ACC-9

Drew Marine

Chemwatch: **23-9017**
Version No: **2.1.1.1**
Safety Data Sheet according to OSHA HazCom Standard (2012) requirements

Chemwatch Hazard Alert Code: **3**

Issue Date: **01/01/2013**
Print Date: **11/10/2014**
Initial Date: **Not Available**
S.GHS.USA.EN

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

Product Identifier

Product name	ACC-9
Chemical Name	Not Applicable
Proper shipping name	Environmentally hazardous substance, liquid, n.o.s. (contains dichlorotoluene)
Chemical formula	Not Applicable
Other means of identification	Not Available
CAS number	Not Applicable

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

Relevant identified uses	Use according to manufacturer's directions.

Details of the manufacturer/importer

Registered company name	Drew Marine
Address	100 South Jefferson Road Whippany 07981 NJ United States
Telephone	973 526-5700.
Fax	Not Available
Website	Not Available
Email	Not Available

Emergency telephone number

Association / Organisation	Not Available
Emergency telephone numbers	The numbers below are for EMERGENCY USE ONLY. Use the corporate number above for all other calls.
Other emergency telephone numbers	CHEMWATCH: From within the US and CANADA: 1 877-715-9305 OR call + 613 9573 3112. From outside the US and Canada: + 800 2436 2255 (+800 CHEMCALL) or +613 9573 3112

CHEMWATCH EMERGENCY RESPONSE

Primary Number	Alternative Number 1	Alternative Number 2
877 715 9305	+612 9186 1132	Not Available

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

Una vez conectado y si el mensaje no está en su idioma preferido, por favor marque 02

SECTION 2 HAZARDS IDENTIFICATION

Classification of the substance or mixture

GHS Classification	Flammable Liquid Category 4, Acute Toxicity (Oral) Category 4, Skin Corrosion/Irritation Category 2, Serious Eye Damage Category 1, Carcinogen Category 2, STOT - SE (Resp. Irr.) Category 3, STOT - SE (Narcosis) Category 3, Aspiration Hazard Category 1, Acute Aquatic Hazard Category 2, Chronic Aquatic Hazard Category 2

Label elements

GHS label elements	
SIGNAL WORD	**DANGER**

Hazard statement(s)

H227	Combustible liquid
H302	Harmful if swallowed

Continued...

H315	Causes skin irritation
H318	Causes serious eye damage
H351	Suspected of causing cancer
H335	May cause respiratory irritation
H336	May cause drowsiness or dizziness
H304	May be fatal if swallowed and enters airways
H401	Toxic to aquatic life
H411	Toxic to aquatic life with long lasting effects

Supplementary statement(s)

Not Applicable

Precautionary statement(s): Prevention

P201	Obtain special instructions before use.
P210	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P271	Use only outdoors or in a well-ventilated area.
P280	Wear protective gloves/protective clothing/eye protection/face protection.
P261	Avoid breathing dust/fume/gas/mist/vapours/spray.
P270	Do not eat, drink or smoke when using this product.
P273	Avoid release to the environment.

Precautionary statement(s): Response

P301+P310	IF SWALLOWED: Immediately call a POISON CENTER/doctor/physician/first aider
P305+P351+P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P308+P313	IF exposed or concerned: Get medical advice/attention.
P331	Do NOT induce vomiting.
P370+P378_1	In case of fire: Use alcohol resistant foam or normal protein foam for extinction.
P391	Collect spillage.
P301+P312	IF SWALLOWED: Call a POISON CENTER/doctor/physician/first aider/if you feel unwell.
P302+P352	IF ON SKIN: Wash with plenty of water and soap
P304+P340	IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P330	Rinse mouth.
P332+P313	If skin irritation occurs: Get medical advice/attention.
P362+P364	Take off contaminated clothing and wash it before reuse.

Precautionary statement(s): Storage

P403+P235	Store in a well-ventilated place. Keep cool.
P405	Store locked up.
P403+P233	Store in a well-ventilated place. Keep container tightly closed.

Precautionary statement(s): Disposal

P501	Dispose of contents/container to authorised chemical landfill or if organic to high temperature incineration

SECTION 3 COMPOSITION / INFORMATION ON INGREDIENTS

Substances

See section below for composition of Mixtures

Mixtures

CAS No	%[weight]	Name
29797-40-8	50-<60	dichlorotoluene
68476-34-6	30-<40	middle distillate
95-49-8	10-<15	o-chlorotoluene
8051-30-7	5-<10	diethanolamine cocoate
106-43-4	1.5-<5	p-chlorotoluene
91-20-3	0.1-<0.5	naphthalene
		Note: Manufacturer has supplied full ingredient
		information to allow CHEMWATCH assessment.

Note: Manufacturer has supplied full ingredient information to allow CHEMWATCH assessment.

SECTION 4 FIRST AID MEASURES

Description of first aid measures

Eye Contact	

Continued...

	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. ▸ Removal of contact lenses after an eye injury should only be undertaken by skilled personnel.
Skin Contact	If skin contact occurs: ▸ Immediately remove all contaminated clothing, including footwear. ▸ Flush skin and hair with running water (and soap if available). ▸ Seek medical attention in event of irritation.
Inhalation	▸ If fumes or combustion products are inhaled remove from contaminated area. ▸ Lay patient down. Keep warm and rested. ▸ Prostheses such as false teeth, which may block airway, should be removed, where possible, prior to initiating first aid procedures. ▸ Apply artificial respiration if not breathing, preferably with a demand valve resuscitator, bag-valve mask device, or pocket mask as trained. Perform CPR if necessary. ▸ Transport to hospital, or doctor, without delay.
Ingestion	▸ If swallowed do **NOT** induce vomiting. ▸ If vomiting occurs, lean patient forward or place on left side (head-down position, if possible) to maintain open airway and prevent aspiration. ▸ Observe the patient carefully. ▸ Never give liquid to a person showing signs of being sleepy or with reduced awareness; i.e. becoming unconscious. ▸ Give water to rinse out mouth, then provide liquid slowly and as much as casualty can comfortably drink. ▸ Seek medical advice. ▸ Avoid giving milk or oils. ▸ Avoid giving alcohol. ▸ If spontaneous vomiting appears imminent or occurs, hold patient's head down, lower than their hips to help avoid possible aspiration of vomitus.

Indication of any immediate medical attention and special treatment needed

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

- Primary threat to life, from pure petroleum distillate ingestion and/or inhalation, is respiratory failure.
- Patients should be quickly evaluated for signs of respiratory distress (e.g. cyanosis, tachypnoea, intercostal retraction, obtundation) and given oxygen. Patients with inadequate tidal volumes or poor arterial blood gases (pO2 50 mm Hg) should be intubated.
- Arrhythmias complicate some hydrocarbon ingestion and/or inhalation and electrocardiographic evidence of myocardial injury has been reported; intravenous lines and cardiac monitors should be established in obviously symptomatic patients. The lungs excrete inhaled solvents, so that hyperventilation improves clearance.
- A chest x-ray should be taken immediately after stabilisation of breathing and circulation to document aspiration and detect the presence of pneumothorax.
- Epinephrine (adrenalin) is not recommended for treatment of bronchospasm because of potential myocardial sensitisation to catecholamines. Inhaled cardioselective bronchodilators (e.g. Alupent, Salbutamol) are the preferred agents, with aminophylline a second choice.
- Lavage is indicated in patients who require decontamination; ensure use of cuffed endotracheal tube in adult patients. [Ellenhorn and Barceloux: Medical Toxicology]

Treat symptomatically.

for naphthalene intoxication: Naphthalene requires hepatic and microsomal activation prior to the production of toxic effects. Liver microsomes catalyse the initial synthesis of the reactive 1,2-epoxide intermediate which is subsequently oxidised to naphthalene dihydrodiol and alpha-naphthol. The 2-naphthoquinones are thought to produce haemolysis, the 1,2-naphthoquinones are thought to be responsible for producing cataracts in rabbits, and the glutathione-adducts of naphthalene-1,2-oxide are probably responsible for pulmonary toxicity. Suggested treatment regime:

- Induce emesis and/or perform gastric lavage with large amounts of warm water where oral poisoning is suspected.
- Instill a saline cathartic such as magnesium or sodium sulfate in water (15 to 30g).
- Demulcents such as milk, egg white, gelatin, or other protein solutions may be useful after the stomach is emptied but oils should be avoided because they promote absorption.
- If eyes/skin contaminated, flush with warm water followed by the application of a bland ointment.
- Severe anaemia, due to haemolysis, may require small repeated blood transfusions, preferably with red cells from a non-sensitive individual.
- Where intravascular haemolysis, with haemoglobinuria occurs, protect the kidneys by promoting a brisk flow of dilute urine with, for example, an osmotic diuretic such as mannitol. It may be useful to alkalinise the urine with small amounts of sodium bicarbonate but many researchers doubt whether this prevents blockage of the renal tubules.
- Use supportive measures in the case of acute renal failure. GOSSELIN, SMITH HODGE: Clinical Toxicology of Commercial Products, 5th Ed.

SECTION 5 FIREFIGHTING MEASURES

Extinguishing media

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

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	▸ Alert Fire Brigade and tell them location and nature of hazard. ▸ Wear full body protective clothing with breathing apparatus. ▸ Prevent, by any means available, spillage from entering drains or water course. ▸ Use water delivered as a fine spray to control fire and cool adjacent area. ▸ Avoid spraying water onto liquid pools. ▸ **DO NOT** approach containers suspected to be hot. ▸ Cool fire exposed containers with water spray from a protected location. ▸ If safe to do so, remove containers from path of fire.
Fire/Explosion Hazard	▸ Combustible. ▸ Slight fire hazard when exposed to heat or flame. ▸ Heating may cause expansion or decomposition leading to violent rupture of containers. ▸ On combustion, may emit toxic fumes of carbon monoxide (CO). ▸ May emit acrid smoke. ▸ Mists containing combustible materials may be explosive. Combustion products include:, carbon dioxide (CO_2), hydrogen chloride, phosgene, other pyrolysis products typical of burning organic material

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SECTION 6 ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

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

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

SECTION 7 HANDLING AND STORAGE

Precautions for safe handling

Safe handling	▸ Containers, even those that have been emptied, may contain explosive vapours. ▸ Do NOT cut, drill, grind, weld or perform similar operations on or near containers. ▸ **DO NOT** allow clothing wet with material to stay in contact with skin ▸ Electrostatic discharge may be generated during pumping - this may result in fire. ▸ Ensure electrical continuity by bonding and grounding (earthing) all equipment. ▸ Restrict line velocity during pumping in order to avoid generation of electrostatic discharge (<=1 m/sec until fill pipe submerged to twice its diameter, then <= 7 m/sec). ▸ Avoid splash filling. ▸ Do NOT use compressed air for filling discharging or handling operations. ▸ Avoid all personal contact, including inhalation. ▸ Wear protective clothing when risk of exposure occurs. ▸ Use in a well-ventilated area. ▸ Prevent concentration in hollows and sumps. ▸ **DO NOT** enter confined spaces until atmosphere has been checked. ▸ Avoid smoking, naked lights or ignition sources. ▸ Avoid contact with incompatible materials. ▸ When handling, **DO NOT** eat, drink or smoke. ▸ Keep containers securely sealed when not in use. ▸ Avoid physical damage to containers. ▸ Always wash hands with soap and water after handling. ▸ Work clothes should be laundered separately. ▸ Use good occupational work practice. ▸ Observe manufacturer's storage and handling recommendations contained within this MSDS. ▸ Atmosphere should be regularly checked against established exposure standards to ensure safe working conditions.
Other information	▸ Store in original containers. ▸ Keep containers securely sealed. ▸ Store in a cool, dry, well-ventilated area. ▸ Store away from incompatible materials and foodstuff containers. ▸ Protect containers against physical damage and check regularly for leaks. ▸ Observe manufacturer's storage and handling recommendations contained within this MSDS.

Conditions for safe storage, including any incompatibilities

Suitable container	▸ Metal can or drum ▸ Packaging as recommended by manufacturer. ▸ Check all containers are clearly labelled and free from leaks.
Storage incompatibility	Chlorotoluene: ▸ reacts with water forming hydrochloric acid ▸ reacts violently with strong oxidisers ▸ can produce toxic chlorine fumes at elevated temperatures or on contact with acids or acid fumes ▸ is incompatible with alkalis, strong acids ▸ may cause pitting and stress corrosion of austenitic stainless steels and other metals in the presence of moisture ▸ attacks some plastics, rubber and coatings ▸ may generate electrostic charges due to low conductivity. For alkyl aromatics: The alkyl side chain of aromatic rings can undergo oxidation by several mechanisms. The most common and dominant one is the attack by oxidation at benzylic carbon as the intermediate formed is stabilised by resonance structure of the ring. ▸ Following reaction with oxygen and under the influence of sunlight, a hydroperoxide at the alpha-position to the aromatic ring, is the primary oxidation product formed (provided a hydrogen atom is initially available at this position) - this product is often short-lived but may be stable dependent on the nature of the aromatic substitution; a secondary C-H bond is more easily attacked than a primary C-H bond whilst a tertiary C-H bond is even more susceptible to attack by oxygen ▸ Monoalkylbenzenes may subsequently form monocarboxylic acids; alkyl naphthalenes mainly produce the corresponding naphthalene carboxylic acids.

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- Oxidation in the presence of transition metal salts not only accelerates but also selectively decomposes the hydroperoxides.
- Hock-rearrangement by the influence of strong acids converts the hydroperoxides to hemiacetals. Peresters formed from the hydroperoxides undergo Criegee rearrangement easily.
- Alkali metals accelerate the oxidation while CO2 as co-oxidant enhances the selectivity.
- Microwave conditions give improved yields of the oxidation products.
- Photo-oxidation products may occur following reaction with hydroxyl radicals and NOx - these may be components of photochemical smogs.

Oxidation of Alkylaromatics: T.S.S Rao and Shubhra Awasthi: E-Journal of Chemistry Vol 4, No. 1, pp 1-13 January 2007

- Vigorous reactions, sometimes amounting to explosions, can result from the contact between aromatic rings and strong oxidising agents.
- Aromatics can react exothermically with bases and with diazo compounds.

CARE: Water in contact with heated material may cause foaming or a steam explosion with possible severe burns from wide scattering of hot material. Resultant overflow of containers may result in fire.

PACKAGE MATERIAL INCOMPATIBILITIES

Not Available

SECTION 8 EXPOSURE CONTROLS / PERSONAL PROTECTION

Control parameters

OCCUPATIONAL EXPOSURE LIMITS (OEL)

INGREDIENT DATA

Source	Ingredient	Material name	TWA	STEL	Peak	Notes
US ACGIH Threshold Limit Values (TLV)	middle distillate	Diesel fuel, as total hydrocarbons	100 mg/m3	Not Available	Not Available	TLV® Basis: Dermatitis
US ACGIH Threshold Limit Values (TLV)	o-chlorotoluene	o-Chlorotoluene	50 ppm	Not Available	Not Available	TLV® Basis: URT, eye, & skin irr
US NIOSH Recommended Exposure Limits (RELs)	o-chlorotoluene	1-Chloro-2-methylbenzene, 2-Chloro-1-methylbenzene, 2-Chlorotoluene, o-Tolyl chloride	250 mg/m3 / 50 ppm	375 mg/m3 / 75 ppm	Not Available	Not Available
US OSHA Permissible Exposure Levels (PELs) - Table Z1	naphthalene	Naphthalene	50 mg/m3 / 10 ppm	Not Available	Not Available	Not Available
US ACGIH Threshold Limit Values (TLV)	naphthalene	* Naphthalene	10 ppm	Not Available	Not Available	TLV® Basis: URT irr; cataracts; hemolytic anemia
US NIOSH Recommended Exposure Limits (RELs)	naphthalene	Naphthalin, Tar camphor, White tar	50 mg/m3 / 10 ppm	75 mg/m3 / 15 ppm	Not Available	Not Available

EMERGENCY LIMITS

Ingredient	TEEL-0	TEEL-1	TEEL-2	TEEL-3
ACC-9	Not Available	Not Available	Not Available	Not Available

Ingredient	Original IDLH	Revised IDLH
dichlorotoluene	Not Available	Not Available
middle distillate	Not Available	Not Available
o-chlorotoluene	Not Available	Not Available
diethanolamine cocoate	Not Available	Not Available
p-chlorotoluene	Not Available	Not Available
naphthalene	500 ppm	250 ppm

Exposure controls

Appropriate engineering controls

Engineering controls are used to remove a hazard or place a barrier between the worker and the hazard. Well-designed engineering controls can be highly effective in protecting workers and will typically be independent of worker interactions to provide this high level of protection.
The basic types of engineering controls are:
Process controls which involve changing the way a job activity or process is done to reduce the risk.
Enclosure and/or isolation of emission source which keeps a selected hazard "physically" away from the worker and ventilation that strategically "adds" and "removes" air in the work environment. Ventilation can remove or dilute an air contaminant if designed properly. The design of a ventilation system must match the particular process and chemical or contaminant in use.
Employers may need to use multiple types of controls to prevent employee overexposure.

Local exhaust ventilation usually required. If risk of overexposure exists, wear approved respirator. Correct fit is essential to obtain adequate protection.
Supplied-air type respirator may be required in special circumstances. Correct fit is essential to ensure adequate protection.
An approved self contained breathing apparatus (SCBA) may be required in some situations.
Provide adequate ventilation in warehouse or closed storage area. Air contaminants generated in the workplace possess varying "escape" velocities which, in turn, determine the "capture velocities" of fresh circulating air required to effectively remove the contaminant.

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

Within each range the appropriate value depends on:

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	<table><tr><td>Lower end of the range</td><td>Upper end of the range</td></tr><tr><td>1: Room air currents minimal or favourable to capture</td><td>1: Disturbing room air currents</td></tr><tr><td>2: Contaminants of low toxicity or of nuisance value only.</td><td>2: Contaminants of high toxicity</td></tr><tr><td>3: Intermittent, low production.</td><td>3: High production, heavy use</td></tr><tr><td>4: Large hood or large air mass in motion</td><td>4: Small hood-local control only</td></tr></table> Simple theory shows that air velocity falls rapidly with distance away from the opening of a simple extraction pipe. Velocity generally decreases with the square of distance from the extraction point (in simple cases). Therefore the air speed at the extraction point should be adjusted, accordingly, after reference to distance from the contaminating source. The air velocity at the extraction fan, for example, should be a minimum of 1-2 m/s (200-400 f/min) for extraction of solvents generated in a tank 2 meters distant from the extraction point. Other mechanical considerations, producing performance deficits within the extraction apparatus, make it essential that theoretical air velocities are multiplied by factors of 10 or more when extraction systems are installed or used.
Personal protection	
Eye and face protection	▸ Safety glasses with side shields. ▸ Chemical goggles. ▸ Contact lenses may pose a special hazard; soft contact lenses may absorb and concentrate irritants. A written policy document, describing the wearing of lenses or restrictions on use, should be created for each workplace or task. This should include a review of lens absorption and adsorption for the class of chemicals in use and an account of injury experience. Medical and first-aid personnel should be trained in their removal and suitable equipment should be readily available. In the event of chemical exposure, begin eye irrigation immediately and remove contact lens as soon as practicable. Lens should be removed at the first signs of eye redness or irritation - lens should be removed in a clean environment only after workers have washed hands thoroughly. [CDC NIOSH Current Intelligence Bulletin 59], [AS/NZS 1336 or national equivalent]
Skin protection	See Hand protection below
Hands/feet protection	▸ Wear chemical protective gloves, e.g. PVC. ▸ Wear safety footwear or safety gumboots, e.g. Rubber 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. 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. Suitability and durability of glove type is dependent on usage. Important factors in the selection of gloves include: ▸ frequency and duration of contact, ▸ chemical resistance of glove material, ▸ glove thickness and ▸ dexterity Select gloves tested to a relevant standard (e.g. Europe EN 374, US F739, AS/NZS 2161.1 or national equivalent). ▸ When prolonged or frequently repeated contact may occur, a glove with a protection class of 5 or higher (breakthrough time greater than 240 minutes according to EN 374, AS/NZS 2161.10.1 or national equivalent) is recommended. ▸ When only brief contact is expected, a glove with a protection class of 3 or higher (breakthrough time greater than 60 minutes according to EN 374, AS/NZS 2161.10.1 or national equivalent) is recommended. ▸ Some glove polymer types are less affected by movement and this should be taken into account when considering gloves for long-term use. ▸ Contaminated gloves should be replaced. Gloves must only be worn on clean hands. After using gloves, hands should be washed and dried thoroughly. Application of a non-perfumed moisturiser is recommended. ▸ Neoprene gloves
Body protection	See Other protection below
Other protection	▸ Overalls. ▸ P.V.C. apron. ▸ Barrier cream. ▸ Skin cleansing cream. ▸ Eye wash unit.
Thermal hazards	Not Available

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
VITON	A
NITRILE	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)

Where the concentration of gas/particulates in the breathing zone, approaches or exceeds the "Exposure Standard" (or ES), respiratory protection is required.
Degree of protection varies with both face-piece and Class of filter; the nature of protection varies with Type of filter.

Required Minimum Protection Factor	Half-Face Respirator	Full-Face Respirator	Powered Air Respirator
up to 10 x ES	AK-AUS P2	-	AK-PAPR-AUS / Class 1 P2
up to 50 x ES	-	AK-AUS / Class 1 P2	-
up to 100 x ES	-	AK-2 P2	AK-PAPR-2 P2 ^

^ - Full-face
A(All classes) = Organic vapours, B AUS or B1 = Acid gasses, B2 = Acid gas or hydrogen cyanide(HCN), B3 = Acid gas or hydrogen cyanide(HCN), E = Sulfur dioxide(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)

SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

Continued...

Information on basic physical and chemical properties

Appearance	Violet colour liquid.

Physical state	Liquid	**Relative density (Water = 1)**	1.030 @25C
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)	-49	**Viscosity (cSt)**	Not Available
Initial boiling point and boiling range (°C)	185	**Molecular weight (g/mol)**	Not Applicable
Flash point (°C)	68.88	**Taste**	Not Available
Evaporation rate	>1 Ether = 1	**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)	0 @50C	**Gas group**	Not Available
Solubility in water (g/L)	Not Available	**pH as a solution(1%)**	Not Available
Vapour density (Air = 1)	>1	**VOC g/L**	Not Available

SECTION 10 STABILITY AND REACTIVITY

Reactivity	See section 7
Chemical stability	▸ Presence of heat source and ignition source ▸ 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	Evidence shows, or practical experience predicts, that the material produces irritation of the respiratory system, in a substantial number of individuals, following inhalation. In contrast to most organs, the lung is able to respond to a chemical insult by first removing or neutralising the irritant and then repairing the damage. The repair process, which initially evolved to protect mammalian lungs from foreign matter and antigens, may however, produce further lung damage resulting in the impairment of gas exchange, the primary function of the lungs. Respiratory tract irritation often results in an inflammatory response involving the recruitment and activation of many cell types, mainly derived from the vascular system. Inhalation of vapours may cause drowsiness and dizziness. This may be accompanied by narcosis, reduced alertness, loss of reflexes, lack of coordination and vertigo. Inhalation of aerosols (mists, fumes), generated by the material during the course of normal handling, may be damaging to the health of the individual.
Ingestion	Accidental ingestion of the material may be harmful; animal experiments indicate that ingestion of less than 150 gram may be fatal or may produce serious damage to the health of the individual.
Skin Contact	Evidence exists, or practical experience predicts, that the material either produces inflammation of the skin in a substantial number of individuals following direct contact, and/or produces significant inflammation when applied to the healthy intact skin of animals, for up to four hours, such inflammation being present twenty-four hours or more after the end of the exposure period. Skin irritation may also be present after prolonged or repeated exposure; this may result in a form of contact dermatitis (nonallergic). The dermatitis is often characterised by skin redness (erythema) and swelling (oedema) which may progress to blistering (vesiculation), scaling and thickening of the epidermis. At the microscopic level there may be intercellular oedema of the spongy layer of the skin (spongiosis) and intracellular oedema of the epidermis. The material may accentuate any pre-existing dermatitis condition Repeated exposure may cause skin cracking, flaking or drying following normal handling and use. Skin contact with the material may damage the health of the individual; systemic effects may result following absorption. Open cuts, abraded or irritated skin should not be exposed to this material Entry into the blood-stream through, for example, cuts, abrasions, puncture wounds 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.
Eye	When applied to the eye(s) of animals, the material produces severe ocular lesions which are present twenty-four hours or more after instillation.
Chronic	On the basis, primarily, of animal experiments, concern has been expressed that the material may produce carcinogenic or mutagenic effects; in respect of the available information, however, there presently exists inadequate data for making a satisfactory assessment. Long-term exposure to respiratory irritants may result in disease of the airways involving difficult breathing and related systemic problems. Limited evidence suggests that repeated or long-term occupational exposure may produce cumulative health effects involving organs or biochemical systems. In a two-year inhalation study, groups of mice were exposed at 0, 10 or 30 ppm naphthalene, 6 hours/day, 5 days/week for 103 weeks. Female mice showed an increase of pulmonary alveolar/bronchiolar adenomas at 30 ppm. There was no increase in the incidence of tumours in male mice. Naphthalene inhalation was associated with an increase in the incidence and severity of chronic inflammation, metaplasia of the olfactory epithelium, and hyperplasia of the respiratory epithelium in the nose, and chronic inflammation of the lungs of both sexes.

Continued...

	Chronic solvent inhalation exposures may result in nervous system impairment and liver and blood changes. [PATTYS]

ACC-9	**TOXICITY**	**IRRITATION**
	Not Available	Not Available
dichlorotoluene	**TOXICITY**	**IRRITATION**
	Oral (rat) LD50: 4600 mg/kg	Eye : Mild
		Skin : Moderate
	Not Available	Not Available
middle distillate	**TOXICITY**	**IRRITATION**
	Not Available	Not Available
o-chlorotoluene	**TOXICITY**	**IRRITATION**
	Dermal (Rabbit) LD50: >2165 mg/kg *	
	Dermal (Rat) LD50: >1083 mg/kg*	
	Inhalation (Rat) LC50: 37517 mg/m3/4h *	
	Oral (Rat) LD50: 3227 mg/kg *	
	Not Available	Not Available
diethanolamine cocoate	**TOXICITY**	**IRRITATION**
	Not Available	Not Available
p-chlorotoluene	**TOXICITY**	**IRRITATION**
	Oral (rat) LD50: 2100 mg/kg	No data available.
	Not Available	Not Available
naphthalene	**TOXICITY**	**IRRITATION**
		Skin (rabbit):495 mg (open) - mild
	Not Available	Not Available

Not available. Refer to individual constituents.

DICHLOROTOLUENE	Asthma-like symptoms may continue for months or even years after exposure to the material ceases. This may be due to a non-allergenic condition known as reactive airways dysfunction syndrome (RADS) which can occur following exposure to high levels of highly irritating compound. Key criteria for the diagnosis of RADS include the absence of preceding respiratory disease, in a non-atopic individual, with abrupt onset of persistent asthma-like symptoms within minutes to hours of a documented exposure to the irritant. A reversible airflow pattern, on spirometry, with the presence of moderate to severe bronchial hyperreactivity on methacholine challenge testing and the lack of minimal lymphocytic inflammation, without eosinophilia, have also been included in the criteria for diagnosis of RADS. RADS (or asthma) following an irritating inhalation is an infrequent disorder with rates related to the concentration of and duration of exposure to the irritating substance. Industrial bronchitis, on the other hand, is a disorder that occurs as result of exposure due to high concentrations of irritating substance (often particulate in nature) and is completely reversible after exposure ceases. The disorder is characterised by dyspnea, cough and mucus production. For dichlorotoluenes: 2,6-Dichlorotoluene is moderately toxic in a repeated dose study (i.e. liver, kidney, thymus) and reproductive/ developmental toxicity study (maternal toxicity). **Repeat dose toxicity:** In a combined repeat dose and reproductive/developmental toxicity screening test, using 2,6-dichlorotoluene both male and female rats showed histopathological changes in liver, kidney and thymus, and maternal toxicity was observed. The no observed effect levels (NOEL) were obtained as 30 mg/kg/day for repeated dose toxicity and 100 mg/kg/day for reproductive toxicity. In a combined repeat dose and reproductive/developmental toxicity screening test, using 2,4-dichlorotoluene, dose dependent salivation was found in all treated groups. Toxicological significant changes in haematological and blood chemical examinations were found at the highest dose (e.g. decrease of platelet count). Increased liver and kidney weights were also found at the same level with pathological remarks (e.g. centrilobular swelling of hepatocytes). For reproductive/developmental end-points, a decrease of fertility was found in conjunction with normal copulation but with low pregnancy at the highest dose. However, no histopathological change related to infertility was seen in the paternal organs. Decreases of pup body weights were noted in the highest dose group during the lactation period. Therefore, the overall NOEL was less than 12.5 mg/kg/day for repeated dose toxicity and 79 mg/kg/day for reproductive toxicity. **Mutagenicity/ genotoxicity:** 2,4-Dichlorotoluene showed no genotoxic effects in bacteria and in a chromosomal aberration test *in vitro*.. 2,4-Dichlorotoluene showed negative results in *Salmonella typhimurium* TA100, TA1535, TA98, TA1537 and *Escherichia coli* WP2 *uvr*A at concentrations up to 1 mg/plate with or without metabolic activation system. A chromosomal aberration test in line with Guidelines for Screening Mutagenicity Testing of Chemicals (Japan) and OECD Test Guideline 473 was conducted using cultured Chinese Hamster lung (CHL/IU) cells exposed to 2,4-dichlorotoluene. No structural chromosomal aberrations or polyploidy were observed up to a maximum concentration (90 ug/ml) in both continuous treatment and short-term treatment with or without an exogenous metabolic activation system. 2,6-Dichlorotoluene had no genotoxic effects in bacteria and in chromosomal aberration test *in vitro* No sensitising effects in guinea pig (OECD 406) GPMT according to Magnusson-Kligman
MIDDLE DISTILLATE	No significant acute toxicological data identified in literature search.
O-CHLOROTOLUENE	for o-chlorotoluene: o-Chlorotoluene, tested according to OECD Guideline 404, is slightly irritating to the skin. However, when tested under occlusive conditions, the substance is corrosive. o-Chlorotoluene, tested according to OECD Guideline 405, was irritating to the eye in 1 out of 3 animals.

Continued...

	o-Chlorotoluene, tested according to OECD Guideline 406, is not sensitizing to the skin of guinea pigs. The NOEL for repeated dosing (3 months) by gavage in rats is 20 mg/kg bw. In higher dosage (80 or 320 mg/kg bw) unspecific signs of toxicity were observed, e.g. reduced body weight gain in male animals, elevated BUN, elevated WBC count, reduced prothrombin time. The NOEL for repeated dosing via capsule (3 months) in dogs is 20 mg/kg bw. In higher dosage (80 mg/kg bw) one animal showed vomiting, and red blood was detected in faeces, which might be due to the slightly irritating property of o-chlorotoluene. In range finding study tests, the LOAELs after inhalation were 4 mg/l (approx. 4000 mg/m3, 14 d) in rats and 8 mg/l (approx. 8000 mg/m3, 23 d) in rabbits. There is no NOEL from these data. o-Chlorotoluene showed no mutagenic activity in bacterial and in mammalian cell test systems *in vitro* . o-Chlorotoluene showed no clastogenic activity *in vitro* and *in vivo*. Regarding reproductive toxicity there are 3 months-studies on rats and dogs which evaluated also the reproductive organs. In the rat study, males and females received 2- chlorotoluene 0, 20, 80, or 320 mg/kg bw solution by gavage for 103- 104 days. Gross and histological evaluation revealed that the administration of o-chlorotoluene to rats did not produce any treatment -related pathology in these organs. Histopathologic examination of the reproductive organs showed that in 1/20 male rats and in 3/20 female rats in the lowest dose group testicular atrophy or hydrometra occurred. In the dog study, males and females received 0, 5, 20, or 80 mg/kg bw as via capsule for 95-96 days. Also in this study, there were no treatment related changes regarding gross examination of the organs, and the histological examination showed no pathological alteration. However, there are data from structurally related compounds showing effects on fertility. Developmental toxic effects in rats and rabbits occur in the presence of maternal toxicity and without a clear dose-response relationship, however as a specific malformation, brachydactyly. Rats: NOAEL: 1.0 mg/l (maternal toxicity) and no NOAEL, LOAEL 1.1 mg/l (developmental toxicity) Rabbit: NOAEL: 1.0 mg/l (maternal toxicity) and 4 mg/l (developmental toxicity) for o-chlorotoluene (syn: 2-chlorotoluene) **Acute toxicity:** The acute oral toxicity: LD 50 (Rat, male): 3227 mg/kg bw; LD50 (Rat, female): 3860 mg/kg bw The acute inhalation toxicity: LC50 (Rat): 37517 mg/m3 (4 h) The acute dermal toxicity: LD 50 (Rat): > 1083 mg/kg bw; LD50 (Rabbit): > 2165 mg/kg bw 2-Chlorotoluene, tested according to OECD Guideline 404, is slightly irritating to the skin. However, when tested under occlusive conditions, the substance is corrosive. 2-Chlorotoluene, tested according to OECD Guideline 405, was irritating to the eye in 1 out of 3 animals. 2-Chlorotoluene, tested according to OECD Guideline 406, is not sensitising to the skin of guinea pigs. **Repeat dose toxicity:** The NOEL for repeated dosing (3 months) by gavage in rats is 20 mg/kg bw. In higher dosage (80 or 320 mg/kg bw) unspecific signs of toxicity were observed, e.g. reduced body weight gain in male animals, elevated BUN, elevated WBC count, reduced prothrombin time. The NOEL for repeated dosing via capsule (3 months) in dogs is 20 mg/kg bw. In higher dosage (80 mg/kg bw) one animal showed vomiting, and red blood was detected in faeces, which might be due to the slightly irritating property of 2-chlorotoluene. In range finding study tests, the LOAELs after inhalation were 4 mg/l (approx. 4000 mg/m3, 14 d) in rats and 8 mg/l (approx. 8000 mg/m3, 23 d) in rabbits. There is no NOEL from these data. **Reproductive toxicity:** there are 3 months-studies on rats and dogs which evaluated also the reproductive organs. In the rat study, males and females received 2- chlorotoluene 0, 20, 80, or 320 mg/kg bw solution by gavage for 103- 104 days. Gross and histological evaluation revealed that the administration of 2-chlorotoluene to rats did not produce any treatment -related pathology in these organs. Histopathologic examination of the reproductive organs showed that in 1/20 male rats and in 3/20 female rats in the lowest dose group testicular atrophy or hydrometra occurred. In the dog study, males and females received 0, 5, 20, or 80 mg/kg bw as via capsule for 95-96 days. Also in this study, there were no treatment related changes regarding gross examination of the organs, and the histological examination showed no pathological alteration. However, there are data from structurally related compounds showing effects on fertility. **Developmental toxicity:** Developmental toxic effects in rats and rabbits occur in the presence of maternal toxicity and without a clear dose-response relationship, however as a specific malformation, brachydactyly. Rats: NOAEL: 1.0 mg/l (maternal toxicity) and no NOAEL, LOAEL 1.1 mg/l (developmental toxicity) Rabbit: NOAEL: 1.0 mg/l (maternal toxicity) and 4 mg/l (developmental toxicity) **Genotoxicity:** 2-Chlorotoluene showed no mutagenic activity in bacterial and in mammalian cell test systems in vitro . 2-Chlorotoluene showed no clastogenic activity in vitro and in vivo. * SIDS HPV Challenge Program
DIETHANOLAMINE COCOATE	Fatty acid amides (FAA) are ubiquitous in household and commercial environments. The most common of these are based on coconut oil fatty acids alkanolamides. These are the most widely studied in terms of human exposure. Fatty acid diethanolamides (C8-C18) are classified by Comite Europeen des Agents de Surface et de leurs Intermediaires Organiques (CESIO) as Irritating (Xi) with the risk phrases R38 (Irritating to skin) and R41 (Risk of serious damage to eyes). Fatty acid monoethanolamides are classified as Irritant (Xi) with the risk phrases R41 Several studies of the sensitization potential of cocoamide diethanolamide (DEA) indicate that this FAA induces occupational allergic contact dermatitis and a number of reports on skin allergy patch testing of cocoamide DEA have been published. These tests indicate that allergy to cocoamide DEA is becoming more common. Alkanolamides are manufactured by condensation of diethanolamine and the methylester of long chain fatty acids. Several alkanolamides (especially secondary alkanolamides) are susceptible to nitrosamine formation which constitutes a potential health problem. Nitrosamine contamination is possible either from pre-existing contamination of the diethanolamine used to manufacture cocoamide DEA, or from nitrosamine formation by nitrosating agents in formulations containing cocoamide DEA. According to the Cosmetic Directive (2000) cocoamide DEA must not be used in products with nitrosating agents because of the risk of formation of N-nitrosamines. The maximum content allowed in cosmetics is 5% fatty acid dialkanolamides, and the maximum content of N-nitrosodialkanolamines is 50 mg/kg. The preservative 2-bromo-2-nitropropane-1,3-diol is a known nitrosating agent for secondary and tertiary amines or amides. Model assays have indicated that 2-bromo-2-nitropropane-1,3-diol may lead to the N-nitrosation of diethanolamine forming the carcinogenic compound, N-nitrosodiethanolamine which is a potent liver carcinogen in rats (IARC 1978). Several FAAs have been tested in short-term genotoxicity assays. No indication of any potential to cause genetic damage was seen Lauramide DEA was tested in mutagenicity assays and did not show mutagenic activity in *Salmonella typhimurium* strains or in hamster embryo cells. Cocoamide DEA was not mutagenic in strains of *Salmonella typhimurium* when tested with or without metabolic activation Environmental and Health Assessment of Substances in Household Detergents and Cosmetic Detergent Products, Environment Project, 615, 2001. Miljoministeriet (Danish Environmental Protection Agency) For Fatty Nitrogen Derived (FND) Amides) The chemicals in the Fatty Nitrogen Derived (FND) Amides of surfactants are similar to the class in general as to physical/chemical properties, environmental fate and toxicity. Human exposure to these chemicals is substantially documented. Some typical applications of FND Amides are: masonry cement additive; curing agent for epoxy resins; closed hydrocarbon systems in oil field production, refineries and chemical plants; and slip and antiblocking additives for polymers. The safety of the FND Amides to humans is recognised by the U.S. FDA, which has approved stearamide, oleamide and/or erucamide for adhesives; coatings for articles in food contact; coatings for polyolefin films; defoaming agents for manufacture of paper and paperboard; animal glue (defoamer in

Continued...

	food packaging); in EVA copolymers for food packaging; lubricants for manufacture of metallic food packaging; irradiation of prepared foods; release agents in manufacture of food packaging materials, food contact surface of paper and paperboard; cellophane in food packaging; closure sealing gaskets; and release agents in polymeric resins and petroleum wax. The low order of toxicity indicates that the use of FND Amides does not pose a significant hazard to human health. The differences in chain length, degree of saturation of the carbon chains, source of the natural oils, or addition of an amino group in the chain would not be expected to have an impact on the toxicity profile. This conclusion is supported by a number of studies in the FND family of chemicals (amines, cationics, and amides as separate categories) that show no differences in the length or degree of saturation of the alkyl substituents and is also supported by the limited toxicity of these long-chain substituted chemicals The Fatty nitrogen-derived amides (FND amides) comprise four categories: ▸ Subcategory I: Substituted Amides ▸ Subcategory II: Fatty Acid Reaction Products with Amino Compounds (Note: Subcategory II chemicals, in many cases, contain Subcategory I chemicals as major components) ▸ Subcategory III: Imidazole Derivatives ▸ Subcategory IV: FND Amphoterics **Acute Toxicity:** The low acute oral toxicity of the FND Amides is well established across all Subcategories by the available data. The limited acute toxicity of these chemicals is also confirmed by four acute dermal and two acute inhalation studies **Repeated Dose and Reproductive Toxicity:** Two subchronic toxicity studies demonstrating low toxicity are available for Subcategory I chemicals. In addition, a 5-day repeated dose study for a third chemical confirmed the minimal toxicity of these chemicals. Since the Subcategory I chemicals are major components of many Subcategory II chemicals, and based on the low repeat-dose toxicity of the amino compounds (e.g. diethanolamine, triethanolamine) used for producing the Subcategory II derivatives, the Subcategory I repeat-dose toxicity studies adequately support Subcategory II. Two subchronic toxicity studies in Subcategory III confirmed the low order of repeat dose toxicity for the FND Amides Imidazole derivatives. For Subcategory IV, two subchronic toxicity studies for one of the chemicals indicated a low order of repeat-dose toxicity for the FND amphoteric salts similar to that seen in the other categories. **Genetic Toxicity *in vitro*:** Based on the lack of effect of one or more chemicals in each subcategory, adequate data for mutagenic activity as measured by the *Salmonella* reverse mutation assay exist for all of the subcategories. **Developmental Toxicity:** A developmental toxicity study in Subcategory I and in Subcategory IV and a third study for a chemical in Subcategory III are available. The studies indicate these chemicals are not developmental toxicants, as expected based on their structures, molecular weights, physical properties and knowledge of similar chemicals. As above for repeat-dose toxicity, the data for Subcategory I are adequate to support Subcategory II. In evaluating potential toxicity of the FND Amides chemicals, it is also useful to review the available data for the related FND Cationic and FND Amines Category chemicals. Acute oral toxicity studies (approximately 80 studies for 40 chemicals in the three categories) provide LD50 values from approximately 400 to 10,000 mg/kg with no apparent organ specific toxicity. Similarly, repeated dose toxicity studies (approximately 35 studies for 15 chemicals) provide NOAELs between 10 and 100 mg/kg/day for rats and slightly lower for dogs. More than 60 genetic toxicity studies (*in vitro* bacterial and mammalian cells as well as *in vivo* studies) indicated no mutagenic activity among more than 30 chemicals tested. For reproductive evaluations, 14 studies evaluated reproductive endpoints and/or reproductive organs for 11 chemicals, and 15 studies evaluated developmental toxicity for 13 chemicals indicating no reproductive or developmental effects for the FND group as a whole. No significant acute toxicological data identified in literature search.
P-CHLOROTOLUENE	Unreported (rat) LD50: 4000 mg/kg
NAPHTHALENE	Unrep. (human) LDLo: 29 mg/kg Eye (rabbit): 100 mg - mild Unrep. (man) LDLo: 74 mg/kg Oral (rat) LD50: 490 mg/kg Dermal (rat) LD50: >2500 mg/kg The material may be irritating to the eye, with prolonged contact causing inflammation. Repeated or prolonged exposure to irritants may produce conjunctivitis. The material may cause skin irritation after prolonged or repeated exposure and may produce a contact dermatitis (nonallergic). This form of dermatitis is often characterised by skin redness (erythema) and swelling epidermis. Histologically there may be intercellular oedema of the spongy layer (spongiosis) and intracellular oedema of the epidermis. **WARNING:** This substance has been classified by the IARC as Group 2B: Possibly Carcinogenic to Humans.

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 required to make classification available*
✘ *– Data available but does not fill the criteria for classification*
⊘ *– Data Not Available to make classification*

CMR STATUS

CARCINOGEN	dichlorotoluene	US Environmental Defense Scorecard Suspected Carcinogens	P65-MC
	o-chlorotoluene	US Environmental Defense Scorecard Suspected Carcinogens	P65-MC
	p-chlorotoluene	US Environmental Defense Scorecard Suspected Carcinogens	P65-MC
	naphthalene	US Environmental Defense Scorecard Recognized Carcinogens|US Environmental Defense Scorecard Suspected Carcinogens	P65|EPA-HEN, P65-MC
RESPIRATORY	naphthalene	US - California OEHHA/ARB - Chronic Reference Exposure Levels and Target Organs (CRELs) - Respiratory	X
SKIN	middle distillate	US ACGIH Threshold Limit Values (TLV) - Skin	Yes
	o-chlorotoluene	US - California Permissible Exposure Limits for Chemical Contaminants - Skin	S|X
	naphthalene	US ACGIH Threshold Limit Values (TLV) - Skin	Yes

SECTION 12 ECOLOGICAL INFORMATION

Toxicity

Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
Do NOT allow product to come in contact with surface waters or to intertidal areas below the mean high water mark. Do not contaminate water when cleaning equipment or disposing of equipment

Continued...

wash-waters.
Wastes resulting from use of the product must be disposed of on site or at approved waste sites.
DO NOT discharge into sewer or waterways.

Persistence and degradability

Ingredient	Persistence: Water/Soil	Persistence: Air
o-chlorotoluene	low	low
p-chlorotoluene	low	low
naphthalene	high (Half-life = 258 days)	low (Half-life = 1.23 days)

Bioaccumulative potential

Ingredient	Bioaccumulation
o-chlorotoluene	low (BCF = 112)
p-chlorotoluene	low (BCF = 101.6)
naphthalene	low (BCF = 168)

Mobility in soil

Ingredient	Mobility
o-chlorotoluene	low (KOC = 443.1)
p-chlorotoluene	low (KOC = 434)
naphthalene	low (KOC = 1837)

SECTION 13 DISPOSAL CONSIDERATIONS

Waste treatment methods

Product / Packaging disposal	▸ 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. In some areas, certain wastes must be tracked. A Hierarchy of Controls seems to be common - the user should investigate: ▸ Reduction ▸ Reuse ▸ Recycling ▸ Disposal (if all else fails) This material may be recycled if unused, or if it has not been contaminated so as to make it unsuitable for its intended use. If it has been contaminated, it may be possible to reclaim the product by filtration, distillation or some other means. Shelf life considerations should also be applied in making decisions of this type. Note that properties of a material may change in use, and recycling or reuse may not always be appropriate. ▸ **DO NOT** allow wash water from cleaning or process equipment to enter drains. ▸ It may be necessary to collect all wash water for treatment before disposal. ▸ In all cases disposal to sewer may be subject to local laws and regulations and these should be considered first. ▸ Where in doubt contact the responsible authority. ▸ Recycle wherever possible or consult manufacturer for recycling options. ▸ Consult State Land Waste Authority for disposal. ▸ Bury or incinerate residue at an approved site. ▸ Recycle containers if possible, or dispose of in an authorised landfill.

SECTION 14 TRANSPORT INFORMATION

Labels Required

	
Marine Pollutant	

Land transport (DOT)

UN number	3082
Packing group	III
UN proper shipping name	Environmentally hazardous substance, liquid, n.o.s. (contains dichlorotoluene)
Environmental hazard	No relevant data
Transport hazard class(es)	Class: 9
Special precautions for user	Special provisions: 8, 146, 173, 335, IB3, T4, TP1, TP29

Continued...

Air transport (ICAO-IATA / DGR)

UN number	3082
Packing group	III
UN proper shipping name	Environmentally hazardous substance, liquid, n.o.s. * (contains dichlorotoluene)
Environmental hazard	No relevant data
Transport hazard class(es)	ICAO/IATA Class: 9 ICAO / IATA Subrisk: Not Applicable ERG Code: 9L
Special precautions for user	Special provisions: A97A158 Cargo Only Packing Instructions: 964 Cargo Only Maximum Qty / Pack: 450 L Passenger and Cargo Packing Instructions: 964 Passenger and Cargo Maximum Qty / Pack: 450 L Passenger and Cargo Limited Quantity Packing Instructions: Y964 Passenger and Cargo Limited Maximum Qty / Pack: 30 kg G

Sea transport (IMDG-Code / GGVSee)

UN number	3082
Packing group	III
UN proper shipping name	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (contains dichlorotoluene)
Environmental hazard	No relevant data
Transport hazard class(es)	IMDG Class: 9 IMDG Subrisk: Not Applicable
Special precautions for user	EMS Number: F-A , S-F Special provisions: 274 335 Limited Quantities: 5 L

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

Source	Ingredient	Pollution Category
IMO MARPOL 73/78 (Annex II) - List of Noxious Liquid Substances Carried in Bulk	o-chlorotoluene	Y
IMO MARPOL 73/78 (Annex II) - List of Noxious Liquid Substances Carried in Bulk	p-chlorotoluene	Y
IMO MARPOL 73/78 (Annex II) - List of Noxious Liquid Substances Carried in Bulk	naphthalene	X

SECTION 15 REGULATORY INFORMATION

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

dichlorotoluene(29797-40-8) is found on the following regulatory lists	"US Toxic Substances Control Act (TSCA) - Chemical Substance Inventory"
middle distillate(68476-34-6) is found on the following regulatory lists	"US ACGIH Threshold Limit Values (TLV)","US Toxic Substances Control Act (TSCA) - Chemical Substance Inventory"
o-chlorotoluene(95-49-8) is found on the following regulatory lists	"US - Tennessee Occupational Exposure Limits - Limits For Air Contaminants","US - California Permissible Exposure Limits for Chemical Contaminants","US - Hawaii Air Contaminant Limits","US - Vermont Permissible Exposure Limits Table Z-1-A Final Rule Limits for Air Contaminants","US - Michigan Exposure Limits for Air Contaminants","US NIOSH Recommended Exposure Limits (RELs)","US - Alaska Limits for Air Contaminants","US - Washington Permissible exposure limits of air contaminants","US - Minnesota Permissible Exposure Limits (PELs)","US ACGIH Threshold Limit Values (TLV)","US - Vermont Permissible Exposure Limits Table Z-1-A Transitional Limits for Air Contaminants","US Toxic Substances Control Act (TSCA) - Chemical Substance Inventory"
diethanolamine cocoate(8051-30-7) is found on the following regulatory lists	"US Toxic Substances Control Act (TSCA) - Chemical Substance Inventory"
p-chlorotoluene(106-43-4) is found on the following regulatory lists	"US Toxic Substances Control Act (TSCA) - Chemical Substance Inventory"
naphthalene(91-20-3) is found on the following regulatory lists	"US - Tennessee Occupational Exposure Limits - Limits For Air Contaminants","US ATSDR Minimal Risk Levels for Hazardous Substances (MRLs)","US - Idaho - Limits for Air Contaminants","US - Hawaii Air Contaminant Limits","US - California Permissible Exposure Limits for Chemical Contaminants","US - California Proposition 65 - No Significant Risk Levels (NSRLs) for Carcinogens","US ACGIH Threshold Limit Values (TLV) - Carcinogens","US - Michigan Exposure Limits for Air Contaminants","US EPA Carcinogens Listing","US National Toxicology Program (NTP) 12th Report Part B. Reasonably Anticipated to be a Human Carcinogen","US - Vermont Permissible Exposure Limits Table Z-1-A Final Rule Limits for Air Contaminants","US - California - Proposition 65 -

Continued...

	Priority List for the Development of MADLs for Chemicals Causing Reproductive Toxicity","International Agency for Research on Cancer (IARC) - Agents Classified by the IARC Monographs","US - Oregon Permissible Exposure Limits (Z-1)","US - Washington Toxic air pollutants and their ASIL, SQER and de minimis emission values","US NIOSH Recommended Exposure Limits (RELs)","US - Alaska Limits for Air Contaminants","US - Washington Permissible exposure limits of air contaminants","US - California Proposition 65 - Carcinogens","US National Toxicology Program (NTP) 12th Report Part A Known to be Human Carcinogens","US - Minnesota Permissible Exposure Limits (PELs)","US ACGIH Threshold Limit Values (TLV)","US - Vermont Permissible Exposure Limits Table Z-1-A Transitional Limits for Air Contaminants","US - California OEHHA/ARB - Chronic Reference Exposure Levels and Target Organs (CRELs)","US Toxic Substances Control Act (TSCA) - Chemical Substance Inventory","US - Wyoming Toxic and Hazardous Substances Table Z1 Limits for Air Contaminants","US - New Jersey Right to Know - Special Health Hazard Substance List (SHHSL): Carcinogens","US OSHA Permissible Exposure Levels (PELs) - Table Z1"

SECTION 16 OTHER INFORMATION

Other information

Classification of the preparation and its individual components has drawn on official and authoritative sources as well as independent review by the Chemwatch Classification committee using available literature references.
A list of reference resources used to assist the committee may be found at:
www.chemwatch.net/references

The (M)SDS is a Hazard Communication tool and should be used to assist in the Risk Assessment. Many factors determine whether the reported Hazards are Risks in the workplace or other settings. Risks may be determined by reference to Exposures Scenarios. Scale of use, frequency of use and current or available engineering controls must be considered.

end of SDS