

- - Presence of incompatible materials.
- Product is considered stable.
- Hazardous polymerisation will not occur.

For incompatible materials - refer to Section 7 - Handling and Storage.

Section 11 - TOXICOLOGICAL INFORMATION

POTENTIAL HEALTH EFFECTS

ACUTE HEALTH EFFECTS

- Causes burns.
- Risk of serious damage to eyes.
- Harmful by inhalation, in contact with skin and if swallowed.
- Vapours may cause dizziness or suffocation.
- Vapours may cause drowsiness and dizziness.

CHRONIC HEALTH EFFECTS

- May cause SENSITISATION by skin contact.

continued...

DANLAID DE400H HARDENER

Chemwatch Independent Material Safety Data Sheet

Issue Date: 22-Jun-2011

C9317EC

CHEMWATCH 27-3988

Version No:2.0

CD 2011/2 Page 6 of 8

Section 11 - TOXICOLOGICAL INFORMATION

TOXICITY AND IRRITATION

■ unless otherwise specified data extracted from RTECS - Register of Toxic Effects of Chemical Substances.

4,4'-METHYLENEBIS(CYCLOHEXYLAMINE):

DANLAID DE400H HARDENER:

■ 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.

FORMALDEHYDE/ BENZENAMINE, HYDROGENATED:

4,4'-METHYLENEBIS(CYCLOHEXYLAMINE):

DANLAID DE400H HARDENER:

■ 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.

BENZYL ALCOHOL:

4,4'-METHYLENEBIS(CYCLOHEXYLAMINE):

DANLAID DE400H HARDENER:

■ The material may cause skin irritation after prolonged or repeated exposure and may produce a contact dermatitis (nonallergic). This form of dermatitis is often characterised by skin redness (erythema) and swelling the epidermis.

FORMALDEHYDE/ BENZENAMINE, HYDROGENATED:

DANLAID DE400H HARDENER:

■ No significant acute toxicological data identified in literature search.

BENZYL ALCOHOL:

DANLAID DE400H HARDENER:

■ For benzoates:

Acute toxicity: Benzyl alcohol, benzoic acid and its sodium and potassium salt can be considered as a single category regarding human health, as they are all rapidly metabolised and excreted via a common pathway within 24 hrs. Systemic toxic effects of similar nature (e.g.

■ For benzyl alkyl alcohols:

Unlike benzylic alcohols, the beta-hydroxyl group of the members of this cluster is unlikely to undergo phase II metabolic activation. Instead, the beta-hydroxyl group is expected to contribute to detoxification via oxidation to hydrophilic acid.

BENZYL ALCOHOL:

TOXICITY

Oral (rat) LD50: 1230 mg/kg

Inhalation (rat) LCLo: 2000 ppm/4h

Inhalation (rat) LC50: 1000 ppm/8h

Inhalation (rat) LC50: >4178 mg/m³/4h

Dermal (rabbit) LD50: 2000 mg/kg

IRRITATION

Skin (man): 16 mg/48h- Mild

Skin (rabbit): 10 mg/24h open- Mild

Eye (rabbit): 0.75 mg Open SEVERE

FORMALDEHYDE/ BENZENAMINE, HYDROGENATED:

■ Amine adducts have much reduced volatility and are less irritating to the skin and eyes than amine hardeners. However commercial amine adducts may contain a percentage of unreacted amine and all unnecessary contact should be avoided. Amine adducts are prepared by reacting excess primary amines with epoxy resin.

4,4'-METHYLENEBIS(CYCLOHEXYLAMINE):

TOXICITY

Oral (rat) LD50: 670 mg/kg

Oral (rat) LD50: 380 mg/kg *

IRRITATION

Eye (rabbit): 10uL./24h SEVERE

Skin (rabbit): SEVERE Corrosive

**

Inhalation (mouse) LD50: 400 mg/m³/4h * [Air Products and Chemicals]

Dermal (rabbit) LD50: 2110 mg/kg * ** [BASF CCINFO 1882394]

■ The material may produce moderate eye irritation leading to inflammation. Repeated or prolonged exposure to irritants may produce conjunctivitis.

The material may produce respiratory tract irritation. Symptoms of pulmonary irritation may include coughing, wheezing, laryngitis, shortness of breath, headache, nausea, and a burning sensation.

Unlike most organs, the lung can respond to a chemical insult or a chemical agent, by first removing or neutralising the irritant and then repairing the damage (inflammation of the lungs may be a consequence).

The repair process (which initially developed to protect mammalian lungs from foreign matter and antigens) may, however, cause further damage to the lungs (fibrosis for example) when activated by hazardous chemicals.

continued...

DANLAID DE400H HARDENER

Chemwatch Independent Material Safety Data Sheet

Issue Date: 22-Jun-2011

C9317EC

CHEMWATCH 27-3988

Version No:2.0

CD 2011/2 Page 7 of 8

Section 12 - ECOLOGICAL INFORMATION

Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
This material and its container must be disposed of as hazardous waste.

Ecotoxicity

Ingredient	Persistence: Water/Soil	Persistence: Air	Bioaccumulation	Mobility
Danlaid DE400H Hardener	No Data Available	No Data Available		
benzyl alcohol	LOW	No Data Available	LOW	HIGH
formaldehyde/ benzenamine, hydrogenated 4, 4' - methylenebis(cyclohexylamine)	No Data Available HIGH	No Data Available No Data Available	LOW	MED

Section 13 - DISPOSAL CONSIDERATIONS

■ - Containers may still present a chemical hazard/ danger when empty.

- 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 MSDS and observe all notices pertaining to the product.

Legislation addressing waste disposal requirements may differ by country, state and/ or territory. Each user must refer to laws operating in their area.

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

- Reduction.

- 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.

- 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 licenced to accept chemical and / or pharmaceutical wastes or Incineration in a licenced apparatus (after admixture with suitable combustible material).

Section 14 - TRANSPORTATION INFORMATION

Labels Required: CORROSIVE

HAZCHEM:

2X (ADG7)

ADG7:

Class or Division:	8	Subsidiary Risk:	None
UN No.:	2735	Packing Group:	III
Special Provision:	223, 274	Limited Quantity:	5 L
Portable Tanks & Bulk Containers - Instruction:	T7	Portable Tanks & Bulk Containers - Special Provision:	TP1, TP28
Packagings & IBCs - Packing Instruction:	None	Packagings & IBCs - Special Packing Provision:	P001, IBC03, LP01

Name and Description: AMINES, LIQUID, CORROSIVE, N.O.S. or POLYAMINES, LIQUID, CORROSIVE, N.O.S. (contains formaldehyde/ benzenamine, hydrogenated)

Land Transport UNDG:

Class or division:	8	Subsidiary risk:	None
UN No.:	2735	UN packing group:	III
Shipping Name: AMINES, LIQUID, CORROSIVE, N.O.S. or POLYAMINES, LIQUID, CORROSIVE, N.O.S. (contains formaldehyde/ benzenamine,			

continued...

DANLAID DE400H HARDENER

Chemwatch Independent Material Safety Data Sheet
Issue Date: 22-Jun-2011
C9317EC

CHEMWATCH 27-3988
Version No:2.0
CD 2011/2 Page 8 of 8

Section 14 - TRANSPORTATION INFORMATION

hydrogenated)

Air Transport IATA:

UN/ID Number: 2735 Packing Group: III
Special provisions: A3

Shipping Name: AMINES, LIQUID, CORROSIVE, N.O.S. *(CONTAINS FORMALDEHYDE/ BENZENAMINE, HYDROGENATED)

Maritime Transport IMDG:

IMDG Class: 8 IMDG Subrisk: None
UN Number: 2735 Packing Group: III
EMS Number: F- A, S- B Special provisions: 223 274

Limited Quantities: 5 L
Shipping Name: AMINES, LIQUID, CORROSIVE, N.O.S. or POLYAMINES, LIQUID, CORROSIVE, N.O.S.(contains formaldehyde/ benzenamine, hydrogenated)

Section 15 - REGULATORY INFORMATION

POISONS SCHEDULE None

REGULATIONS

Regulations for ingredients

benzyl alcohol (CAS: 100-51-6) is found on the following regulatory lists;

"Australia Hazardous Substances", "Australia Inventory of Chemical Substances (AICS)", "GESAMP/EHS Composite List - GESAMP Hazard Profiles", "IMO IBC Code Chapter 17: Summary of minimum requirements", "IMO MARPOL 73/78 (Annex II) - List of Noxious Liquid Substances Carried in Bulk", "International Council of Chemical Associations (ICCA) - High Production Volume List", "International Fragrance Association (IFRA) Standards Restricted", "International Fragrance Association (IFRA) Survey: Transparency List"

formaldehyde/ benzenamine, hydrogenated (CAS: 135108-88-2) is found on the following regulatory lists;

"Australia Inventory of Chemical Substances (AICS)"

4,4'-methylenebis(cyclohexylamine) (CAS: 1761-71-3) is found on the following regulatory lists;

"Australia Inventory of Chemical Substances (AICS)", "International Council of Chemical Associations (ICCA) - High Production Volume List"

No data for Danlaid DE400H Hardener (CW: 27-3988)

Section 16 - OTHER INFORMATION

Denmark Advisory list for selfclassification of dangerous substances

Substance	CAS	Suggested codes
4, 4' - methylenebis(cyclohexylamine)	1761- 71- 3	Xn; R22 R43 Xi; R38

■ 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.

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Issue Date: 22-Jun-2011
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This is the end of the MSDS.