Base/Neutrals - Mix 2

Novachem Pty Ltd

Chemwatch Hazard Alert Code: **4**

Version No: **4.4**
Safety Data Sheet according to WHS Regulations (Hazardous Chemicals) Amendment 2020 and ADG requirements

Issue Date: **05/07/2023**
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SECTION 1 Identification of the substance / mixture and of the company / undertaking

Product Identifier

Product name	Base/Neutrals - Mix 2
Synonyms	Z-014B
Other means of identification	Z-014B

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

Relevant identified uses	Laboratory chemical reference material.

Details of the manufacturer or supplier of the safety data sheet

Registered company name	**Novachem Pty Ltd**	**Accustandard**
Address	25 Crissane Road, Heidelberg West Victoria 3081 Australia	125 Market St New Haven CT 6513 United States
Telephone	+61384151255	+1 203 786 5290|+1 800 442 5290
Fax	+61386250088	+1 203 786 5287
Website	www.novachem.com.au	http://www.accustandard.com/
Email	novachem@novachem.com.au	kw@accustandard.com

Emergency telephone number

Association / Organisation	**Victorian Poisons Information Centre**
Emergency telephone numbers	13 11 26
Other emergency telephone numbers	Not Available

SECTION 2 Hazards identification

Classification of the substance or mixture

Poisons Schedule	Not Applicable
Classification [1]	Acute Toxicity (Oral) Category 4, Skin Corrosion/Irritation Category 2, Serious Eye Damage/Eye Irritation Category 2A, Specific Target Organ Toxicity - Single Exposure (Respiratory Tract Irritation) Category 3, Germ Cell Mutagenicity Category 1B, Carcinogenicity Category 2, Hazardous to the Aquatic Environment Long-Term Hazard Category 3
Legend:	*1. Classified by Chemwatch; 2. Classification drawn from HCIS; 3. Classification drawn from Regulation (EU) No 1272/2008 - Annex VI*

Label elements

Hazard pictogram(s)	
Signal word	**Danger**

Hazard statement(s)

H302	Harmful if swallowed.
H315	Causes skin irritation.
H319	Causes serious eye irritation.
H335	May cause respiratory irritation.
H340	May cause genetic defects.
H351	Suspected of causing cancer.

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H412	Harmful to aquatic life with long lasting effects.

Precautionary statement(s) Prevention

P201	Obtain special instructions before use.
P271	Use only outdoors or in a well-ventilated area.
P280	Wear protective gloves, protective clothing, eye protection and face protection.
P261	Avoid breathing mist/vapours/spray.

Precautionary statement(s) Response

P308+P313	IF exposed or concerned: Get medical advice/ attention.
P305+P351+P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P337+P313	If eye irritation persists: Get medical advice/attention.
P301+P312	IF SWALLOWED: Call a POISON CENTER/doctor/physician/first aider if you feel unwell.

Precautionary statement(s) Storage

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 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
75-09-2	97.2	methylene chloride
77-47-4	0.2	hexachlorocyclopentadiene
541-73-1	0.2	1,3-dichlorobenzene
95-50-1	0.2	1,2-dichlorobenzene
78-59-1	0.2	isophorone
98-95-3	0.2	nitrobenzene
103-33-3	0.2	azobenzene
106-46-7	0.2	1,4-dichlorobenzene
118-74-1	0.2	hexachlorobenzene
67-72-1	0.2	hexachloroethane
606-20-2	0.2	2,6-dinitrotoluene
87-68-3	0.2	hexachlorobutadiene
91-58-7	0.2	2-chloronaphthalene
121-14-2	0.2	2,4-dinitrotoluene
120-82-1	0.2	1,2,4-trichlorobenzene
Legend:	*1. Classified by Chemwatch; 2. Classification drawn from HCIS; 3. Classification drawn from Regulation (EU) No 1272/2008 - Annex VI; 4. Classification drawn from C&L; * EU IOELVs available*	

SECTION 4 First aid measures

Description of first aid measures

Eye Contact	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.

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	▸ 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.

Indication of any immediate medical attention and special treatment needed

Treat symptomatically.
for intoxication due to Freons/ Halons;
A: Emergency and Supportive Measures
- Maintain an open airway and assist ventilation if necessary
- Treat coma and arrhythmias if they occur. Avoid (adrenaline) epinephrine or other sympathomimetic amines that may precipitate ventricular arrhythmias. Tachyarrhythmias caused by increased myocardial sensitisation may be treated with propranolol, 1-2 mg IV or esmolol 25-100 microgm/kg/min IV.
- Monitor the ECG for 4-6 hours

B: Specific drugs and antidotes:
- There is no specific antidote

C: Decontamination
- Inhalation; remove victim from exposure, and give supplemental oxygen if available.
- Ingestion; (a) Prehospital: Administer activated charcoal, if available. **DO NOT** induce vomiting because of rapid absorption and the risk of abrupt onset CNS depression. (b) Hospital: Administer activated charcoal, although the efficacy of charcoal is unknown. Perform gastric lavage only if the ingestion was very large and recent (less than 30 minutes)

D: Enhanced elimination:
- There is no documented efficacy for diuresis, haemodialysis, haemoperfusion, or repeat-dose charcoal.

POISONING and DRUG OVERDOSE, Californian Poison Control System Ed. Kent R Olson; 3rd Edition
- Do not administer sympathomimetic drugs unless absolutely necessary as material may increase myocardial irritability.
- No specific antidote.
- Because rapid absorption may occur through lungs if aspirated and cause systematic effects, the decision of whether to induce vomiting or not should be made by an attending physician.
- If lavage is performed, suggest endotracheal and/or esophageal control.
- Danger from lung aspiration must be weighed against toxicity when considering emptying the stomach.
- Treatment based on judgment of the physician in response to reactions of the patient

Compare PCB treatment regime:
Presentation:
· Acute symptoms related to overexposure to the PCBs and dioxins (PCDDs and PCDFs) include irritation of the skin, eyes and mucous membranes and nausea, vomiting and myalgias.
· After a latency period which may be prolonged (up to several weeks or more), chloracne, porphyria cutanea tarda, hirsutism, or hyper-pigmentation may occur. Elevated levels of hepatic transaminases and blood lipids may be found. Polyneuropathies with sensory impairment and lower-extremity motor weakness may also occur.
· Useful laboratory studies might include glucose, electrolytes, BUN, creatinine, liver transaminase, and liver function tests, and uroporphyrins (where porphyria is suspected)
Treatment:
· Emergency and Supportive Measures: Treat skin, eye and respiratory irritation symptomatically
· There is no specific antidote
· Decontamination: 1. Inhalation; remove victims from exposure and give supplemental oxygen if available. 2. Eyes and Skin: remove contaminated clothing and wash affected skin with copious soap and water; irrigate exposed eyes with copious tepid water or saline. 3. Ingestion; (a) Prehospital: Administer activated charcoal if available. Ipecac-induced vomiting may be useful for initial treatment at the scene if it can be given within a few minutes exposure (b) Hospital: Administer activated charcoal. Gastric emptying is not necessary if activated charcoal can be given promptly.
· Enhanced elimination: There is no known role for these procedures.
POISONING and DRUG OVERDOSE, Californian Poison Control System Ed. Kent R Olson; 3rd Edition
If large amounts are ingested, gastric lavage is suggested. In the case of splashes in the eyes, a petrolatum-based ophthalmic ointment may be applied to the eye to relieve the irritating effects of PCBs.
If electrical equipment arcs over, PCB dielectric fluids may decompose to produce hydrogen chloride (HCl), a respiratory irritant. [Monsanto]
Preplacement and annual medical examinations of workers, with emphasis on liver function, skin condition, reproductive history, are recommended.[ILO]

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	▸ 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.
Fire/Explosion Hazard	Combustion products include: carbon dioxide (CO_2) hydrogen chloride phosgene other pyrolysis products typical of burning organic material. **Contains low boiling substance:** Closed containers may rupture due to pressure buildup under fire conditions. May emit poisonous fumes. May emit corrosive fumes.

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	▸ Non flammable liquid. ▸ However vapour will burn when in contact with high temperature flame. ▸ Ignition ceases on removal of flame. ▸ May form a flammable / explosive mixture in an oxygen enriched atmosphere ▸ Heating may cause expansion/vapourisation with violent rupture of containers ▸ Decomposes on heating and produces corrosive fumes of hydrochloric acid, carbon monoxide and small amounts of toxic phosgene.
HAZCHEM	Not Applicable

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	▸ Remove all ignition sources. ▸ Clean up all spills immediately. ▸ Avoid breathing vapours and contact with skin and eyes. ▸ Control personal contact with the substance, by using protective equipment.
Major Spills	Moderate hazard. ▸ Clear area of personnel and move upwind. ▸ Alert Fire Brigade and tell them location and nature of hazard. ▸ Wear breathing apparatus plus protective gloves.

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

SECTION 7 Handling and storage

Precautions for safe handling

Safe handling	**Contains low boiling substance:** Storage in sealed containers may result in pressure buildup causing violent rupture of containers not rated appropriately. ▸ Check for bulging containers. ▸ Vent periodically ▸ Always release caps or seals slowly to ensure slow dissipation of vapours ▸ 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** allow clothing wet with material to stay in contact with skin
Other information	▸ Store in original containers. ▸ Keep containers securely sealed. ▸ No smoking, naked lights or ignition sources. ▸ Store in a cool, dry, well-ventilated area.

Conditions for safe storage, including any incompatibilities

Suitable container	▸ **DO NOT** use aluminium or galvanised containers ▸ Metal can or drum ▸ Packaging as recommended by manufacturer. ▸ Check all containers are clearly labelled and free from leaks.
Storage incompatibility	Methylene chloride ▸ is a combustible liquid under certain circumstances even though there is no measurable flash point and it is difficult to ignite ▸ its is flammable in ambient air in the range 12-23%; increased oxygen content can greatly enhance fire and explosion potential ▸ contact with hot surfaces and elevated temperatures can form fumes of hydrogen chloride and phosgene ▸ reacts violently with active metals, aluminium, lithium, methanol,, peroxydisulfuryl difluoride, potassium, potassium tert-butoxide, sodium ▸ forms explosive mixtures with nitric acid ▸ is incompatible with strong oxidisers, strong caustics, alkaline earths and alkali metals ▸ attacks some plastics, coatings and rubber ▸ may generate electrostatic charge due to low conductivity Segregate from: ▸ powdered metals such as aluminium, zinc and ▸ alkali metals such as sodium, potassium and lithium. May attack, soften or dissolve rubber, many plastics, paints and coatings ▸ Segregate from alcohol, water.

SECTION 8 Exposure controls / personal protection

Control parameters

Occupational Exposure Limits (OEL)

INGREDIENT DATA

Source	Ingredient	Material name	TWA	STEL	Peak	Notes

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Source	Ingredient	Material name	TWA	STEL	Peak	Notes
Australia Exposure Standards	methylene chloride	Methylene chloride	50 ppm / 174 mg/m3	Not Available	Not Available	Not Available
Australia Exposure Standards	hexachlorocyclopentadiene	Hexachlorocyclopentadiene	0.01 ppm / 0.11 mg/m3	Not Available	Not Available	Not Available
Australia Exposure Standards	1,2-dichlorobenzene	o-Dichlorobenzene	25 ppm / 150 mg/m3	301 mg/m3 / 50 ppm	Not Available	Not Available
Australia Exposure Standards	isophorone	Isophorone	Not Available	Not Available	5 ppm / 28 mg/m3	Not Available
Australia Exposure Standards	nitrobenzene	Nitrobenzene	1 ppm / 5 mg/m3	Not Available	Not Available	Not Available
Australia Exposure Standards	1,4-dichlorobenzene	p-Dichlorobenzene	25 ppm / 150 mg/m3	300 mg/m3 / 50 ppm	Not Available	Not Available
Australia Exposure Standards	hexachloroethane	Hexachloroethane	1 ppm / 9.7 mg/m3	Not Available	Not Available	Not Available
Australia Exposure Standards	hexachlorobutadiene	Hexachlorobutadiene	0.02 ppm / 0.21 mg/m3	Not Available	Not Available	Not Available
Australia Exposure Standards	1,2,4-trichlorobenzene	1,2,4-Trichlorobenzene	Not Available	Not Available	5 ppm / 37 mg/m3	Not Available

Emergency Limits

Ingredient	TEEL-1	TEEL-2	TEEL-3
methylene chloride	Not Available	Not Available	Not Available
hexachlorocyclopentadiene	0.03 ppm	0.55 ppm	1 ppm
1,3-dichlorobenzene	6 ppm	66 ppm	400 ppm
1,2-dichlorobenzene	50 ppm	170 ppm	1,000 ppm
isophorone	12 ppm	33 ppm	200 ppm
nitrobenzene	3 ppm	20 ppm	200 ppm
1,4-dichlorobenzene	30 ppm	170 ppm	1,000 ppm
hexachlorobenzene	0.006 mg/m3	14 mg/m3	91 mg/m3
hexachloroethane	3 ppm	36 ppm	300 ppm
2,6-dinitrotoluene	0.6 mg/m3	47 mg/m3	200 mg/m3
hexachlorobutadiene	Not Available	Not Available	Not Available
2-chloronaphthalene	6.2 mg/m3	69 mg/m3	410 mg/m3
2,4-dinitrotoluene	0.6 mg/m3	12 mg/m3	200 mg/m3
1,2,4-trichlorobenzene	0.45 ppm	5 ppm	20 ppm

Ingredient	Original IDLH	Revised IDLH
methylene chloride	2,300 ppm	Not Available
hexachlorocyclopentadiene	Not Available	Not Available
1,3-dichlorobenzene	Not Available	Not Available
1,2-dichlorobenzene	200 ppm	Not Available
isophorone	200 ppm	Not Available
nitrobenzene	200 ppm	Not Available
azobenzene	Not Available	Not Available
1,4-dichlorobenzene	150 ppm	Not Available
hexachlorobenzene	Not Available	Not Available
hexachloroethane	300 ppm	Not Available
2,6-dinitrotoluene	Not Available	Not Available
hexachlorobutadiene	Not Available	Not Available
2-chloronaphthalene	Not Available	Not Available
2,4-dinitrotoluene	Not Available	Not Available
1,2,4-trichlorobenzene	Not Available	Not Available

Occupational Exposure Banding

Ingredient	Occupational Exposure Band Rating	Occupational Exposure Band Limit
1,3-dichlorobenzene	E	≤ 0.1 ppm
azobenzene	E	≤ 0.01 mg/m³
2,6-dinitrotoluene	E	≤ 0.01 mg/m³
2-chloronaphthalene	D	> 0.01 to ≤ 0.1 mg/m³
2,4-dinitrotoluene	E	≤ 0.01 mg/m³
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.*	

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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.
Individual protection measures, such as personal protective equipment	
Eye and face protection	▸ Safety glasses with side shields. ▸ Chemical goggles. [AS/NZS 1337.1, EN166 or national equivalent] ▸ 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.
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 **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. 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. Personal hygiene is a key element of effective hand care.
Body protection	See Other protection below
Other protection	▸ Overalls. ▸ P.V.C apron. ▸ Barrier cream. ▸ Skin cleansing cream.

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:
Base/Neutrals - Mix 2

Material	CPI
BUTYL	C
CPE	C
NATURAL RUBBER	C
NEOPRENE	C
NITRILE	C
PE	C
PE/EVAL/PE	C
PVA	C
PVC	C
SARANEX-23	C
SARANEX-23 2-PLY	C
TEFLON	C
VITON	C
VITON/BUTYL	C
VITON/CHLOROBUTYL	C
VITON/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 BAX-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	BAX-AUS P2	-	BAX-PAPR-AUS / Class 1 P2
up to 50 x ES	-	BAX-AUS / Class 1 P2	-
up to 100 x ES	-	BAX-2 P2	BAX-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)

- 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

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

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up to 10	1000	AX-AUS / Class 1	-
up to 50	1000	-	AX-AUS / Class 1
up to 50	5000	Airline *	-
up to 100	5000	-	AX-2
up to 100	10000	-	AX-3
100+		-	Airline**

** - Continuous-flow or positive pressure demand.
A(All classes) = Organic vapours, B AUS or B1 = Acid gases, 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 deg C)

SECTION 9 Physical and chemical properties

Information on basic physical and chemical properties

Appearance	Contains a chemical subject to Prior Informed Consent (PIC) Regulation which administers the import and export of certain hazardous chemicals and places obligations on companies who wish to export these chemicals to non-EU countries. It aims to promote shared responsibility and cooperation in the international trade of hazardous chemicals, and to protect human health and the environment by providing developing countries with information on how to store, transport, use and dispose of hazardous chemicals safely. This Regulation implements, within the European Union, the Rotterdam Convention on the prior informed consent procedure for certain hazardous chemicals and pesticides in international trade. The PIC Regulation applies to banned or severely restricted chemicals listed in Annex I, containing industrial chemicals, pesticides and biocides. The export of these chemicals is subject to two types of requirement: export notification and explicit consent. The PIC Regulation also applies to chemicals that are banned for export as listed in Annex V and to all chemicals when exported regarding their packaging and labelling, which must comply with relevant EU legislation. Clear liquid with ether-like odour; partly mixes with water.

Physical state	Liquid	**Relative density (Water = 1)**	Not Available
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 (°C)**	Not Available
Melting point / freezing point (°C)	Not Available	**Viscosity (cSt)**	Not Available
Initial boiling point and boiling range (°C)	40	**Molecular weight (g/mol)**	Not Available
Flash point (°C)	>100	**Taste**	Not Available
Evaporation rate	27.5 BuAC = 1	**Explosive properties**	Not Available
Flammability	Not Applicable	**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	Partly miscible	**pH as a solution (1%)**	Not Available
Vapour density (Air = 1)	2.93	**VOC g/L**	Not Available

SECTION 10 Stability and reactivity

Reactivity	See section 7
Chemical stability	▸ 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

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SECTION 11 Toxicological information

Information on toxicological effects

Inhaled	Inhalation of vapours or aerosols (mists, fumes), generated by the material during the course of normal handling, may produce toxic effects. The material can cause respiratory irritation in some persons. The body's response to such irritation can cause further lung damage. Inhalation of vapours may cause drowsiness and dizziness. This may be accompanied by sleepiness, reduced alertness, loss of reflexes, lack of co-ordination, and vertigo. Inhalation hazard is increased at higher temperatures. The inhalation of dioxins may produce respiratory tract irritation, headache, dizziness, nausea and vomiting, fatigue, sleep difficulties, sexual dysfunction, and intolerance to cold. Muscular pains and weakness may be present as well as behavioural disturbances. Inhalation exposure may cause susceptible individuals to show change in heart beat rhythm i.e. cardiac arrhythmia. Exposures must be terminated. Acute intoxication by halogenated aliphatic hydrocarbons appears to take place over two stages. Signs of a reversible narcosis are evident in the first stage and in the second stage signs of injury to organs may become evident, a single organ alone is (almost) never involved.
Ingestion	The material is not thought to produce adverse health effects following ingestion (as classified by EC Directives using animal models). Nevertheless, adverse systemic effects have been produced following exposure of animals by at least one other route and good hygiene practice requires that exposure be kept to a minimum. Dioxin TCDD has been associated with a range of toxic effects. These include loss of body fat, inflammation of the eyelids, kidney damage, depression, loss of hair and nails, anaemia, decreased cholesterol and increased triglycerides, and degeneration of the thymus glands. 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	The material may accentuate any pre-existing dermatitis condition 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 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. Skin absorption of TCDD may result in redness and swelling, followed by acne. Exposure to the material may result in a skin inflammation called chloracne. This is characterised by white- and blackheads, keratin cysts, spots, excessive discolouration. The material may cause severe inflammation of the skin either following direct contact or after a delay of some time. Repeated exposure can cause contact dermatitis which is characterised by redness, swelling and blistering.
Eye	Application of dioxins to the eye may produce irritation, inflammation of eyelids and conjunctiva, and irritation of other mucous membranes. There is some evidence that material may produce eye irritation in some persons and produce eye damage 24 hours or more after instillation. Moderate inflammation may be expected with redness; conjunctivitis may occur with prolonged exposure.
Chronic	There has been concern that this material can cause cancer or mutations, but there is not enough data to make an assessment. Long-term exposure to respiratory irritants may result in airways disease, involving difficulty breathing and related whole-body problems. Skin contact with the material is more likely to cause a sensitisation reaction in some persons compared to the general population. Based on experiments and other information, there is ample evidence to presume that exposure to this material can cause genetic defects that can be inherited. Toxic: danger of serious damage to health by prolonged exposure through inhalation, in contact with skin and if swallowed. This material can cause serious damage if one is exposed to it for long periods. It can be assumed that it contains a substance which can produce severe defects. Ample evidence exists from experimentation that reduced human fertility is directly caused by exposure to the material. Substance accumulation, in the human body, may occur and may cause some concern following repeated or long-term occupational exposure. Exposure to PHAHs, including TCDD, can result in acne, fatigue, decreased libido, sleep trouble, loss of appetite and weight and sensory dysfunction. Skin changes are also possible including pigmentation disorders and excess hair growth. Exposure to polychlorinated biphenyls (PCBs) over a long time can cause eczema and internal effects; various systems may be affected. On the skin, there may be thickening, swelling of the eyelids, feet and hands, itchy red eruptions, discolouration of nails and changes in hair follicles, hair loss, acne, eye discharge, and discolouration of the oral cavity. Dichloromethane exposures cause liver and kidney damage in animals and this justifies consideration before exposing persons with a history of impaired liver function and/or renal disorders. The reactivity of an epoxide intermediate may be the reason for the cancer-causing properties of halogenated oxiranes. It is reported that 1,1-dichloroethyne, vinyl chloride, trichloroethylene, tetrachloroethylene and chloroprene all cause cancer. Generally speaking, substances with one halogen substitution show higher potential to cause cancer compared to substances with two.

Base/Neutrals - Mix 2	**TOXICITY**	**IRRITATION**
	Not Available	Not Available
methylene chloride	**TOXICITY**	**IRRITATION**
	Not Available	Eye(rabbit): 162 mg - moderate
		Eye(rabbit): 500 mg/24hr - mild
		Skin (rabbit): 100mg/24hr-moderate
		Skin (rabbit): 810 mg/24hr-SEVERE
hexachlorocyclopentadiene	**TOXICITY**	**IRRITATION**
	Not Available	Eye (rabbit): 100 mg/5m - SEVERE
		EYE (RABBIT): 20 MG/24H - moderate
		Eye: adverse effect observed (irreversible damage)[1]
		Skin (g.pig): 20 mg - mild
		Skin (monkey): 10 mg - SEVERE
		Skin (rabbit): 500 mg/4h - SEVERE
		Skin: adverse effect observed (corrosive)[1]

Continued...

1,3-dichlorobenzene	**TOXICITY**	**IRRITATION**
	Not Available	Eye: no adverse effect observed (not irritating)[1]
		Skin: adverse effect observed (irritating)[1]
1,2-dichlorobenzene	**TOXICITY**	**IRRITATION**
	Not Available	Eye(rabbit):100mg/30s rinse-mild
		Eye: adverse effect observed (irritating)[1]
		Skin: adverse effect observed (irritating)[1]
isophorone	**TOXICITY**	**IRRITATION**
	Not Available	Eye (human): 25 ppm/15m
		Eye (rabbit): 0.92 mg - SEVERE
		Eye (rabbit): 100 mg/24h-moderate
		Eye: adverse effect observed (irritating)[1]
		Skin (rabbit): 100 mg/24h
		Skin: adverse effect observed (irritating)[1]
		Skin: no adverse effect observed (not irritating)[1]
nitrobenzene	**TOXICITY**	**IRRITATION**
	Not Available	Eye (rat): 500 mg/24h - mild [CCINFO]*
		Eye: no adverse effect observed (not irritating)[1]
		Skin (rabbit): 500 mg/24h - mild
		Skin: no adverse effect observed (not irritating)[1]
azobenzene	**TOXICITY**	**IRRITATION**
	Not Available	Not Available
1,4-dichlorobenzene	**TOXICITY**	**IRRITATION**
	Not Available	Eye (human): 80 ppm
hexachlorobenzene	**TOXICITY**	**IRRITATION**
	Not Available	Not Available
hexachloroethane	**TOXICITY**	**IRRITATION**
	Not Available	Not Available
2,6-dinitrotoluene	**TOXICITY**	**IRRITATION**
	Not Available	Skin (rabbit): 500 mg/24h - mild
hexachlorobutadiene	**TOXICITY**	**IRRITATION**
	Not Available	Eye (rabbit): 162 mg - mild
		Eye (rabbit): 500 mg/24h
		Skin (rabbit): 500 mg/24h - mild
		SKIN (RABBIT): 810 MG/24H -moderate
2-chloronaphthalene	**TOXICITY**	**IRRITATION**
	Not Available	Not Available
2,4-dinitrotoluene	**TOXICITY**	**IRRITATION**
	Not Available	Skin (rabbit): 500 mg/24h - mild
1,2,4-trichlorobenzene	**TOXICITY**	**IRRITATION**
	Not Available	Skin (rabbit): 1950 mg/13w - I- moderate
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*	

Base/Neutrals - Mix 2	Activation of the aryl hydrocarbon receptor (AhR) may lead to certain toxic responses. The “his” receptor has been shown to regulate xenobiotic-metabolising enzymes, such as cytochrome c. Toxicity results from two different ways of receptor signalling. The first is a side effect of the adaptive response, in which the induction of metabolising enzymes results in the production of toxic metabolites. The second results from changes in global gene transcription, beyond those observed in the “AhR gene group”.
METHYLENE CHLORIDE	Inhalation (human) TCLo: 500 ppm/ 1 y - I Eye(rabbit): 10 mg - mild The material may produce moderate eye irritation leading to inflammation. Repeated or prolonged exposure to irritants may produce conjunctivitis.

Continued...

	WARNING: This substance has been classified by the IARC as Group 2A: Probably Carcinogenic to Humans.
HEXACHLOROCYCLOPENTADIENE	The material may produce severe irritation to the eye causing pronounced inflammation. Repeated or prolonged exposure to irritants may produce conjunctivitis.
1,2-DICHLOROBENZENE	Diffuse and zonal hepatocellular necrosis, lachrymation, general anaesthesia, paternal effects, specific developmental anormalities (musculoskeletal sysytem) recorded.
ISOPHORONE	For isophorone: Acute toxicity: In animals, the acute toxicity of isophorone is low to moderate. The tendency of isophorone to accumulate in the body is very low, with most of it being excreted within one day. Isophorone irritates the eye and the airway, but not the skin. It is not sensitizing in animal studies. Repeat dose toxicity: Animal testing did not show significant toxic effects with repeat doses were given by mouth. A member or analogue of a group of aliphatic and alicyclic terpenoid tertiary alcohols and structurally related substances generally regarded as safe. Most alicyclic substances used as flavour ingredients are mono- and bicyclic terpenes which occur naturally in a wide variety of foods. With the exception of pulegone, alicyclic substances show very low oral acute toxicity. In most subchronic studies performed on animals, no adverse effects were observed at any dose level.
AZOBENZENE	WARNING: Azobenzene has shown carcinogenicity and mutagenic activity in non human test systems and because of its potential to be metabolised to benzidine, azobenzene should be considered hazardous to human health. (Source: NIOSHTIC)
1,4-DICHLOROBENZENE	Eye effects, respiratory tract changes, diarrhoea, specific developmental effects (cardiovascular system) recorded.
HEXACHLOROBENZENE	Neoplastic by RTEC criteria Carcinogenic by RTEC criteria Reproductive effector in rats Exposure to the material for prolonged periods may cause physical defects in the developing embryo (teratogenesis).
2,6-DINITROTOLUENE	Oral (rat) TDLo: 13500 mg/kg/90D-I
HEXACHLOROBUTADIENE	Somnolence, irritability, effects on fertility, foetotoxicity, specific developmental abnormalities (central nervous system), effects on newborn recorded.
2-CHLORONAPHTHALENE	for polychlorinated naphthalenes (PCN): Chlorinated naphthalenes can be absorbed via oral, inhalative, and dermal routes, with absorption and distribution over the whole body after oral administration. The main target organs are liver and fat tissue (besides kidney and lung), both showing a high retention, especially for higher chlorinated congeners such as 1,2,3,4,6,7/1,2,3,5,6,7-hexachloronaphthalene. Half-lives of 1,2,3,4,6,7/1,2,3,5,6,7-hexachloronaphthalene were calculated to be 41 days in adipose tissue and 26 days in the liver of rats. Calculations with monitoring data from human blood samples suggested half-lives of 1.5-2.4 years for these hexa-isomers in humans.
1,2,4-TRICHLOROBENZENE	Bacterial mutagen Altered sleep times, somnolence, convulsions, ataxia, maternal effects, effects on embryo, foetotoxicity, foetolethality recorded. Trichlorobenzenes (TCBs) are moderately toxic if swallowed or inhaled. They produce irritation of the skin, eyes and airways. Chronic exposure has caused aplastic anaemia. They are toxic to the liver, and it is currently unknown whether they cause long-term toxicity or cancer. Animal testing showed that skin contact was associated with toxicity, with skin damage and decreased survival, often due to airway infection, tumours and accumulation of amyloid.
Base/Neutrals - Mix 2 & HEXACHLOROCYCLOPENTADIENE & 1,2-DICHLOROBENZENE & ISOPHORONE & HEXACHLOROETHANE & 1,2,4-TRICHLOROBENZENE	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.
Base/Neutrals - Mix 2 & 2-CHLORONAPHTHALENE	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.
Base/Neutrals - Mix 2 & METHYLENE CHLORIDE	
Base/Neutrals - Mix 2 & HEXACHLOROBENZENE	Side-reactions during manufacture of the parent compound may result in the production of trace amounts of polyhalogenated aromatic hydrocarbon(s). Halogenated phenols, and especially their alkali salts, can condense above 300 deg. Polyhalogenated aromatic hydrocarbons (PHAHs) can cause effects on hormones and mimic thyroid hormone. Acne, discharge in the eye, eyelid swellings and visual disturbances may occur.
METHYLENE CHLORIDE & HEXACHLOROCYCLOPENTADIENE & 1,2-DICHLOROBENZENE	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.
1,3-DICHLOROBENZENE & 1,2-DICHLOROBENZENE & 1,4-DICHLOROBENZENE & HEXACHLOROBENZENE & 1,2,4-TRICHLOROBENZENE	Chlorobenzenes produce several clinical symptoms including eye and airway irritation, blood disorders, abnormal skin changes and foetal defects at levels toxic to the mother. They are well absorbed in the stomach, gut and airways, and well metabolised and excreted in the urine. Lethal doses may produce breathing failure and damage to the liver, kidneys, adrenal glands, mucous membranes, and brain.
1,3-DICHLOROBENZENE & 1,2-DICHLOROBENZENE & 1,4-DICHLOROBENZENE	1,2-DCB is quickly and extensively absorbed through both the gastrointestinal tract and the respiratory tract. Dermal absorption is believed to be very low. Following absorption, it is distributed throughout the body. Greatest levels have been found in the fat, kidney, and liver.
1,3-DICHLOROBENZENE & 1,2-DICHLOROBENZENE & AZOBENZENE & HEXACHLOROBUTADIENE	The substance is classified by IARC as Group 3: **NOT** classifiable as to its carcinogenicity to humans. Evidence of carcinogenicity may be inadequate or limited in animal testing.
1,2-DICHLOROBENZENE & NITROBENZENE & HEXACHLOROBUTADIENE	The material may be irritating to the eye, with prolonged contact causing inflammation. Repeated or prolonged exposure to irritants may produce conjunctivitis.
ISOPHORONE & HEXACHLOROBENZENE	No significant acute toxicological data identified in literature search.
ISOPHORONE & NITROBENZENE & 2,6-DINITROTOLUENE & HEXACHLOROBUTADIENE & 2,4-DINITROTOLUENE & 1,2,4-TRICHLOROBENZENE	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.

Continued...

NITROBENZENE & 1,4-DICHLOROBENZENE & HEXACHLOROBENZENE & HEXACHLOROETHANE & 2,6-DINITROTOLUENE & 2,4-DINITROTOLUENE	**WARNING:** This substance has been classified by the IARC as Group 2B: Possibly Carcinogenic to Humans.
1,4-DICHLOROBENZENE & HEXACHLOROETHANE	Tenth Annual Report on Carcinogens: Substance anticipated to be Carcinogen [*National Toxicology Program: U.S. Dep. of Health & Human Services 2002*]
2,6-DINITROTOLUENE & 2,4-DINITROTOLUENE	For dinitrotoluene (dinitromethylbenzene; DNT): In humans, heavy DNT exposure causes signs of methaemoglobin in the blood, which are reversible 2-3 days after removal from exposure. Signs of disturbances in liver function and exposure-dependent toxic effects on the kidney tubules were additionally found in exposed workers. In humans, DNT is absorbed after inhalation and skin contact, and is rapidly metabolized and excreted in urine. Acute toxicity: Animal testing indicates that DNT has relatively low acute toxicity by skin contact and moderately toxic by swallowing. DNT is not considered to irritate the human eye.

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
Base/Neutrals - Mix 2	Not Available	Not Available	Not Available	Not Available	Not Available
methylene chloride	Not Available	Not Available	Not Available	Not Available	Not Available
hexachlorocyclopentadiene	Not Available	Not Available	Not Available	Not Available	Not Available
1,3-dichlorobenzene	Not Available	Not Available	Not Available	Not Available	Not Available
1,2-dichlorobenzene	Not Available	Not Available	Not Available	Not Available	Not Available
isophorone	Not Available	Not Available	Not Available	Not Available	Not Available
nitrobenzene	Not Available	Not Available	Not Available	Not Available	Not Available
azobenzene	Not Available	Not Available	Not Available	Not Available	Not Available
1,4-dichlorobenzene	Not Available	Not Available	Not Available	Not Available	Not Available
hexachlorobenzene	Not Available	Not Available	Not Available	Not Available	Not Available
hexachloroethane	Not Available	Not Available	Not Available	Not Available	Not Available

Continued...

2,6-dinitrotoluene	**Endpoint**	**Test Duration (hr)**	**Species**	**Value**	**Source**
	Not Available	Not Available	Not Available	Not Available	Not Available
hexachlorobutadiene	**Endpoint**	**Test Duration (hr)**	**Species**	**Value**	**Source**
	Not Available	Not Available	Not Available	Not Available	Not Available
2-chloronaphthalene	**Endpoint**	**Test Duration (hr)**	**Species**	**Value**	**Source**
	Not Available	Not Available	Not Available	Not Available	Not Available
2,4-dinitrotoluene	**Endpoint**	**Test Duration (hr)**	**Species**	**Value**	**Source**
	Not Available	Not Available	Not Available	Not Available	Not Available
1,2,4-trichlorobenzene	**Endpoint**	**Test Duration (hr)**	**Species**	**Value**	**Source**
	Not Available	Not Available	Not Available	Not Available	Not Available
Legend:	*Extracted from 1. IUCLID Toxicity Data 2. Europe ECHA Registered Substances - Ecotoxicological Information - Aquatic Toxicity 4. US EPA, Ecotox database - Aquatic Toxicity Data 5. ECETOC Aquatic Hazard Assessment Data 6. NITE (Japan) - Bioconcentration Data 7. METI (Japan) - Bioconcentration Data 8. Vendor Data*				

Harmful 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 wash-waters.
Wastes resulting from use of the product must be disposed of on site or at approved waste sites.
For Methylene Chloride: Log Kow: 1.25; Log Koc: 1.68; Log Kom: 1.44; Henry's atm m3 /mol: 2.68E-03; Henry s Law Constant: 0.002 atm/m3/mol; BCF: 5.
Atmospheric Fate: Methylene chloride is a volatile liquid that tends to evaporate to the atmosphere from water and soil. The main degradation pathway for methylene chloride in air is via reactions with hydroxyl radicals the average atmospheric lifetime is estimated to be 130 days. Because this degradation pathway is relatively slow, methylene chloride may become widely dispersed but, is not likely to accumulate in the atmosphere.
90dioxin
For Polychlorinated Biphenyls (PCBs):
Environmental Limits: Limit for Marine Water: 0.004 ugm/L (equals 0.000004 mg/L). Classification of waste materials contaminated by PCB's are - PCB Materials: PCB content greater than 10%, Scheduled Wastes; PCB content greater than 0.005% = 50 mg/kg or 50 ppm; Non Scheduled Wastes: PCB content greater than 0.0002% = 2 mg/kg or 2ppm; PCB Free Wastes: PCB content less than 0.0002% = 2 mg/kg or 2 ppm.
Environmental Fate: Most PCBs are volatile enough to cycle between the air, water, and soil at environmental temperatures, and atmospheric transport is the most important mechanism for the global movement. Biodegradation in the environment is slow, occurring under both aerobic and anaerobic conditions.
The UK Department of Environment have established that methylene chloride is not a greenhouse gas and the Organisation for Economic Cooperation and Development (OECD) in a Monograph have affirmed that there was no single international view that risk reduction measures are required for the solvent. The Monograph suggests that alternatives may pose a greater risk to the environment.
In the atmosphere methylene chloride degrades by reaction with photochemically produced hydroxy radicals (half-life 6 months). Methylene chloride rapidly volatilises from water and soil to the atmosphere (estimated half-life for volatilisation from water 3-5.6 hours).
DO NOT discharge into sewer or waterways.

Persistence and degradability

Ingredient	Persistence: Water/Soil	Persistence: Air
methylene chloride	LOW (Half-life = 56 days)	HIGH (Half-life = 191 days)
hexachlorocyclopentadiene	LOW (Half-life = 56 days)	Not Available
1,3-dichlorobenzene	HIGH (Half-life = 360 days)	LOW (Half-life = 37.13 days)
1,2-dichlorobenzene	HIGH (Half-life = 360 days)	MEDIUM (Half-life = 63.67 days)
isophorone	LOW (Half-life = 56 days)	LOW (Half-life = 0.13 days)
nitrobenzene	HIGH (Half-life = 394 days)	LOW (Half-life = 0.23 days)
azobenzene	HIGH	HIGH
1,4-dichlorobenzene	HIGH (Half-life = 360 days)	MEDIUM (Half-life = 83.58 days)
hexachlorobenzene	HIGH (Half-life = 4178 days)	HIGH (Half-life = 1563.75 days)
hexachloroethane	HIGH (Half-life = 360 days)	Not Available
2,6-dinitrotoluene	HIGH (Half-life = 360 days)	MEDIUM (Half-life = 118.33 days)
hexachlorobutadiene	HIGH (Half-life = 360 days)	HIGH (Half-life = 1193.75 days)
2-chloronaphthalene	HIGH	HIGH
2,4-dinitrotoluene	HIGH (Half-life = 360 days)	MEDIUM (Half-life = 118.33 days)
1,2,4-trichlorobenzene	HIGH (Half-life = 360 days)	LOW (Half-life = 53.5 days)

Bioaccumulative potential

Ingredient	Bioaccumulation
methylene chloride	LOW (BCF = 40)
hexachlorocyclopentadiene	MEDIUM (BCF = 1634)
1,3-dichlorobenzene	HIGH (BCF = 6918)
1,2-dichlorobenzene	LOW (BCF = 260)
isophorone	LOW (BCF = 7)

Continued...

Ingredient	Bioaccumulation
nitrobenzene	LOW (BCF = 7.7)
azobenzene	MEDIUM (LogKOW = 3.82)
1,4-dichlorobenzene	LOW (BCF = 190)
hexachlorobenzene	HIGH (BCF = 575440)
hexachloroethane	LOW (BCF = 8.5)
2,6-dinitrotoluene	LOW (LogKOW = 2.1757)
hexachlorobutadiene	HIGH (BCF = 9240)
2-chloronaphthalene	LOW (LogKOW = 3.1293)
2,4-dinitrotoluene	HIGH (BCF = 2507)
1,2,4-trichlorobenzene	HIGH (BCF = 4420)

Mobility in soil

Ingredient	Mobility
methylene chloride	LOW (KOC = 23.74)
hexachlorocyclopentadiene	LOW (KOC = 1667)
1,3-dichlorobenzene	LOW (KOC = 434)
1,2-dichlorobenzene	LOW (KOC = 443.1)
isophorone	LOW (KOC = 58.32)
nitrobenzene	LOW (KOC = 190.8)
azobenzene	LOW (KOC = 1954)
1,4-dichlorobenzene	LOW (KOC = 434)
hexachlorobenzene	LOW (KOC = 3380)
hexachloroethane	LOW (KOC = 224.7)
2,6-dinitrotoluene	LOW (KOC = 371.4)
hexachlorobutadiene	LOW (KOC = 993.5)
2-chloronaphthalene	LOW (KOC = 2976)
2,4-dinitrotoluene	LOW (KOC = 363.8)
1,2,4-trichlorobenzene	LOW (KOC = 717.6)

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 SDS 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. ▸ **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. ▸ Due to their environmental persistence and potential health hazards, PCBs, PBBs, dioxins and their derivatives or congeners (including chlorinated diphenyl ethers), cannot be disposed of in landfills or dumped at sea. ▸ Environmentally acceptable method of disposal include high temperature incineration. However this option is costly and uncertain. ▸ Other acceptable disposal technologies include base-catalysed dechlorination in the BCD (Base-Catalyzed Decomposition) Process. ▸ 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	NO
HAZCHEM	Not Applicable

Land transport (ADG): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS

Continued...

Air transport (ICAO-IATA / DGR): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS

Sea transport (IMDG-Code / GGVSee): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS

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

Not Applicable

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

Product name	Group
methylene chloride	Not Available
hexachlorocyclopentadiene	Not Available
1,3-dichlorobenzene	Not Available
1,2-dichlorobenzene	Not Available
isophorone	Not Available
nitrobenzene	Not Available
azobenzene	Not Available
1,4-dichlorobenzene	Not Available
hexachlorobenzene	Not Available
hexachloroethane	Not Available
2,6-dinitrotoluene	Not Available
hexachlorobutadiene	Not Available
2-chloronaphthalene	Not Available
2,4-dinitrotoluene	Not Available
1,2,4-trichlorobenzene	Not Available

Transport in bulk in accordance with the IGC Code

Product name	Ship Type
methylene chloride	Not Available
hexachlorocyclopentadiene	Not Available
1,3-dichlorobenzene	Not Available
1,2-dichlorobenzene	Not Available
isophorone	Not Available
nitrobenzene	Not Available
azobenzene	Not Available
1,4-dichlorobenzene	Not Available
hexachlorobenzene	Not Available
hexachloroethane	Not Available
2,6-dinitrotoluene	Not Available
hexachlorobutadiene	Not Available
2-chloronaphthalene	Not Available
2,4-dinitrotoluene	Not Available
1,2,4-trichlorobenzene	Not Available

SECTION 15 Regulatory information

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

methylene chloride is found on the following regulatory lists

Australia Hazardous Chemical Information System (HCIS) - Hazardous Chemicals
Australia Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP) - Schedule 5
Australian Inventory of Industrial Chemicals (AIIC)
Chemical Footprint Project - Chemicals of High Concern List
International Agency for Research on Cancer (IARC) - Agents Classified by the IARC Monographs
International Agency for Research on Cancer (IARC) - Agents Classified by the IARC Monographs - Group 2A: Probably carcinogenic to humans

hexachlorocyclopentadiene is found on the following regulatory lists

Australia Hazardous Chemical Information System (HCIS) - Hazardous Chemicals
Australian Inventory of Industrial Chemicals (AIIC)

1,3-dichlorobenzene is found on the following regulatory lists

Australia Hazardous Chemical Information System (HCIS) - Hazardous Chemicals
Australian Inventory of Industrial Chemicals (AIIC)
International Agency for Research on Cancer (IARC) - Agents Classified by the IARC Monographs - Not Classified as Carcinogenic

1,2-dichlorobenzene is found on the following regulatory lists

Australia Hazardous Chemical Information System (HCIS) - Hazardous Chemicals
Australian Inventory of Industrial Chemicals (AIIC)
International Agency for Research on Cancer (IARC) - Agents Classified by the IARC Monographs - Not Classified as Carcinogenic

isophorone is found on the following regulatory lists

Continued...

Australia Hazardous Chemical Information System (HCIS) - Hazardous Chemicals
Australia Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP) - Schedule 5
Australian Inventory of Industrial Chemicals (AIIC)
International Agency for Research on Cancer (IARC) - Agents Classified by the IARC Monographs
International Agency for Research on Cancer (IARC) - Agents Classified by the IARC Monographs - Group 2B: Possibly carcinogenic to humans

nitrobenzene is found on the following regulatory lists

Australia Hazardous Chemical Information System (HCIS) - Hazardous Chemicals
Australia Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP) - Schedule 6
Australian Inventory of Industrial Chemicals (AIIC)
Chemical Footprint Project - Chemicals of High Concern List
International Agency for Research on Cancer (IARC) - Agents Classified by the IARC Monographs
International Agency for Research on Cancer (IARC) - Agents Classified by the IARC Monographs - Group 2B: Possibly carcinogenic to humans

azobenzene is found on the following regulatory lists

Australia Hazardous Chemical Information System (HCIS) - Hazardous Chemicals
Australia Model Work Health and Safety Regulations - Hazardous chemicals (other than lead) requiring health monitoring
Australia Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP) - Schedule 6
Australian Inventory of Industrial Chemicals (AIIC)
Chemical Footprint Project - Chemicals of High Concern List
International Agency for Research on Cancer (IARC) - Agents Classified by the IARC Monographs - Not Classified as Carcinogenic
International WHO List of Proposed Occupational Exposure Limit (OEL) Values for Manufactured Nanomaterials (MNMS)

1,4-dichlorobenzene is found on the following regulatory lists

Australia Hazardous Chemical Information System (HCIS) - Hazardous Chemicals
Australia Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP) - Schedule 5
Australian Inventory of Industrial Chemicals (AIIC)
Chemical Footprint Project - Chemicals of High Concern List
International Agency for Research on Cancer (IARC) - Agents Classified by the IARC Monographs
International Agency for Research on Cancer (IARC) - Agents Classified by the IARC Monographs - Group 2B: Possibly carcinogenic to humans
International WHO List of Proposed Occupational Exposure Limit (OEL) Values for Manufactured Nanomaterials (MNMS)

hexachlorobenzene is found on the following regulatory lists

Australia Hazardous Chemical Information System (HCIS) - Hazardous Chemicals
Australia Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP) - Schedule 6
Australia Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP) - Schedule 7
Australian Inventory of Industrial Chemicals (AIIC)
Chemical Footprint Project - Chemicals of High Concern List
International Agency for Research on Cancer (IARC) - Agents Classified by the IARC Monographs
International Agency for Research on Cancer (IARC) - Agents Classified by the IARC Monographs - Group 2B: Possibly carcinogenic to humans
International WHO List of Proposed Occupational Exposure Limit (OEL) Values for Manufactured Nanomaterials (MNMS)
Stockholm Convention on Persistent Organic Pollutants - Annex A - Elimination
Stockholm Convention on Persistent Organic Pollutants (POPs) - Annex C: Unintentional Production
United Nations List of Prior Informed Consent Chemicals
WHO Recommended Classification of Pesticides by Hazard - Table 7. Pesticides subject to the Rotterdam Convention

hexachloroethane is found on the following regulatory lists

Australia Hazardous Chemical Information System (HCIS) - Hazardous Chemicals
Australian Inventory of Industrial Chemicals (AIIC)
Chemical Footprint Project - Chemicals of High Concern List
International Agency for Research on Cancer (IARC) - Agents Classified by the IARC Monographs
International Agency for Research on Cancer (IARC) - Agents Classified by the IARC Monographs - Group 2B: Possibly carcinogenic to humans
International WHO List of Proposed Occupational Exposure Limit (OEL) Values for Manufactured Nanomaterials (MNMS)

2,6-dinitrotoluene is found on the following regulatory lists

Australia Hazardous Chemical Information System (HCIS) - Hazardous Chemicals
Australian Inventory of Industrial Chemicals (AIIC)
Chemical Footprint Project - Chemicals of High Concern List
International Agency for Research on Cancer (IARC) - Agents Classified by the IARC Monographs
International Agency for Research on Cancer (IARC) - Agents Classified by the IARC Monographs - Group 2B: Possibly carcinogenic to humans
International WHO List of Proposed Occupational Exposure Limit (OEL) Values for Manufactured Nanomaterials (MNMS)

hexachlorobutadiene is found on the following regulatory lists

Australian Inventory of Industrial Chemicals (AIIC)
Chemical Footprint Project - Chemicals of High Concern List
International Agency for Research on Cancer (IARC) - Agents Classified by the IARC Monographs - Not Classified as Carcinogenic
Stockholm Convention on Persistent Organic Pollutants - Annex A - Elimination
Stockholm Convention on Persistent Organic Pollutants (POPs) - Annex C: Unintentional Production

2-chloronaphthalene is found on the following regulatory lists

International WHO List of Proposed Occupational Exposure Limit (OEL) Values for Manufactured Nanomaterials (MNMS)

2,4-dinitrotoluene is found on the following regulatory lists

Australia Hazardous Chemical Information System (HCIS) - Hazardous Chemicals
Australian Inventory of Industrial Chemicals (AIIC)
Chemical Footprint Project - Chemicals of High Concern List
International Agency for Research on Cancer (IARC) - Agents Classified by the IARC Monographs
International Agency for Research on Cancer (IARC) - Agents Classified by the IARC Monographs - Group 2B: Possibly carcinogenic to humans

1,2,4-trichlorobenzene is found on the following regulatory lists

Australia Hazardous Chemical Information System (HCIS) - Hazardous Chemicals
Australian Inventory of Industrial Chemicals (AIIC)
Chemical Footprint Project - Chemicals of High Concern List

National Inventory Status

National Inventory	Status
Australia - AIIC / Australia Non-Industrial Use	No (2-chloronaphthalene)

Continued...

National Inventory	Status
Canada - DSL	Yes
Canada - NDSL	No (methylene chloride; hexachlorocyclopentadiene; 1,3-dichlorobenzene; 1,2-dichlorobenzene; isophorone; nitrobenzene; azobenzene; 1,4-dichlorobenzene; hexachlorobenzene; hexachloroethane; 2,6-dinitrotoluene; hexachlorobutadiene; 2-chloronaphthalene; 2,4-dinitrotoluene; 1,2,4-trichlorobenzene)
China - IECSC	No (2-chloronaphthalene)
Europe - EINEC / ELINCS / NLP	Yes
Japan - ENCS	Yes
Korea - KECI	No (azobenzene; hexachlorobenzene; 2-chloronaphthalene)
New Zealand - NZIoC	No (hexachlorobenzene; 2,6-dinitrotoluene; hexachlorobutadiene; 2-chloronaphthalene)
Philippines - PICCS	No (2,6-dinitrotoluene; 2-chloronaphthalene)
USA - TSCA	Yes
Taiwan - TCSI	Yes
Mexico - INSQ	Yes
Vietnam - NCI	Yes
Russia - FBEPH	No (2-chloronaphthalene)
Legend:	*Yes = All CAS declared ingredients are on the inventory* *No = One or more of the CAS listed ingredients are not on the inventory. These ingredients may be exempt or will require registration.*

SECTION 16 Other information

Revision Date	05/07/2023
Initial Date	27/08/2015

SDS Version Summary

Version	Date of Update	Sections Updated
3.4	05/07/2023	Toxicological information - Acute Health (eye), Toxicological information - Acute Health (inhaled), Toxicological information - Acute Health (skin), Toxicological information - Acute Health (swallowed), Physical and chemical properties - Appearance, Toxicological information - Chronic Health, Hazards identification - Classification, Exposure controls / personal protection - Exposure Standard, First Aid measures - First Aid (eye), First Aid measures - First Aid (swallowed), Exposure controls / personal protection - Personal Protection (Respirator)

Other information

Classification of the preparation and its individual components has drawn on official and authoritative sources as well as independent review by the Chemwatch Classification committee using available literature references.
The SDS is a Hazard Communication tool and should be used to assist in the Risk Assessment. Many factors determine whether the reported Hazards are Risks in the workplace or other settings. Risks may be determined by reference to Exposures Scenarios. Scale of use, frequency of use and current or available engineering controls must be considered.

Definitions and abbreviations

PC—TWA: Permissible Concentration-Time Weighted Average
PC—STEL: Permissible Concentration-Short Term Exposure Limit
IARC: International Agency for Research on Cancer
ACGIH: American Conference of Governmental Industrial Hygienists
STEL: Short Term Exposure Limit
TEEL: Temporary Emergency Exposure Limit。
IDLH: Immediately Dangerous to Life or Health Concentrations
ES: Exposure Standard
OSF: Odour Safety Factor
NOAEL :No Observed Adverse Effect Level
LOAEL: Lowest Observed Adverse Effect Level
TLV: Threshold Limit Value
LOD: Limit Of Detection
OTV: Odour Threshold Value
BCF: BioConcentration Factors
BEI: Biological Exposure Index
AIIC: Australian Inventory of Industrial Chemicals
DSL: Domestic Substances List
NDSL: Non-Domestic Substances List
IECSC: Inventory of Existing Chemical Substance in China
EINECS: European INventory of Existing Commercial chemical Substances
ELINCS: European List of Notified Chemical Substances
NLP: No-Longer Polymers
ENCS: Existing and New Chemical Substances Inventory
KECI: Korea Existing Chemicals Inventory
NZIoC: New Zealand Inventory of Chemicals
PICCS: Philippine Inventory of Chemicals and Chemical Substances
TSCA: Toxic Substances Control Act
TCSI: Taiwan Chemical Substance Inventory
INSQ: Inventario Nacional de Sustancias Químicas
NCI: National Chemical Inventory
FBEPH: Russian Register of Potentially Hazardous Chemical and Biological Substances

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end of SDS