

## Semi-Volatile by Capillary Column GC/MS Mix 5

### Novachem Pty Ltd

Chemwatch Hazard Alert Code: 4

Version No: 1.1.2.1

Safety Data Sheet according to WHS Regulations (Hazardous Chemicals) Amendment 2020 and ADG requirements

Issue Date: 28/04/2021

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S.GHS.AUS.EN

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

##### Product Identifier

Product name	Semi-Volatile by Capillary Column GC/MS Mix 5
Chemical Name	Not Applicable
Synonyms	M-8270-05
Proper shipping name	DICHLOROMETHANE
Other means of identification	M-8270-05

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

Relevant identified uses	Laboratory Chemical Reference Material
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##### Details of the supplier of the safety data sheet

Registered company name	Novachem Pty Ltd	Novachem Pty Ltd
Address	25 Crissane Road, Heidelberg West Victoria 3081 Australia	25 Crissane Road, Heidelberg West Victoria 3081 Australia
Telephone	+61384151255	+61384151255
Fax	+61386250088	+61386250088
Website	<a href="http://www.novachem.com.au">www.novachem.com.au</a>	<a href="http://www.novachem.com.au">www.novachem.com.au</a>
Email	novachem@novachem.com.au	novachem@novachem.com.au

##### Emergency telephone number

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

#### SECTION 2 Hazards identification

##### Classification of the substance or mixture

**HAZARDOUS CHEMICAL. DANGEROUS GOODS.** According to the WHS Regulations and the ADG Code.

##### ChemWatch Hazard Ratings

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

Poisons Schedule	Not Applicable
Classification [1]	Eye Irritation Category 2A, Acute Toxicity (Dermal) Category 3, Specific target organ toxicity - single exposure Category 1, Acute Aquatic Hazard Category 3, Flammable Liquid Category 2, Acute Toxicity (Inhalation) Category 3, Specific target organ toxicity - single exposure Category 3 (respiratory tract irritation), Skin Corrosion/Irritation Category 2, Carcinogenicity Category 1A, Reproductive Toxicity Category 1B, Acute Toxicity (Oral) Category 3, Chronic Aquatic 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)	
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## Semi-Volatile by Capillary Column GC/MS Mix 5

Signal word **Danger**

## Hazard statement(s)

H319	Causes serious eye irritation.
H311	Toxic in contact with skin.
H370	Causes damage to organs.
H225	Highly flammable liquid and vapour.
H331	Toxic if inhaled.
H335	May cause respiratory irritation.
H315	Causes skin irritation.
H350	May cause cancer.
H360	May damage fertility or the unborn child.
H301	Toxic if swallowed.
H412	Harmful to aquatic life with long lasting effects.

## 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.
P260	Do not breathe mist/vapours/spray.
P270	Do not eat, drink or smoke when using this product.

## Precautionary statement(s) Response

P301+P310	IF SWALLOWED: Immediately call a POISON CENTER/doctor/physician/first aider.
P308+P311	IF exposed or concerned: Call a POISON CENTER/doctor/physician/first aider.
P330	Rinse mouth.
P370+P378	In case of fire: Use alcohol resistant foam or normal protein foam to extinguish.

## Precautionary statement(s) Storage

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

## Precautionary statement(s) Disposal

P501	Dispose of contents/container to authorised hazardous or special waste collection point in accordance with any local regulation.
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## SECTION 3 Composition / information on ingredients

## Substances

See section below for composition of Mixtures

## Mixtures

CAS No	%[weight]	Name
92-87-5	0.2	<u>benzidine</u>
56-55-3	0.2	<u>benz[a]anthracene</u>
117-81-7	0.2	<u>di-sec-octyl phthalate</u>
85-68-7	0.2	<u>butyl benzyl phthalate</u>
218-01-9	0.2	<u>chrysene</u>
91-94-1	0.2	<u>3,3'-dichlorobenzidine</u>
60-11-7	0.2	<u>C.I. Solvent Yellow 2</u>
129-00-0	0.2	<u>pyrene</u>
75-09-2*	98.4	<u>Dichloromethane</u>
<b>Legend:</b>	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

<b>Eye Contact</b>	<p>If this product comes in contact with the eyes:</p> <ul style="list-style-type: none"> <li>▶ Immediately hold eyelids apart and flush the eye continuously with running water.</li> <li>▶ 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.</li> <li>▶ Continue flushing until advised to stop by the Poisons Information Centre or a doctor, or for at least 15 minutes.</li> <li>▶ Transport to hospital or doctor without delay.</li> <li>▶ Removal of contact lenses after an eye injury should only be undertaken by skilled personnel.</li> </ul>
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<b>Skin Contact</b>	<p>If skin or hair contact occurs:</p> <ul style="list-style-type: none"> <li>▶ Quickly but gently, wipe material off skin with a dry, clean cloth.</li> <li>▶ Immediately remove all contaminated clothing, including footwear.</li> <li>▶ Wash skin and hair with running water. Continue flushing with water until advised to stop by the Poisons Information Centre.</li> <li>▶ Transport to hospital, or doctor.</li> </ul>
<b>Inhalation</b>	<ul style="list-style-type: none"> <li>▶ If fumes or combustion products are inhaled remove from contaminated area.</li> <li>▶ Lay patient down. Keep warm and rested.</li> <li>▶ Prostheses such as false teeth, which may block airway, should be removed, where possible, prior to initiating first aid procedures.</li> <li>▶ 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.</li> <li>▶ Transport to hospital, or doctor, without delay.</li> </ul>
<b>Ingestion</b>	<ul style="list-style-type: none"> <li>▶ <b>IF SWALLOWED, REFER FOR MEDICAL ATTENTION, WHERE POSSIBLE, WITHOUT DELAY.</b></li> <li>▶ For advice, contact a Poisons Information Centre or a doctor.</li> <li>▶ Urgent hospital treatment is likely to be needed.</li> <li>▶ In the mean time, qualified first-aid personnel should treat the patient following observation and employing supportive measures as indicated by the patient's condition.</li> <li>▶ If the services of a medical officer or medical doctor are readily available, the patient should be placed in his/her care and a copy of the SDS should be provided. Further action will be the responsibility of the medical specialist.</li> <li>▶ If medical attention is not available on the worksite or surroundings send the patient to a hospital together with a copy of the SDS.</li> </ul> <p><b>Where medical attention is not immediately available or where the patient is more than 15 minutes from a hospital or unless instructed otherwise:</b></p> <ul style="list-style-type: none"> <li>▶ <b>INDUCE</b> vomiting with fingers down the back of the throat, <b>ONLY IF CONSCIOUS</b>. Lean patient forward or place on left side (head-down position, if possible) to maintain open airway and prevent aspiration.</li> </ul> <p><b>NOTE:</b> Wear a protective glove when inducing vomiting by mechanical means.</p>

**Indication of any immediate medical attention and special treatment needed**

For acute and short term repeated exposures to methanol:

- ▶ Toxicity results from accumulation of formaldehyde/formic acid.
- ▶ Clinical signs are usually limited to CNS, eyes and GI tract Severe metabolic acidosis may produce dyspnea and profound systemic effects which may become intractable. All symptomatic patients should have arterial pH measured. Evaluate airway, breathing and circulation.
- ▶ Stabilise obtunded patients by giving naloxone, glucose and thiamine.
- ▶ Decontaminate with Ipecac or lavage for patients presenting 2 hours post-ingestion. Charcoal does not absorb well; the usefulness of cathartic is not established.
- ▶ Forced diuresis is not effective; haemodialysis is recommended where peak methanol levels exceed 50 mg/dL (this correlates with serum bicarbonate levels below 18 meq/L).
- ▶ Ethanol, maintained at levels between 100 and 150 mg/dL, inhibits formation of toxic metabolites and may be indicated when peak methanol levels exceed 20 mg/dL. An intravenous solution of ethanol in D5W is optimal.
- ▶ Folate, as leucovorin, may increase the oxidative removal of formic acid. 4-methylpyrazole may be an effective adjunct in the treatment. 8-Phenytoin may be preferable to diazepam for controlling seizure.

[Ellenhorn Barceloux: Medical Toxicology]

**BIOLOGICAL EXPOSURE INDEX - BEI**

Determinant	Index	Sampling Time	Comment
1. Methanol in urine	15 mg/l	End of shift	B, NS
2. Formic acid in urine	80 mg/gm creatinine	Before the shift at end of workweek	B, NS

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

NS: Non-specific determinant - observed following exposure to other materials.

**SECTION 5 Firefighting measures****Extinguishing media**

- ▶ Alcohol stable foam.
- ▶ Dry chemical powder.
- ▶ BCF (where regulations permit).
- ▶ Carbon dioxide.

**Special hazards arising from the substrate or mixture**

<b>Fire Incompatibility</b>	▶ Avoid contamination with oxidising agents i.e. nitrates, oxidising acids, chlorine bleaches, pool chlorine etc. as ignition may result
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**Advice for firefighters**

<b>Fire Fighting</b>	<ul style="list-style-type: none"> <li>▶ Alert Fire Brigade and tell them location and nature of hazard.</li> <li>▶ Wear breathing apparatus plus protective gloves in the event of a fire.</li> <li>▶ Prevent, by any means available, spillage from entering drains or water courses.</li> <li>▶ Use fire fighting procedures suitable for surrounding area.</li> </ul>
<b>Fire/Explosion Hazard</b>	<p>carbon dioxide (CO<sub>2</sub>) formaldehyde other pyrolysis products typical of burning organic material.</p> <p><b>Contains low boiling substance:</b> Closed containers may rupture due to pressure buildup under fire conditions. May emit poisonous fumes.</p>
<b>HAZCHEM</b>	2Z

## Semi-Volatile by Capillary Column GC/MS Mix 5

## 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

<b>Minor Spills</b>	<ul style="list-style-type: none"> <li>▶ Remove all ignition sources.</li> <li>▶ Clean up all spills immediately.</li> <li>▶ Avoid breathing vapours and contact with skin and eyes.</li> <li>▶ Control personal contact with the substance, by using protective equipment.</li> </ul>
<b>Major Spills</b>	<ul style="list-style-type: none"> <li>▶ Clear area of personnel and move upwind.</li> <li>▶ Alert Fire Brigade and tell them location and nature of hazard.</li> <li>▶ Wear full body protective clothing with breathing apparatus.</li> <li>▶ Prevent, by all means available, spillage from entering drains or water courses.</li> </ul>

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

## SECTION 7 Handling and storage

## Precautions for safe handling

<b>Safe handling</b>	<p><b>Contains low boiling substance:</b> Storage in sealed containers may result in pressure buildup causing violent rupture of containers not rated appropriately.</p> <ul style="list-style-type: none"> <li>▶ Check for bulging containers.</li> <li>▶ Vent periodically</li> <li>▶ Always release caps or seals slowly to ensure slow dissipation of vapours</li> <li>▶ <b>DO NOT allow clothing wet with material to stay in contact with skin</b></li> </ul>
<b>Other information</b>	<ul style="list-style-type: none"> <li>▶ Store in original containers.</li> <li>▶ Keep containers securely sealed.</li> <li>▶ Store in a cool, dry, well-ventilated area.</li> <li>▶ Store away from incompatible materials and foodstuff containers.</li> </ul>

## Conditions for safe storage, including any incompatibilities

<b>Suitable container</b>	<ul style="list-style-type: none"> <li>▶ Glass container is suitable for laboratory quantities</li> <li>▶ Lined metal can, lined metal pail/ can.</li> <li>▶ Plastic pail.</li> <li>▶ Polyliner drum.</li> <li>▶ Packing as recommended by manufacturer.</li> </ul> <p>For low viscosity materials</p> <ul style="list-style-type: none"> <li>▶ Drums and jerricans must be of the non-removable head type.</li> <li>▶ Where a can is to be used as an inner package, the can must have a screwed enclosure.</li> </ul> <p>For materials with a viscosity of at least 2680 cSt. (23 deg. C) and solids (between 15 C deg. and 40 deg C.):</p> <ul style="list-style-type: none"> <li>▶ Removable head packaging;</li> <li>▶ Cans with friction closures and</li> <li>▶ low pressure tubes and cartridges</li> </ul> <p>may be used.</p> <p>All inner and sole packagings for substances that have been assigned to Packaging Groups I or II on the basis of inhalation toxicity criteria, must be hermetically sealed.</p>
<b>Storage incompatibility</b>	<p><b>Methanol:</b></p> <ul style="list-style-type: none"> <li>▶ reacts violently with strong oxidisers, acetyl bromide, alkyl aluminium salts, beryllium dihydride, bromine, chromic acid, 1-chloro-3,3-difluoro-2-methoxycyclopropene, cyanuric chloride, diethylzinc, isophthaloyl chloride, nitric acid, perchloric acid, potassium-tert-butoxide, potassium sulfur diimide, Raney nickel catalysts, 2,4,6-trichlorotriazine, triethylaluminium, 1,3,3-trifluoro-2-methoxycyclopropene</li> <li>▶ is incompatible with strong acids, strong caustics, alkaline earth and alkali metals, aliphatic amines, acetaldehyde, benzoyl peroxide, 1,3-bis(di-n-cyclopentadienyl iron)-2-propen-1-one, calcium carbide, chloroform, chromic anhydride, chromium trioxide, dialkylzinc, dichlorine oxide, dichloromethane, ethylene oxide, hypochlorous acid, isocyanates, isopropyl chlorocarbonate, lithium tetrahydroaluminate, magnesium, methyl azide, nitrogen dioxide, palladium, pentafluoroguanidine, perchloryl fluoride, phosphorus pentasulfide, phosphorus trioxide, potassium, tangerine oil, triisobutylaluminium</li> <li>▶ mixtures with lead perchlorate, sodium hypochlorite are explosive</li> <li>▶ may react with metallic aluminium at high temperatures</li> <li>▶ slowly corrodes lead and aluminium</li> <li>▶ may generate electrostatic charges, due to low conductivity, on flow or agitation</li> <li>▶ attacks some plastics, rubber and coatings.</li> </ul> <p>Static induced flash fires have happened when filling plastic containers with methanol / water solutions with as low as 30% methanol content</p> <p><b>Phthalates:</b></p> <ul style="list-style-type: none"> <li>▶ react with strong acids, strong oxidisers, permanganates and nitrates</li> <li>▶ attack some form of plastics</li> </ul> <p><b>Alcohols</b></p> <ul style="list-style-type: none"> <li>▶ are incompatible with strong acids, acid chlorides, acid anhydrides, oxidising and reducing agents.</li> <li>▶ reacts, possibly violently, with alkaline metals and alkaline earth metals to produce hydrogen</li> <li>▶ react with strong acids, strong caustics, aliphatic amines, isocyanates, acetaldehyde, benzoyl peroxide, chromic acid, chromium oxide, dialkylzinc, dichlorine oxide, ethylene oxide, hypochlorous acid, isopropyl chlorocarbonate, lithium tetrahydroaluminate, nitrogen dioxide, pentafluoroguanidine, phosphorus halides, phosphorus pentasulfide, tangerine oil, triethylaluminium, triisobutylaluminium</li> <li>▶ should not be heated above 49 deg. C. when in contact with aluminium equipment</li> <li>▶ Avoid storage with reducing agents.</li> </ul>

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## SECTION 8 Exposure controls / personal protection

## Control parameters

## Occupational Exposure Limits (OEL)

## INGREDIENT DATA

Source	Ingredient	Material name	TWA	STEL	Peak	Notes
Australia Exposure Standards	di-sec-octyl phthalate	Di-sec-octyl phthalate	5 mg/m3	10 mg/m3	Not Available	Not Available
Australia Exposure Standards	Dichloromethane	Methylene chloride	50 ppm / 174 mg/m3	Not Available	Not Available	Not Available

## Emergency Limits

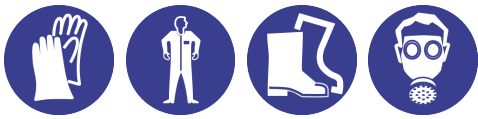
Ingredient	TEEL-1	TEEL-2	TEEL-3
benzidine	0.93 mg/m3	10 mg/m3	61 mg/m3
benz[a]anthracene	0.6 mg/m3	120 mg/m3	700 mg/m3
di-sec-octyl phthalate	10 mg/m3	1,000 mg/m3	6,100 mg/m3
butyl benzyl phthalate	15 mg/m3	77 mg/m3	460 mg/m3
chrysene	0.6 mg/m3	12 mg/m3	69 mg/m3
3,3'-dichlorobenzidine	2.1 ppm	23 ppm	140 ppm
C.I. Solvent Yellow 2	0.6 mg/m3	6.6 mg/m3	40 mg/m3
pyrene	0.15 mg/m3	1.7 mg/m3	110 mg/m3
Dichloromethane	Not Available	Not Available	Not Available

Ingredient	Original IDLH	Revised IDLH
benzidine	Not Available	Not Available
benz[a]anthracene	Not Available	Not Available
di-sec-octyl phthalate	5,000 mg/m3	Not Available
butyl benzyl phthalate	Not Available	Not Available
chrysene	Not Available	Not Available
3,3'-dichlorobenzidine	Not Available	Not Available
C.I. Solvent Yellow 2	Not Available	Not Available
pyrene	Not Available	Not Available
Dichloromethane	2,300 ppm	Not Available

## Occupational Exposure Banding

Ingredient	Occupational Exposure Band Rating	Occupational Exposure Band Limit
benzidine	E	≤ 0.01 mg/m <sup>3</sup>
butyl benzyl phthalate	D	> 0.1 to ≤ 1 ppm
chrysene	D	> 0.01 to ≤ 0.1 mg/m <sup>3</sup>
3,3'-dichlorobenzidine	E	≤ 0.01 mg/m <sup>3</sup>
C.I. Solvent Yellow 2	E	≤ 0.01 mg/m <sup>3</sup>
pyrene	E	≤ 0.01 mg/m <sup>3</sup>
<b>Notes:</b>	<i>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.</i>	

## Exposure controls

<b>Appropriate engineering controls</b>	<p>Engineering controls are used to remove a hazard or place a barrier between the worker and the hazard. Well-designed engineering controls can be highly effective in protecting workers and will typically be independent of worker interactions to provide this high level of protection. The basic types of engineering controls are:</p> <p>Process controls which involve changing the way a job activity or process is done to reduce the risk.</p> <p>Enclosure and/or isolation of emission source which keeps a selected hazard "physically" away from the worker and ventilation that strategically "adds" and "removes" air in the work environment.</p>
<b>Personal protection</b>	
<b>Eye and face protection</b>	<ul style="list-style-type: none"> <li>▶ Safety glasses with side shields.</li> <li>▶ Chemical goggles.</li> <li>▶ 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.</li> </ul>
<b>Skin protection</b>	See Hand protection below
<b>Hands/feet protection</b>	<ul style="list-style-type: none"> <li>▶ Wear chemical protective gloves, e.g. PVC.</li> <li>▶ Wear safety footwear or safety gumboots, e.g. Rubber</li> </ul>

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	<p><b>NOTE:</b></p> <ul style="list-style-type: none"> <li>▶ 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.</li> <li>▶ Contaminated leather items, such as shoes, belts and watch-bands should be removed and destroyed.</li> </ul> <p>The selection of suitable gloves does not only depend on the material, but also on further marks of quality which vary from manufacturer to manufacturer. Where the chemical is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.</p> <p>The exact break through time for substances has to be obtained from the manufacturer of the protective gloves and has to be observed when making a final choice.</p> <p>Personal hygiene is a key element of effective hand care.</p>
<b>Body protection</b>	See Other protection below
<b>Other protection</b>	<ul style="list-style-type: none"> <li>▶ Employees working with confirmed human carcinogens should be provided with, and be required to wear, clean, full body protective clothing (smocks, coveralls, or long-sleeved shirt and pants), shoe covers and gloves prior to entering the regulated area. [AS/NZS ISO 6529:2006 or national equivalent]</li> <li>▶ Employees engaged in handling operations involving carcinogens should be provided with, and required to wear and use half-face filter-type respirators with filters for dusts, mists and fumes, or air purifying canisters or cartridges. A respirator affording higher levels of protection may be substituted. [AS/NZS 1715 or national equivalent]</li> <li>▶ Emergency deluge showers and eyewash fountains, supplied with potable water, should be located near, within sight of, and on the same level with locations where direct exposure is likely.</li> <li>▶ Prior to each exit from an area containing confirmed human carcinogens, employees should be required to remove and leave protective clothing and equipment at the point of exit and at the last exit of the day, to place used clothing and equipment in impervious containers at the point of exit for purposes of decontamination or disposal. The contents of such impervious containers must be identified with suitable labels. For maintenance and decontamination activities, authorized employees entering the area should be provided with and required to wear clean, impervious garments, including gloves, boots and continuous-air supplied hood.</li> <li>▶ Prior to removing protective garments the employee should undergo decontamination and be required to shower upon removal of the garments and hood.</li> </ul>

## Recommended material(s)

## GLOVE SELECTION INDEX

Glove selection is based on a modified presentation of the:

"Forsberg Clothing Performance Index".

The effect(s) of the following substance(s) are taken into account in the **computer-generated** selection:

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Material	CPI
BUTYL	C
BUTYL/NEOPRENE	C
CPE	C
NAT+NEOPR+NITRILE	C
NATURAL RUBBER	C
NATURAL+NEOPRENE	C
NEOPRENE	C
NEOPRENE/NATURAL	C
NITRILE	C
PE/EVAL/PE	C
PVA	C
PVC	C
PVDC/PE/PVDC	C
SARANEX-23	C
SARANEX-23 2-PLY	C
TEFLON	C
VITON	C
VITON/BUTYL	C
VITON/CHLOROBUTYL	C
VITON/NEOPRENE	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 AX 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	AX-AUS	-	AX-PAPR-AUS / Class 1
up to 50 x ES	-	AX-AUS / Class 1	-
up to 100 x ES	-	AX-2	AX-PAPR-2 ^

^ - 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(SO<sub>2</sub>), G = Agricultural chemicals, K = Ammonia(NH<sub>3</sub>), 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

## SECTION 9 Physical and chemical properties

## Information on basic physical and chemical properties

<b>Appearance</b>	The phthalates have a clear syrupy liquid consistency and show low water solubility, high oil solubility, and low volatility. The polar carboxyl group
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	contributes little to the physical properties of the phthalates, except when R and R' are very small (such as ethyl or methyl groups). Phthalates are colourless, odourless liquids produced by reacting phthalic anhydride with an appropriate alcohol (usually 6- to 13-carbon). Phthalate esters are the dialkyl or alkyl aryl esters of phthalic acid (also called 1,2-benzenedicarboxylic acid). When added to plastics, phthalates allow the long polyvinyl molecules to slide against one another. Clear Liquid		
<b>Physical state</b>	Liquid	<b>Relative density (Water= 1)</b>	1.326
<b>Odour</b>	Not Available	<b>Partition coefficient n-octanol / water</b>	Not Available
<b>Odour threshold</b>	Not Available	<b>Auto-ignition temperature (°C)</b>	556
<b>pH (as supplied)</b>	Not Available	<b>Decomposition temperature</b>	Not Available
<b>Melting point / freezing point (°C)</b>	-97	<b>Viscosity (cSt)</b>	Not Available
<b>Initial boiling point and boiling range (°C)</b>	40	<b>Molecular weight (g/mol)</b>	Not Available
<b>Flash point (°C)</b>	Not Available	<b>Taste</b>	Not Available
<b>Evaporation rate</b>	27.5 BuAC = 1	<b>Explosive properties</b>	Not Available
<b>Flammability</b>	Not Available	<b>Oxidising properties</b>	Not Available
<b>Upper Explosive Limit (%)</b>	Not Available	<b>Surface Tension (dyn/cm or mN/m)</b>	Not Available
<b>Lower Explosive Limit (%)</b>	Not Available	<b>Volatile Component (%vol)</b>	Not Available
<b>Vapour pressure (kPa)</b>	47.0628	<b>Gas group</b>	Not Available
<b>Solubility in water</b>	Partly miscible	<b>pH as a solution (1%)</b>	Not Available
<b>Vapour density (Air = 1)</b>	Not Available	<b>VOC g/L</b>	Not Available

## SECTION 10 Stability and reactivity

<b>Reactivity</b>	See section 7
<b>Chemical stability</b>	<ul style="list-style-type: none"> <li>▶ Unstable in the presence of incompatible materials.</li> <li>▶ Product is considered stable.</li> <li>▶ Hazardous polymerisation will not occur.</li> </ul>
<b>Possibility of hazardous reactions</b>	See section 7
<b>Conditions to avoid</b>	See section 7
<b>Incompatible materials</b>	See section 7
<b>Hazardous decomposition products</b>	See section 5

## SECTION 11 Toxicological information

## Information on toxicological effects

<b>Inhaled</b>	<p>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. There is strong evidence to suggest that this material can cause, if inhaled once, serious, irreversible damage of organs.</p> <p>Minor but regular methanol exposures may effect the central nervous system, optic nerves and retinae. Symptoms may be delayed, with headache, fatigue, nausea, blurring of vision and double vision. Continued or severe exposures may cause damage to optic nerves, which may become severe with permanent visual impairment even blindness resulting.</p> <p><b>WARNING:</b> Methanol is only slowly eliminated from the body and should be regarded as a cumulative poison which cannot be made non-harmful [CCINFO]</p>
<b>Ingestion</b>	<p>Strong evidence exists that exposure to the material may cause irreversible damage (other than cancer, mutations and birth defects) following a single exposure by swallowing.</p> <p>The toxicity of phthalates is not excessive due to slow oral absorption and metabolism. Absorption is affected by fat in the diet. Repeated doses can cause cumulative toxic effects, and symptoms include an enlarged liver which often reverses if exposure is maintained. Carbohydrate metabolism is disrupted, and cholesterol and triglyceride levels in the blood falls.</p> <p><b>Toxic effects</b> may result from the accidental ingestion of the material; animal experiments indicate that ingestion of less than 40 gram may be fatal or may produce serious damage to the health of the individual.</p>
<b>Skin Contact</b>	<p>This material can cause inflammation of the skin on contact in some persons.</p> <p>There is strong evidence to suggest that this material, on a single contact with skin, can cause serious, irreversible damage of organs. The material may accentuate any pre-existing dermatitis condition</p> <p>Open cuts, abraded or irritated skin should not be exposed to this material</p> <p>Entry into the blood-stream, through, for example, cuts, abrasions or lesions, may produce systemic injury with harmful effects. Examine the skin prior to the use of the material and ensure that any external damage is suitably protected.</p> <p>Skin contact with the material may produce toxic effects; systemic effects may result following absorption.</p>
<b>Eye</b>	This material can cause eye irritation and damage in some persons.
<b>Chronic</b>	<p>Long-term exposure to respiratory irritants may result in airways disease, involving difficulty breathing and related whole-body problems.</p> <p>Skin contact with the material is more likely to cause a sensitisation reaction in some persons compared to the general population.</p> <p>There is sufficient evidence to suggest that this material directly causes cancer in humans.</p>



## Semi-Volatile by Capillary Column GC/MS Mix 5

	<p>Ample evidence exists from experimentation that reduced human fertility is directly caused by exposure to the material.</p> <p>Ample evidence exists, from results in experimentation, that developmental disorders are directly caused by human exposure to the material.</p> <p>Substance accumulation, in the human body, may occur and may cause some concern following repeated or long-term occupational exposure.</p> <p>Exposure to phthalates over years leads to pain, numbness and spasms in the hands and feet. Many people have developed multiple disorders in the nervous system and the balancing system.</p> <p>Polycyclic aromatic hydrocarbons are found in a number of materials such as coal tar, tobacco smoke, petroleum and air pollution. Some substituted derivatives have been identified as extremely liable to cause cancer, especially that of the lung and genito-urinary tract.</p> <p>When administered in the diet, 3,3'-dichlorobenzidine induced hepatomas in male mice, increased the incidences of granulocytic leukemia and Zymbal gland carcinomas in male rats and mammary adenocarcinomas in rats of both sexes, induced transitional cell carcinomas of the urinary bladder in hamsters and female dogs and hepatocellular carcinomas in female dogs.</p> <p>Transplacental exposure increased the incidences of lymphoid leukemia in mice. In three retrospective epidemiological studies, no urinary bladder tumors were reported in men occupationally exposed to 3,3'-dichlorobenzidine.</p> <p>Exposure to benzidine-based dyes may cause death from bladder cancer. Inhalation or absorption through the skin has been recognised as a cause for these tumours with 14 times higher risk probability compared to the unexposed. Bile duct, mammary cell and liver cell cancers have all been reported in experimental animals.</p> <p>4,4'-dihydroxyphenyl oxide may have effects similar to female sex hormones.</p>	
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Semi-Volatile by Capillary Column GC/MS Mix 5	TOXICITY	IRRITATION
	Not Available	Not Available
benzidine	TOXICITY	IRRITATION
	Oral(Mouse) LD50; 214 mg/kg <sup>[2]</sup>	Not Available
benz[a]anthracene	TOXICITY	IRRITATION
	Not Available	Not Available
di-sec-octyl phthalate	TOXICITY	IRRITATION
	dermal (rat) LD50: 250 mg/kg <sup>[2]</sup>	Eye (rabbit): 500 mg/24h mild
	Inhalation(Rat) LC50; >10.62 mg/L4h <sup>[2]</sup>	Eye: adverse effect observed (irritating) <sup>[1]</sup>
	Oral(Mouse) LD50; >9860 mg/kg <sup>[2]</sup>	Skin (rabbit): 500 mg/24h mild
		Skin: adverse effect observed (irritating) <sup>[1]</sup>
butyl benzyl phthalate	TOXICITY	IRRITATION
	dermal (rat) LD50: 6700 mg/kg <sup>[2]</sup>	Not Available
	Inhalation(Rat) LC50; >6.7 mg/L4h <sup>[2]</sup>	
	Oral(Rat) LD50; 2330 mg/kg <sup>[2]</sup>	
chrysene	TOXICITY	IRRITATION
	Not Available	Not Available
3,3'-dichlorobenzidine	TOXICITY	IRRITATION
	dermal (rat) LD50: >8000 mg/kg <sup>[2]</sup>	Not Available
C.I. Solvent Yellow 2	TOXICITY	IRRITATION
	Oral(Rat) LD50; 200 mg/kg <sup>[2]</sup>	Not Available
pyrene	TOXICITY	IRRITATION
	Oral(Mouse) LD50; 514 mg/kg <sup>[2]</sup>	Skin (rabbit): 500 mg/24h - mild
Dichloromethane	TOXICITY	IRRITATION
	dermal (rat) LD50: >2000 mg/kg <sup>[1]</sup>	Not Available
	Inhalation(Rat) LC50; 76 mg/L4h <sup>[2]</sup>	
	Oral(Rat) LD50; >2000 mg/kg <sup>[2]</sup>	
<b>Legend:</b>	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	

BENZIDINE	<p><b>WARNING:</b> This substance has been classified by the IARC as Group 1: <b>CARCINOGENIC TO HUMANS.</b></p> <p>Tenth Annual Report on Carcinogens: Substance known to be Carcinogenic  <i>[National Toxicology Program: U.S. Dep. of Health and Human Services 2002]</i></p>
DI-SEC-OCTYL PHTHALATE	<p>Di-sec-octyl phthalate (DEHP) in animal testing has not been shown to be acutely toxic when swallowed. Very high doses may cause reduced growth and increased liver and kidney weights. In animals, DEHP does not seem to affect fertility; however it may cause birth defects (notably of the bone) and mutations. Workers exposed to phthalate vapours have noted pain, numbness and limb spasms after years of exposure, with inflammation of nerves and poor balance.</p> <p>The material may be irritating to the eye, with prolonged contact causing inflammation. Repeated or prolonged exposure to irritants may produce conjunctivitis.</p> <p>Available data indicate that phthalate esters are minimally toxic by swallowing, inhalation and skin contact. Repeated exposure may result in weight gain, liver enlargement and induction of liver enzymes. They may also cause shrinking of the testicles and other structural malformations. They may reduce male and female fertility and number of live births, according to animal testing.</p>



## Semi-Volatile by Capillary Column GC/MS Mix 5

	Oral (rat) NOAEL: 28.9-36.1 mg/kg/day Gastrointestinal changes, respiratory system changes, somnolence, haemorrhage, necrotic changes in GI tract, lowered blood pressure, liver, endocrine tumours, foetotoxicity, paternal effects, maternal effects, specific developmental abnormalities (hepatobiliary system, musculoskeletal system, cardiovascular system, urogenital system, central nervous system, eye/ear), foetolethality recorded.		
<b>BUTYL BENZYL PHTHALATE</b>	For benzyl butyl phthalate (BBP): Repeat dose toxicity: Animal studies show that BBP may affect the pancreas, kidney, liver and blood, and the testes at higher doses. Reproductive toxicity and birth defects: Animal studies suggest that BBP may reduce fertility. Developmental toxicity: BBP causes significant developmental effects but only at levels that would be toxic to the mother. Cancer-causing potential: Animal studies show that there is some evidence of cancer-causing potential for BBP. Genetic toxicity: Animal studies results are conflicting, with some negative results and others showing that BBP can cause chromosomal aberrations. Reproductive effector in rats.		
<b>CHRYSENE</b>	Target organs in include skin (tumours at site of application).		
<b>C.I. SOLVENT YELLOW 2</b>	Detailed analysis of molecular structure indicates that the azo colourant can split off cancer-causing arylamines. The azo linkage, a double bond between two nitrogen atoms, is considered the most unstable part of an azo dye.		
<b>PYRENE</b>	Conjunctival irritation, excitement and muscle contraction recorded.		
<b>Semi-Volatile by Capillary Column GC/MS Mix 5 &amp; PYRENE</b>	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.		
<b>Semi-Volatile by Capillary Column GC/MS Mix 5 &amp; 3,3'-DICHLOROBENZIDINE</b>	The following information refers to contact allergens as a group and may not be specific to this product. Contact allergies quickly manifest themselves as contact eczema, more rarely as urticaria or Quincke's oedema. The pathogenesis of contact eczema involves a cell-mediated (T lymphocytes) immune reaction of the delayed type. Other allergic skin reactions, e.g. contact urticaria, involve antibody-mediated immune reactions. The significance of the contact allergen is not simply determined by its sensitisation potential: the distribution of the substance and the opportunities for contact with it are equally important. For 3,3'-dichlorobenzidine: Various tumours developed after oral or subcutaneous administration of 3,3'-dichlorobenzidine to mice, rats, hamsters and dogs. Tumours have not yet been identified in persons exposed to the substance alone. The substance can be absorbed through the skin in dangerous quantities. Increases in temperature and relative humidity promote dermal absorption. Upper respiratory infection and sore throat were listed among several principal reasons for visits to a company's medical clinic by workers handling 3,3'-dichlorobenzidine dihydrochloride. However, there is no conclusive evidence that these effects were due to inhalation of 3,3'-dichlorobenzidine dihydrochloride. No adverse health effects were observed in male rats exposed by inhalation to 3,3'- dichlorobenzidine free base (23,700 mg/m3) 2 hours per day for 7 days .		
<b>Semi-Volatile by Capillary Column GC/MS Mix 5 &amp; DI-SEC-OCTYL PHTHALATE &amp; BUTYL BENZYL PHTHALATE</b>	The material may produce peroxisome proliferation. Peroxisomes are single, membrane limited organelles in the cytoplasm that are found in the cells of animals, plants, fungi, and protozoa.		
<b>Semi-Volatile by Capillary Column GC/MS Mix 5 &amp; BENZ[A]ANTHRACENE &amp; DI-SEC-OCTYL PHTHALATE &amp; 3,3'-DICHLOROBENZIDINE &amp; C.I. SOLVENT YELLOW 2</b>	Tenth Annual Report on Carcinogens: Substance anticipated to be Carcinogen [National Toxicology Program: U.S. Dep. of Health & Human Services 2002]		
<b>BENZ[A]ANTHRACENE &amp; DI-SEC-OCTYL PHTHALATE &amp; CHRYSENE &amp; C.I. SOLVENT YELLOW 2</b>	<b>WARNING:</b> This substance has been classified by the IARC as Group 2B: Possibly Carcinogenic to Humans.		
<b>DI-SEC-OCTYL PHTHALATE &amp; PYRENE</b>	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.		
<b>DI-SEC-OCTYL PHTHALATE &amp; CHRYSENE &amp; PYRENE</b>	<b>NOTE:</b> Substance has been shown to be mutagenic in at least one assay, or belongs to a family of chemicals producing damage or change to cellular DNA.		
<b>BUTYL BENZYL PHTHALATE &amp; C.I. SOLVENT YELLOW 2</b>	Exposure to the material for prolonged periods may cause physical defects in the developing embryo (teratogenesis).		
<b>BUTYL BENZYL PHTHALATE &amp; PYRENE</b>	The substance is classified by IARC as Group 3: <b>NOT</b> classifiable as to its carcinogenicity to humans. Evidence of carcinogenicity may be inadequate or limited in animal testing.		
<b>Acute Toxicity</b>	✓	<b>Carcinogenicity</b>	✓
<b>Skin Irritation/Corrosion</b>	✓	<b>Reproductivity</b>	✓
<b>Serious Eye Damage/Irritation</b>	✓	<b>STOT - Single Exposure</b>	✓
<b>Respiratory or Skin sensitisation</b>	✗	<b>STOT - Repeated Exposure</b>	✗
<b>Mutagenicity</b>	✗	<b>Aspiration Hazard</b>	✗

**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
<b>Semi-Volatile by Capillary Column GC/MS Mix 5</b>	Not Available	Not Available	Not Available	Not Available	Not Available

Continued...

## Semi-Volatile by Capillary Column GC/MS Mix 5

	Endpoint	Test Duration (hr)	Species	Value	Source
	benzidine	EC50(ECx)	48h	Crustacea	0.2-1.5mg/l
LC50		96h	Fish	2.5mg/l	4
EC50		48h	Crustacea	0.2-1.5mg/l	4
benz[a]anthracene	Endpoint	Test Duration (hr)	Species	Value	Source
	EC50(ECx)	48h	Crustacea	0.001mg/L	4
	EC50	48h	Crustacea	0.001mg/L	4
di-sec-octyl phthalate	Endpoint	Test Duration (hr)	Species	Value	Source
	ErC50	72h	Algae or other aquatic plants	>130mg/l	1
	BCF	1344h	Fish	<0.7-29.7	7
	NOEC(ECx)	1680h	Fish	0.007mg/l	1
	EC50	48h	Crustacea	>0.16mg/l	1
	EC50	72h	Algae or other aquatic plants	>130mg/l	1
	LC50	96h	Fish	>0.003mg/L	4
	EC50	96h	Algae or other aquatic plants	>0.1mg/l	1
butyl benzyl phthalate	Endpoint	Test Duration (hr)	Species	Value	Source
	NOEC(ECx)	72h	Algae or other aquatic plants	0.1 mg/l	1
	EC50	96h	Algae or other aquatic plants	>2.69mg/l	1
	EC50	72h	Algae or other aquatic plants	0.5mg/l	1
	LC50	96h	Fish	>0.009mg/L	4
	EC50	48h	Crustacea	0.97mg/l	1
chrysene	Endpoint	Test Duration (hr)	Species	Value	Source
NOEC(ECx)	1.5h	Fish	2.283mg/L	4	
3,3'-dichlorobenzidine	Endpoint	Test Duration (hr)	Species	Value	Source
	BCF	1344h	Fish	43-169	7
	NOEC(ECx)	72h	Algae or other aquatic plants	0.32mg/l	1
	EC50	72h	Algae or other aquatic plants	2.1mg/l	1
	LC50	96h	Fish	2.2mg/l	1
	EC50	48h	Crustacea	2.47mg/l	1
C.I. Solvent Yellow 2	Endpoint	Test Duration (hr)	Species	Value	Source
Not Available	Not Available	Not Available	Not Available	Not Available	
pyrene	Endpoint	Test Duration (hr)	Species	Value	Source
	EC50(ECx)	48h	Crustacea	0.004mg/L	4
	EC50	48h	Crustacea	0.004mg/L	4
Dichloromethane	Endpoint	Test Duration (hr)	Species	Value	Source
	BCF	1008h	Fish	2-5.4	7
	NOEC(ECx)	96h	Crustacea	0.147mg/L	4
	EC50	96h	Algae or other aquatic plants	0.98mg/l	4
	EC50	72h	Algae or other aquatic plants	>2.3mg/L	4
	LC50	96h	Fish	0.973-1.32mg/L	4
	EC50	48h	Crustacea	150-218mg/l	4
<b>Legend:</b>	Extracted from 1. IUCLID Toxicity Data 2. Europe ECHA Registered Substances - Ecotoxicological Information - Aquatic Toxicity 3. EPIWIN Suite V3.12 (QSAR) - Aquatic Toxicity Data (Estimated) 4. US EPA, Ecotox database - Aquatic Toxicity Data 5. ECETOC Aquatic Hazard Assessment Data 6. NITE (Japan) - Bioconcentration Data 7. METI (Japan) - Bioconcentration Data 8. Vendor Data				

Very 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 wash-waters.

Wastes resulting from use of the product must be disposed of on site or at approved waste sites.

for 3,3'-dichlorobenzidine:

Environmental Fate: Because 3,3'-dichlorobenzidine adsorbs to airborne dust particles or binds to particulate matter, it is subject to dispersion, gravitational settling, and wash-out by rain. In water, 3,3'-dichlorobenzidine is slightly soluble, does not volatilise or hydrolyse, and may slowly oxidise in solution. 3,3'-Dichlorobenzidine may be strongly adsorbed to soils, clays, and sediments, depending on the pH of the soil-water system, and it may be strongly bound by soil organic matter. Although earlier research indicates that the compound does not appear to be readily biodegradable in soil or waste water sludges, more recent work indicates that more than 80% of 3,3'-dichlorobenzidine may be microbially degraded to benzidine under anaerobic conditions.

## Semi-Volatile by Capillary Column GC/MS Mix 5

For benzidine:

Environmental Fate:

Terrestrial Fate: Benzidine is expected to be immobile in soil. Benzidine is a weak base with 2 amine functional groups having pKa values of 4.3 and 3.3. These values indicate that benzidine can partially exist in the protonated form under acidic conditions. Volatilisation of the neutral species of benzidine from moist soil surfaces is not expected to be an important fate process, and benzidine is not expected to volatilise from dry soil surfaces.

For Polycyclic Aromatic Hydrocarbons (PAH's):

Environmental Fate: A general rule for biodegradation of PAHs is that parent compounds tend to degrade faster than alkylated analogs. Less is known about the biodegradability of resins and asphaltene, but the current knowledge suggests these are not very biodegradable and will persist in the environment for a long time. The more hydrophobic a compound, the greater the partitioning to non-aqueous phases.

Atmospheric Fate: PAHs travel through the atmosphere as a gas or attached to dust particles.

For Phthalate Esters:

Terrestrial Fate: Phthalate esters have been observed to be broken down by a wide range of bacteria. Biodegradation is, therefore, expected to be the dominant fate in surface soils and sediments.

Little information is available on the fate of phthalate esters in soil, even though the primary point of entry, (landfills). The migration of phthalate esters out of plastics is slow.

For Methanol: Log Kow: -0.82 to -0.66; Koc: 1; Henry's Law Constant: 4.55x10<sup>-6</sup> atm-cu m/mole; Vapor Pressure: 127 mm Hg; BCF: < 10.

Atmospheric Fate: Methanol is expected to exist solely as a vapor in the ambient atmosphere. Vapor-phase methanol is broken down in the atmosphere by reactions with hydroxyl radicals; the half-life for this reaction in air is estimated to be 17 days.

Terrestrial Fate: Methanol is expected to have very high mobility in soil.

**DO NOT discharge into sewer or waterways.**

### Persistence and degradability

Ingredient	Persistence: Water/Soil	Persistence: Air
benzidine	LOW (Half-life = 16 days)	LOW (Half-life = 0.13 days)
benz[a]anthracene	HIGH (Half-life = 1360 days)	LOW (Half-life = 0.33 days)
di-sec-octyl phthalate	HIGH (Half-life = 389 days)	LOW (Half-life = 1.21 days)
butyl benzyl phthalate	HIGH (Half-life = 180 days)	LOW (Half-life = 2.5 days)
chrysene	HIGH (Half-life = 2000 days)	LOW (Half-life = 0.33 days)
3,3'-dichlorobenzidine	HIGH (Half-life = 360 days)	LOW (Half-life = 0.38 days)
C.I. Solvent Yellow 2	LOW (Half-life = 56 days)	LOW (Half-life = 0.12 days)
pyrene	HIGH (Half-life = 3800 days)	LOW (Half-life = 0.33 days)
Dichloromethane	LOW (Half-life = 56 days)	HIGH (Half-life = 191 days)

### Bioaccumulative potential

Ingredient	Bioaccumulation
benzidine	LOW (LogKOW = 1.34)
benz[a]anthracene	HIGH (LogKOW = 5.76)
di-sec-octyl phthalate	HIGH (BCF = 24500)
butyl benzyl phthalate	MEDIUM (BCF = 663)
chrysene	HIGH (LogKOW = 5.81)
3,3'-dichlorobenzidine	MEDIUM (BCF = 940)
C.I. Solvent Yellow 2	HIGH (LogKOW = 4.58)
pyrene	HIGH (LogKOW = 4.88)
Dichloromethane	LOW (BCF = 40)

### Mobility in soil

Ingredient	Mobility
benzidine	LOW (KOC = 2740)
benz[a]anthracene	LOW (KOC = 231300)
di-sec-octyl phthalate	LOW (KOC = 165400)
butyl benzyl phthalate	LOW (KOC = 9359)
chrysene	LOW (KOC = 236100)
3,3'-dichlorobenzidine	LOW (KOC = 7489)
C.I. Solvent Yellow 2	LOW (KOC = 910.3)
pyrene	LOW (KOC = 69410)
Dichloromethane	LOW (KOC = 23.74)

## 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.

## Semi-Volatile by Capillary Column GC/MS Mix 5

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.
- ▶ 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	2Z

## Land transport (ADG)

UN number	1593	
UN proper shipping name	DICHLOROMETHANE	
Transport hazard class(es)	Class	6.1
	Subrisk	Not Applicable
Packing group	III	
Environmental hazard	Not Applicable	
Special precautions for user	Special provisions	Not Applicable
	Limited quantity	5 L

## Air transport (ICAO-IATA / DGR)

UN number	1593	
UN proper shipping name	Dichloromethane	
Transport hazard class(es)	ICAO/IATA Class	6.1
	ICAO / IATA Subrisk	Not Applicable
	ERG Code	6L
Packing group	III	
Environmental hazard	Not Applicable	
Special precautions for user	Special provisions	Not Applicable
	Cargo Only Packing Instructions	663
	Cargo Only Maximum Qty / Pack	220 L
	Passenger and Cargo Packing Instructions	655
	Passenger and Cargo Maximum Qty / Pack	60 L
	Passenger and Cargo Limited Quantity Packing Instructions	Y642
	Passenger and Cargo Limited Maximum Qty / Pack	2 L

## Sea transport (IMDG-Code / GGVSee)

UN number	1593	
UN proper shipping name	DICHLOROMETHANE	
Transport hazard class(es)	IMDG Class	6.1
	IMDG Subrisk	Not Applicable
Packing group	III	
Environmental hazard	Not Applicable	

## Semi-Volatile by Capillary Column GC/MS Mix 5

<b>Special precautions for user</b>	EMS Number	F-A , S-A
	Special provisions	Not Applicable
	Limited Quantities	5 L

**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
benzidine	Not Available
benz[a]anthracene	Not Available
di-sec-octyl phthalate	Not Available
butyl benzyl phthalate	Not Available
chrysene	Not Available
3,3'-dichlorobenzidine	Not Available
C.I. Solvent Yellow 2	Not Available
pyrene	Not Available
Dichloromethane	Not Available

**Transport in bulk in accordance with the ICG Code**

Product name	Ship Type
benzidine	Not Available
benz[a]anthracene	Not Available
di-sec-octyl phthalate	Not Available
butyl benzyl phthalate	Not Available
chrysene	Not Available
3,3'-dichlorobenzidine	Not Available
C.I. Solvent Yellow 2	Not Available
pyrene	Not Available
Dichloromethane	Not Available

**SECTION 15 Regulatory information****Safety, health and environmental regulations / legislation specific for the substance or mixture****benzidine is found on the following regulatory lists**

Australia - New South Wales Work Health and Safety Regulation - Prohibited Carcinogens
Australia - Northern Territories Work Health and Safety National Uniform Legislation Regulations- Prohibited carcinogens
Australia - Queensland Work Health and Safety Regulation - Prohibited carcinogens
Australia - South Australia - Work Health and Safety Regulations - Prohibited carcinogens
Australia - Tasmania - Work Health and Safety Regulations - Prohibited carcinogens
Australia - Western Australia Carcinogenic substances to be used only for bona fide research
Australia Hazardous Chemical Information System (HCIS) - Hazardous Chemicals

Australia Model Work Health and Safety Regulations - Prohibited carcinogens
Australia Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP) - Schedule 5
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 1: Carcinogenic to humans

**benz[a]anthracene 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
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

**di-sec-octyl phthalate 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

**butyl benzyl phthalate 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

**chrysene is found on the following regulatory lists**

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Australia Hazardous Chemical Information System (HCIS) - Hazardous Chemicals  
 Australia Model Work Health and Safety Regulations - Hazardous chemicals (other than lead) requiring health monitoring  
 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

**3,3'-dichlorobenzidine is found on the following regulatory lists**

Australia - New South Wales Work Health and Safety Regulation - Prohibited Carcinogens  
 Australia - New South Wales Work Health and Safety Regulation - Restricted carcinogens  
 Australia - Northern Territories Work Health and Safety National Uniform Legislation Regulations- Prohibited carcinogens  
 Australia - Northern Territories Work Health and Safety National Uniform Legislation Regulations- Restricted carcinogens  
 Australia - Queensland Work Health and Safety Regulation - Prohibited carcinogens  
 Australia - Queensland Work Health and Safety Regulation - Restricted Carcinogens  
 Australia - South Australia - Work Health and Safety Regulations - Prohibited carcinogens  
 Australia - South Australia - Work Health and Safety Regulations - Restricted carcinogens  
 Australia - Tasmania - Work Health and Safety Regulations - Prohibited carcinogens  
 Australia - Tasmania - Work Health and Safety Regulations - Restricted carcinogens  
 Australia - Western Australia Carcinogenic substances to be used only for bona fide research

Australia - Western Australia Carcinogenic substances to be used only for purposes approved by the Commissioner  
 Australia Hazardous Chemical Information System (HCIS) - Hazardous Chemicals  
 Australia Model Work Health and Safety Regulations - Prohibited carcinogens  
 Australia Model Work Health and Safety Regulations - Restricted carcinogens  
 Australia Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP) - Schedule 5  
 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 1: Carcinogenic to humans  
 International Agency for Research on Cancer (IARC) - Agents Classified by the IARC Monographs - Group 2B: Possibly carcinogenic to humans

**C.I. Solvent Yellow 2 is found on the following regulatory lists**

Australia - New South Wales Work Health and Safety Regulation - Prohibited Carcinogens  
 Australia - Northern Territories Work Health and Safety National Uniform Legislation Regulations- Prohibited carcinogens  
 Australia - Queensland Work Health and Safety Regulation - Prohibited carcinogens  
 Australia - South Australia - Work Health and Safety Regulations - Prohibited carcinogens  
 Australia - Tasmania - Work Health and Safety Regulations - Prohibited carcinogens  
 Australia - Western Australia Carcinogenic substances to be used only for bona fide research  
 Australia Model Work Health and Safety Regulations - Prohibited carcinogens

Australia Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP) - Schedule 5  
 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

**pyrene is found on the following regulatory lists**

Australia Model Work Health and Safety Regulations - Hazardous chemicals (other than lead) requiring health monitoring  
 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

**Dichloromethane 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

**National Inventory Status**

National Inventory	Status
Australia - AIIC / Australia Non-Industrial Use	Yes
Canada - DSL	No (benzidine; benz[a]anthracene; 3,3'-dichlorobenzidine)
Canada - NDSL	No (benzidine; di-sec-octyl phthalate; butyl benzyl phthalate; chrysene; C.I. Solvent Yellow 2; pyrene; Dichloromethane)
China - IECSC	No (chrysene)
Europe - EINEC / ELINCS / NLP	Yes
Japan - ENCS	No (benzidine; benz[a]anthracene; chrysene)
Korea - KECI	No (benzidine; benz[a]anthracene)
New Zealand - NZIoC	Yes
Philippines - PICCS	No (benz[a]anthracene; chrysene)
USA - TSCA	Yes
Taiwan - TCSI	Yes
Mexico - INSQ	No (benz[a]anthracene; chrysene)
Vietnam - NCI	Yes
Russia - FBEPH	No (chrysene)
<b>Legend:</b>	Yes = All CAS declared ingredients are on the inventory No = One or more of the CAS listed ingredients are not on the inventory and are not exempt from listing(see specific ingredients in brackets)

**SECTION 16 Other information**

Revision Date	28/04/2021
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## Semi-Volatile by Capillary Column GC/MS Mix 5

<b>Initial Date</b>	13/03/2021
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**SDS Version Summary**

Version	Date of Update	Sections Updated
0.0.2.1	26/04/2021	Regulation Change

**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  
AIC: 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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