## **Septone Contact Adhesive**

ITW (ITW AAMTech)

Chemwatch: **4888-59** Version No: **2.1.1.1** 

Safety Data Sheet according to WHS and ADG requirements

Chemwatch Hazard Alert Code: 3

Issue Date: 18/03/2014 Print Date: 18/03/2014 Initial Date: Not Available S.GHS.AUS.EN

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

Product Identifier	
Product name	Septone Contact Adhesive
Chemical Name	Not Applicable
Synonyms	Product Codes: AMCA250, AMCA500, AMCA1, AMCA4
Proper shipping name	ADHESIVES containing flammable liquid
Chemical formula	Not Applicable
Other means of identification	Not Available
CAS number	Not Applicable

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

Relevant identified uses Brushable contact adhesive.

### Details of the supplier of the safety data sheet

Registered company name	ITW (ITW AAMTech)		
Address	100 Hassall Street Wetherill Park 2164 NSW Australia		
Telephone	+61 2 9828 0900		
Fax	+61 2 9725 4698	I I	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
Website			
Email	general@septone.com.au		

#### Emergency telephone number

Association / Organisation	Not Available		
Emergency telephone numbers	1800 039 008 (24 hours)		
Other emergency telephone numbers	+61 3 9573 3112 (24 hours)		

#### **SECTION 2 HAZARDS IDENTIFICATION**

#### Classification of the substance or mixture

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

Poisons Schedule	S5
GHS Classification [1]	Flammable Liquid Category 2, Eye Irrit. 2, Reproductive Toxicity Category 2, STOT - SE (Resp. Irr.) Category 3, STOT - SE (Narcosis) Category 3, STOT - RE Category 2, Aspiration Hazard Category 1, Chronic Aquatic Hazard Category 3
Legend:	1. Classified by Chemwatch; 2. Classification drawn from HSIS ; 3. Classification drawn from EC Directive 1272/2008 - Annex VI

### Label elements

**GHS** label elements







SIGNAL WORD DANGER

#### Hazard statement(s)

` '	
H225	Highly flammable liquid and vapour
H319	Causes serious eye irritation
H361	Suspected of damaging fertility or the unborn child
H335	May cause respiratory irritation
H336	May cause drowsiness or dizziness

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Н373	May cause damage to organs through prolonged or repeated exposure
H304	May be fatal if swallowed and enters airways
H412	Harmful to aquatic life with long lasting effects
AUH066	Repeated exposure may cause skin dryness and cracking

#### 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 dust/fume/gas/mist/vapours/spray.
P271	Use only outdoors or in a well-ventilated area.
P280	Wear protective gloves/protective clothing/eye protection/face protection.
P273	Avoid release to the environment.
P240	Ground/bond container and receiving equipment.
P241	Use explosion-proof electrical/ventilating/lighting/intrinsically safe equipment.
P242	Use only non-sparking tools.
P243	Take precautionary measures against static discharge.

#### Precautionary statement(s): Response

P301+P310	IF SWALLOWED: Immediately call a POISON CENTER/doctor/physician/first aider
P308+P313	IF exposed or concerned: Get medical advice/attention.
P331	Do NOT induce vomiting.
P370+P378	In case of fire: Use to extinguish.
P305+P351+P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P312	Call a POISON CENTER/doctor/physician/first aider/if you feel unwell.
P337+P313	If eye irritation persists: Get medical advice/attention.
P303+P361+P353	IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
P304+P340	IF INHALED: Remove person to fresh air and keep comfortable for breathing.

#### Precautionary statement(s): Storage

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

#### Precautionary statement(s): Disposal

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

### **SECTION 3 COMPOSITION / INFORMATION ON INGREDIENTS**

#### Substances

See section below for composition of Mixtures

#### Mixtures

CAS No	%[weight]	Name
64742-89-8.	30-60	solvent naphtha petroleum, light aliphatic
78-93-3	10-30	methyl ethyl ketone
108-88-3	10-30	toluene
110-54-3	0-10	<u>n-hexane</u>
Not Available	10-30	ingredients determined not to be hazardous

#### **SECTION 4 FIRST AID MEASURES**

#### Description of first aid measures

Description of first aid measures	
Eye Contact	<ul> <li>If this product comes in contact with the eyes:</li> <li>Wash out immediately with fresh 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>Seek medical attention without delay; if pain persists or recurs seek medical attention.</li> <li>Removal of contact lenses after an eye injury should only be undertaken by skilled personnel.</li> </ul>
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.

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#### **Septone Contact Adhesive**

Inhalation

Inhala

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

For acute or short term repeated exposures to petroleum distillates or related hydrocarbons:

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

#### **SECTION 5 FIREFIGHTING MEASURES**

#### Extinguishing media

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

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

Fire Fighting

Fire Incompatibility

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

#### Advice for firefighters

- ▶ Alert Fire Brigade and tell them location and nature of hazard.
- May be violently or explosively reactive.
- ▶ Wear breathing apparatus plus protective gloves in the event of a fire.
- Prevent, by any means available, spillage from entering drains or water course.
- Consider evacuation (or protect in place).
- Fight fire from a safe distance, with adequate cover.
- If safe, switch off electrical equipment until vapour fire hazard removed.
- Use water delivered as a fine spray to control the fire and cool adjacent area.
- Avoid spraying water onto liquid pools.
- ▶ Do not approach containers suspected to be hot.
- ▶ Cool fire exposed containers with water spray from a protected location.
- If safe to do so, remove containers from path of fire.

## Fire/Explosion Hazard

- Liquid and vapour are highly flammable.
- ► Severe fire hazard when exposed to heat, flame and/or oxidisers.
- Vapour may travel a considerable distance to source of ignition.
- ► Heating may cause expansion or decomposition leading to violent rupture of containers.
- On combustion, may emit toxic fumes of carbon monoxide (CO).

Combustion products include:

carbon dioxide (CO2)

other pyrolysis products typical of burning organic material

### **SECTION 6 ACCIDENTAL RELEASE MEASURES**

#### Personal precautions, protective equipment and emergency procedures

Minor Spills	<ul> <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> <li>Contain and absorb small quantities with vermiculite or other absorbent material.</li> <li>Wipe up.</li> <li>Collect residues in a flammable waste container.</li> </ul>
	F Collect residues in a liaminable waste container.

### Major Spills

- Clear area of personnel and move upwind.
- ▶ Alert Fire Brigade and tell them location and nature of hazard.
- May be violently or explosively reactive.

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- Wear breathing apparatus plus protective gloves.
- ▶ Prevent, by any means available, spillage from entering drains or water course.
- ▶ Consider evacuation (or protect in place).
- ▶ No smoking, naked lights or ignition sources.
- Increase ventilation.
- Stop leak if safe to do so.
- Water spray or fog may be used to disperse /absorb vapour.
- Contain spill with sand, earth or vermiculite.
- Use only spark-free shovels and explosion proof equipment.
- ▶ Collect recoverable product into labelled containers for recycling.
- Absorb remaining product with sand, earth or vermiculite
- Collect solid residues and seal in labelled drums for disposal.
- Wash area and prevent runoff into drains.
- If contamination of drains or waterways occurs, advise emergency services.

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

#### **SECTION 7 HANDLING AND STORAGE**

#### Precautions for safe handling

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

# Other information

Safe handling

- Store in original containers in approved flame-proof area.
- No smoking, naked lights, heat or ignition sources. DO NOT store in pits, depressions, basements or areas where vapours may be trapped.
- Keep containers securely sealed.
- ▶ Store away from incompatible materials in a cool, dry well ventilated area.
- Protect containers against physical damage and check regularly for leaks.
- Observe manufacturer's storage and handling recommendations contained within this MSDS.

Store below 30 deg. C.

#### Conditions for safe storage, including any incompatibilities

Suitable container

- ▶ Packing as supplied by manufacturer.
- Plastic containers may only be used if approved for flammable liquid.
- Check that containers are clearly labelled and free from leaks.

Storage incompatibility

Avoid storage with oxidisers

#### PACKAGE MATERIAL INCOMPATIBILITIES

#### **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	methyl ethyl ketone	Methyl ethyl ketone (MEK)	445 (mg/m3) / 150 (ppm)	890 (mg/m3) / 300 (ppm)	Not Available	Not Available
Australia Exposure Standards	toluene	Toluene	191 (mg/m3) / 50 (ppm)	574 (mg/m3) / 150 (ppm)	Not Available	Not Available
Australia Exposure Standards	n-hexane	Hexane (n-Hexane)	72 (mg/m3) / 20 (ppm)	Not Available	Not Available	Not Available

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f/min.)

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Ingredient	TEEL-0	TEEL-1	TEEL-2	TEEL-3
solvent naphtha petroleum, light aliphatic	100(ppm)	100(ppm)	200(ppm)	1000(ppm)
methyl ethyl ketone	200(ppm)	200(ppm)	2700(ppm)	4000(ppm)
toluene	200(ppm)	200(ppm)	510(ppm)	2900(ppm)
n-hexane	50(ppm)	400(ppm)	3300(ppm)	8600(ppm)

Ingredient	Original IDLH	Revised IDLH
methyl ethyl ketone	3,000(ppm)	3,000 [Unch](ppm)
toluene	2,000(ppm)	500(ppm)
n-hexane	5,000(ppm)	1,100 [LEL](ppm)

#### **Exposure controls**

Use in a well-ventilated area

Engineering controls are used to remove a hazard or place a barrier between the worker and the hazard. Well-designed engineering controls can be highly effective in protecting workers and will typically be independent of worker interactions to provide this high level of protection. The basic types of engineering controls are:

Process controls which involve changing the way a job activity or process is done to reduce the risk.

Enclosure and/or isolation of emission source which keeps a selected hazard "physically" away from the worker and ventilation that strategically "adds" and "removes" air in the work environment. Ventilation can remove or dilute an air contaminant if designed properly. The design of a ventilation system must match the particular process and chemical or contaminant in use.

Employers may need to use multiple types of controls to prevent employee overexposure.

For flammable liquids and flammable gases, local exhaust ventilation or a process enclosure ventilation system may be required. Ventilation equipment should be explosion-resistant.

Air contaminants generated in the workplace possess varying "escape" velocities which, in turn, determine the "capture velocities" of fresh circulating air required to effectively remove the contaminant.

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

## Appropriate engineering controls

Within each range the appropriate value depends on:

Lower end of the range	Upper end of the range
1: Room air currents minimal or favourable to capture	1: Disturbing room air currents
2: Contaminants of low toxicity or of nuisance value only.	2: Contaminants of high toxicity
3: Intermittent, low production.	3: High production, heavy use
4: Large hood or large air mass in motion	4: Small hood-local control only

Simple theory shows that air velocity falls rapidly with distance away from the opening of a simple extraction pipe. Velocity generally decreases with the square of distance from the extraction point (in simple cases). Therefore the air speed at the extraction point should be adjusted, accordingly, after reference to distance from the contaminating source. The air velocity at the extraction fan, for example, should be a minimum of 1-2 m/s (200-400 f/min.) for extraction of solvents generated in a tank 2 meters distant from the extraction point. Other mechanical considerations, producing performance deficits within the extraction apparatus, make it essential that theoretical air velocities are multiplied by factors of 10 or more when extraction systems are installed or used.

#### Personal protection











Safety glasses with side shields.

Chemical goggles. Contact lenses may pose a special hazard; soft contact lenses may absorb and concentrate irritants. A written policy document, describing the wearing of lenses or restrictions on use, should be created for each workplace or task. This should include a review of lens absorption and adsorption for the class of chemicals in use and an account of injury experience. Medical and first-aid personnel should be trained in their removal and suitable equipment should be readily available. In the event of chemical exposure, begin eye impation immediately and remove contact lens as soon as practicable. Lens should be removed at the first signs of eye redness or irritation - lens should be removed in a clean environment only after workers have washed hands thoroughly. [CDC NIOSH Current Intelligence Bulletin 59], [AS/NZS 1336 or national equivalent1

# Eye and face protection

Skin protection See Hand protection below

## Hand protection

 Wear chemical protective gloves, e.g. PVC. Wear safety footwear or safety gumboots, e.g. Rubber

#### **Body protection**

See Other protection below

### Other protection

Overalls. PVC Apron.

PVC protective suit may be required if exposure severe.

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Evewash unit.

- Ensure there is ready access to a safety shower.

  Some plastic personal protective equipment (PPE) (e.g. gloves, aprons, overshoes) are not recommended as they may produce static electricity. For large scale or continuous use wear tight-weave non-static clothing (no metallic fasteners, cuffs or pockets).
- Non sparking safety or conductive footwear should be considered. Conductive footwear describes a boot or shoe with a sole made from a conductive compound chemically bound to the bottom components, for permanent control to electrically ground the foot an shall dissipate static electricity from the body to reduce the possibility of ignition of volatile compounds. Electrical resistance must range between 0 to 500,000 ohms. Conductive shoes should be stored in lockers close to the room in which they are worn. Personnel who have been issued conductive footwear should not wear them from their place of work to their homes and return.

Thermal hazards

#### 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	СРІ
PE/EVAL/PE	A
PVA	A
BUTYL	В
TEFLON	В
VITON	В
BUTYL/NEOPRENE	С
NATURAL RUBBER	С
NEOPRENE	С
NEOPRENE/NATURAL	С
NITRILE	С
NITRILE+PVC	С
PVC	С
SARANEX-23	С

<sup>\*</sup> 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. -

#### 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 5 x ES	AX-AUS / Class 1 P3	-	AX-PAPR-AUS / Class 1 P3
up to 25 x ES	Air-line*	AX-2 P3	AX-PAPR-2 P3
up to 50 x ES	-	AX-3 P3	-
50+ x ES	-	Air-line**	-

- \* Continuous-flow; \*\* Continuous-flow or positive pressure demand
- ^ Full-face

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

#### **SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES**

#### Information on basic physical and chemical properties

Appearance	Opaque yellow highly flammable liquid with solvent odour; does not mix with water.		
Physical state	Liquid	Relative density (Water = 1)	0.84
Odour	Not Available	Partition coefficient n-octanol / water	Not Available
Odour threshold	Not Available	Auto-ignition temperature (°C)	Not Available
pH (as supplied)	Not Applicable	Decomposition temperature	Not Available
Melting point / freezing point (°C)	Not Available	Viscosity (cSt)	Not Available
Initial boiling point and boiling range (°C)	47-120	Molecular weight (g/mol)	Not Applicable
Flash point (°C)	<-30	Taste	Not Available
Evaporation rate	Not Available	Explosive properties	Not Available
Flammability	Not Available	Oxidising properties	Not Available
Upper Explosive Limit (%)	12.0	Surface Tension (dyn/cm or mN/m)	Not Available
Lower Explosive Limit (%)	1.8	Volatile Component (%vol)	79
Vapour pressure (kPa)	34.5 @15C pet. spirit	Gas group	Not Available
Solubility in water (g/L)	Immiscible	pH as a solution(1%)	Not Applicable
Vapour density (Air = 1)	Not Available	VOC g/L	

<sup>\*</sup> 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.

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Reactivity	See section 7
Chemical stability	<ul> <li>Presence of incompatible materials.</li> <li>Product is considered stable.</li> <li>Hazardous polymerisation will not occur.</li> </ul>
Possibility of hazardous reactions	See section 7
Conditions to avoid	See section 7
Incompatible materials	See section 7
Hazardous decomposition products	See section 5

#### **SECTION 11 TOXICOLOGICAL INFORMATION**

Information on toxicological effects	
Inhaled	Inhalation of vapours may cause drowsiness and dizziness. This may be accompanied by narcosis, reduced alertness, loss of reflexes, lack of coordination and vertigo.  Acute effects from inhalation of high concentrations of vapour are pulmonary irritation, including coughing, with nausea; central nervous system depression - characterised by headache and dizziness, increased reaction time, fatigue and loss of co-ordination  If exposure to highly concentrated solvent atmosphere is prolonged this may lead to narcosis, unconsciousness, even coma and possible death.
Ingestion	Accidental ingestion of the material may be harmful; animal experiments indicate that ingestion of less than 150 gram may be fatal or may produce serious damage to the health of the individual.  Ingestion may result in nausea, pain, vomiting. Vomit entering the lungs by aspiration may cause potentially lethal chemical pneumonitis.
Skin Contact	Repeated exposure may cause skin cracking, flaking or drying following normal handling and use. Skin contact with the material may damage the health of the individual; systemic effects may result following absorption. Open cuts, abraded or irritated skin should not be exposed to this material
Eye	Evidence exists, or practical experience predicts, that the material may cause severe eye irritation in a substantial number of individuals and/or may produce significant ocular lesions which are present twenty-four hours or more after instillation into the eye(s) of experimental animals. Eye contact may cause significant inflammation with pain. Corneal injury may occur; permanent impairment of vision may result unless treatment is prompt and adequate. Repeated or prolonged exposure to irritants may cause inflammation characterised by a temporary redness (similar to windburn) of the conjunctiva (conjunctivitis); temporary impairment of vision and/or other transient eye damage/ulceration may occur.
	Long-term exposure to respiratory irritants may result in disease of the airways involving difficult breathing and related systemic problems. Prolonged or repeated skin contact may cause drying with cracking, irritation and possible dermatitis following.  Harmful: danger of serious damage to health by prolonged exposure through inhalation.  Serious damage (clear functional disturbance or morphological change which may have toxicological significance) is likely to be caused by repeated or prolonged exposure. As a rule the material produces, or contains a substance which produces severe lesions. Such damage may become apparent following direct application in subchronic (90 day) toxicity studies or following sub-acute (28 day) or chronic (two-year) toxicity tests.
	Exposure to the material may cause concerns for humans owing to possible developmental toxic effects, generally on the basis that results in

Chronic

appropriate animal studies provide strong suspicion of developmental toxicity in the absence of signs of marked maternal toxicity, or at around the same dose levels as other toxic effects but which are not a secondary non-specific consequence of other toxic effects. Repeated or prolonged exposure to mixed hydrocarbons may produce narcosis with dizziness, weakness, irritability, concentration and/or memory

loss, tremor in the fingers and tongue, vertigo, olfactory disorders, constriction of visual field, paraesthesias of the extremities, weight loss and anaemia and degenerative changes in the liver and kidney. Chronic exposure by petroleum workers, to the lighter hydrocarbons, has been associated with visual disturbances, damage to the central nervous system, peripheral neuropathies (including numbness and paraesthesias), psychological and neurophysiological deficits, bone marrow toxicities (including hypoplasia possibly due to benzene) and hepatic and renal involvement. Chronic dermal exposure to petroleum hydrocarbons may result in defatting which produces localised dermatoses. Surface cracking and erosion may also increase susceptibility to infection by microorganisms. One epidemiological study of petroleum refinery workers has reported elevations in standard mortality ratios for skin cancer along with a dose-response relationship indicating an association between routine workplace exposure to petroleum or one of its constituents and skin cancer, particularly melanoma. Other studies have been unable to confirm this

Contains Contact Adherator	TOXICITY	IRRITATION
Septone Contact Adhesive	Not Available	Not Available
solvent naphtha petroleum, light	TOXICITY	IRRITATION
aliphatic	Not Available	Not Available
	TOXICITY	IRRITATION
	Dermal (rabbit) LD50: 20000 mg/kg	- mild
	Dermal (rabbit) LD50: 6480 mg/kg	Eye (human): 350 ppm -irritant
methyl ethyl ketone	Inhalation (rat) LC50: 50100 mg/m3/8 hr	Eye (rabbit): 80 mg - irritant
	Inhalation (rat) LD50: 23500 mg/m3/8 hr	Skin (rabbit): 402 mg/24 hr - mild
	Oral (rat) LD50: 2737 mg/kg	Skin (rabbit):13.78mg/24 hr open
	Not Available	Not Available
	TOXICITY	IRRITATION
	Dermal (rabbit) LD50: 12124 mg/kg	Eye (rabbit): 2mg/24h - SEVERE
toluene	Inhalation (rat) LC50: >26700 ppm/1h	Eye (rabbit):0.87 mg - mild
	Oral (rat) LD50: 636 mg/kg	Eye (rabbit):100 mg/30sec - mild
		Skin (rabbit):20 mg/24h-moderate

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	Not Available	Skin (rabbit):500 mg - moderate  Not Available
	TOXICITY	IRRITATION
n-hexane	Inhalation (rat) LD50: 48000 ppm/4h	Eye(rabbit): 10 mg - mild
П-пехапе	Oral (rat) LD50: 28710 mg/kg	
	Not Available	Not Available

Not available. Refer to individual constituents.

#### for petroleum:

This product contains benzene which is known to cause acute myeloid leukaemia and n-hexane which has been shown to metabolize to compounds which are neuropathic.

This product contains toluene. There are indications from animal studies that prolonged exposure to high concentrations of toluene may lead to hearing loss.

This product contains ethyl benzene and naphthalene from which there is evidence of tumours in rodents

Carcinogenicity: Inhalation exposure to mice causes liver tumours, which are not considered relevant to humans. Inhalation exposure to rats causes kidney tumours which are not considered relevant to humans.

**Mutagenicity:** There is a large database of mutagenicity studies on gasoline and gasoline blending streams, which use a wide variety of endpoints and give predominantly negative results. All in vivo studies in animals and recent studies in exposed humans (e.g. petrol service station attendants) have shown negative results in mutagenicity assays.

Reproductive Toxicity: Repeated exposure of pregnant rats to high concentrations of toluene (around or exceeding 1000 ppm) can cause developmental effects, such as lower birth weight and developmental neurotoxicity, on the foetus. However, in a two-generation reproductive study in rats exposed to gasoline vapour condensate, no adverse effects on the foetus were observed.

**Human Effects:** Prolonged/ repeated contact may cause defatting of the skin which can lead to dermatitis and may make the skin more susceptible to irritation and penetration by other materials.

Lifetime exposure of rodents to gasoline produces carcinogenicity although the relevance to humans has been questioned. Gasoline induces kidney cancer in male rats as a consequence of accumulation of the alpha2-microglobulin protein in hyaline droplets in the male (but not female) rat kidney. Such abnormal accumulation represents lysosomal overload and leads to chronic renal tubular cell degeneration, accumulation of cell debris, mineralisation of renal medullary tubules and necrosis. A sustained regenerative proliferation occurs in epithelial cells with subsequent neoplastic transformation with continued exposure. The alpha2-microglobulin is produced under the influence of hormonal controls in male rats but not in females and, more importantly, not in humans.

The material may cause skin irritation after prolonged or repeated exposure and may produce a contact dermatitis (nonallergic). This form of dermatitis is often characterised by skin redness (erythema) and swelling the epidermis. Histologically there may be intercellular oedema of the spongy layer (spongiosis) and intracellular oedema of the epidermis. For toluene:

#### **Acute Toxicity**

Humans exposed to intermediate to high levels of toluene for short periods of time experience adverse central nervous system effects ranging from headaches to intoxication, convulsions, narcosis, and death. Similar effects are observed in short-term animal studies.

**Humans** - Toluene ingestion or inhalation can result in severe central nervous system depression, and in large doses, can act as a narcotic. The ingestion of about 60 mL resulted in fatal nervous system depression within 30 minutes in one reported case.

Constriction and necrosis of myocardial fibers, markedly swollen liver, congestion and haemorrhage of the lungs and acute tubular necrosis were found on autopsy.

Central nervous system effects (headaches, dizziness, intoxication) and eye irritation occurred following inhalation exposure to 100 ppm toluene 6 hours/day for 4 days.

Exposure to 600 ppm for 8 hours resulted in the same and more serious symptoms including euphoria, dilated pupils, convulsions, and nausea. Exposure to 10,000-30,000 ppm has been reported to cause narcosis and death

Toluene can also strip the skin of lipids causing dermatitis

Animals - The initial effects are instability and incoordination, lachrymation and sniffles (respiratory exposure), followed by narcosis. Animals die of respiratory failure from severe nervous system depression. Cloudy swelling of the kidneys was reported in rats following inhalation exposure to 1600 ppm, 18-20 hours/day for 3 days

#### Subchronic/Chronic Effects:

Repeat doses of toluene cause adverse central nervous system effects and can damage the upper respiratory system, the liver, and the kidney. Adverse effects occur as a result from both oral and the inhalation exposures. A reported lowest-observed-effect level in humans for adverse neurobehavioral effects is 88 ppm.

**Humans** - Chronic occupational exposure and incidences of toluene abuse have resulted in hepatomegaly and liver function changes. It has also resulted in nephrotoxicity and, in one case, was a cardiac sensitiser and fatal cardiotoxin.

Neural and cerebellar dystrophy were reported in several cases of habitual "glue sniffing." An epidemiological study in France on workers chronically exposed to toluene fumes reported leukopenia and neutropenia. Exposure levels were not given in the secondary reference; however, the average urinary excretion of hippuric acid, a metabolite of toluene, was given as 4 g/L compared to a normal level of 0.6 g/L

Animals - The major target organs for the subchronic/chronic toxicity of toluene are the nervous system, liver, and kidney. Depressed immune response has been reported in male mice given doses of 105 mg/kg/day for 28 days. Toluene in corn oil administered to F344 male and female rats by gavage 5 days/week for 13 weeks, induced prostration, hypoactivity, ataxia, piloerection, lachrymation, excess salivation, and body tremors at doses 2500 mg/kg. Liver, kidney, and heart weights were also increased at this dose and histopathologic lesions were seen in the liver, kidneys, brain and urinary bladder. The no-observed-adverse effect level (NOAEL) for the study was 312 mg/kg (223 mg/kg/day) and the lowest-observed-adverse effect level (LOAEL) for the study was 625 mg/kg (446 mg/kg/day).

#### Developmental/Reproductive Toxicity

Exposures to high levels of toluene can result in adverse effects in the developing human foetus. Several studies have indicated that high levels of toluene can also adversely effect the developing offspring in laboratory animals.

**Humans** - Variable growth, microcephaly, CNS dysfunction, attentional deficits, minor craniofacial and limb abnormalities, and developmental delay were seen in three children exposed to toluene in utero as a result of maternal solvent abuse before and during pregnancy

Animals - Sternebral alterations, extra ribs, and missing tails were reported following treatment of rats with 1500 mg/m3 toluene 24 hours/day during days 9-14 of gestation. Two of the dams died during the exposure. Another group of rats received 1000 mg/m3 8 hours/day during days 1-21 of gestation. No maternal deaths or toxicity occurred, however, minor skeletal retardation was present in the exposed fetuses. CFLP Mice were exposed to 500 or 1500 mg/m3 toluene continuously during days 6-13 of pregnancy. All dams died at the high dose during the first 24 hours of exposure, however none died at 500 mg/m3. Decreased foetal weight was reported, but there were no differences

#### SOLVENT NAPHTHA PETROLEUM, LIGHT ALIPHATIC

**TOLUENE** 

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in the incidences of skeletal malformations or anomalies between the treated and control offspring.

Absorption - Studies in humans and animals have demonstrated that toluene is readily absorbed via the lungs and the gastrointestinal tract. Absorption through the skin is estimated at about 1% of that absorbed by the lungs when exposed to toluene vapor.

Dermal absorption is expected to be higher upon exposure to the liquid; however, exposure is limited by the rapid evaporation of toluene . Distribution - In studies with mice exposed to radiolabeled toluene by inhalation, high levels of radioactivity were present in body fat, bone marrow, spinal nerves, spinal cord, and brain white matter. Lower levels of radioactivity were present in blood, kidney, and liver. Accumulation of toluene has generally been found in adipose tissue, other tissues with high fat content, and in highly vascularised tissues

Metabolism - The metabolites of inhaled or ingested toluene include benzyl alcohol resulting from the hydroxylation of the methyl group. Further oxidation results in the formation of benzaldehyde and benzoic acid. The latter is conjugated with glycine to yield hippuric acid or reacted with glucuronic acid to form benzoyl glucuronide. o-cresol and p-cresol formed by ring hydroxylation are considered minor metabolites

Excretion - Toluene is primarily (60-70%) excreted through the urine as hippuric acid. The excretion of benzoyl glucuronide accounts for 10-20%, and excretion of unchanged toluene through the lungs also accounts for 10-20%. Excretion of hippuric acid is usually complete within 24 hours after exposure.

#### N-HEXANE

The material may be irritating to the eye, with prolonged contact causing inflammation. Repeated or prolonged exposure to irritants may produce conjunctivitis

Acute Toxicity	0	Carcinogenicity	0
Skin Irritation/Corrosion	0	Reproductivity	✓
Serious Eye Damage/Irritation	✓	STOT - Single Exposure	✓
Respiratory or Skin sensitisation	0	STOT - Repeated Exposure	~
Mutagenicity	0	Aspiration Hazard	~

#### **CMR STATUS**

SKIN	toluene	Australia Exposure Standards - Skin	Sk
******	12.2.2.12		

#### **SECTION 12 ECOLOGICAL INFORMATION**

#### **Toxicity**

Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment. DO NOT discharge into sewer or waterways

#### Persistence and degradability

Ingredient	Persistence: Water/Soil	Persistence: Air
Not Available	Not Available	Not Available

#### Bioaccumulative potential

Ingredient	Bioaccumulation
Not Available	Not Available

#### Mobility in soil

Ingredient	Mobility
Not Available	Not Available

#### **SECTION 13 DISPOSAL CONSIDERATIONS**

#### Waste treatment methods

Product / Packaging disposal

- ▶ 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



Land transport (ADG)	
UN number	1133
Packing group	

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UN proper shipping name	ADHESIVES containing flammable liquid		
Environmental hazard	No relevant data		
Transport hazard class(es)	Class 3 Subrisk		
Special precautions for user	Special provisions * limited quantity 5 L		

#### Air transport (ICAO-IATA / DGR)

UN number	1133		
Packing group	II		
UN proper shipping name	Adhesives containing flammable liquid		
Environmental hazard	No relevant data		
Transport hazard class(es)	ICAO/IATA Class 3 ICAO / IATA Subrisk ERG Code 3L		
	Special provisions	A3	
	Cargo Only Packing Instructions		
	Cargo Only Maximum Qty / Pack		
Special precautions for user	Passenger and Cargo Packing Instructions		
	Passenger and Cargo Maximum Qty / Pack		
	Passenger and Cargo Limited Quantity Packing Instructions	Y341	
	Passenger and Cargo Maximum Qty / Pack		

#### Sea transport (IMDG-Code / GGVSee)

UN number	1133
Packing group	II
UN proper shipping name	ADHESIVES containing flammable liquid
Environmental hazard	No relevant data
Transport hazard class(es)	IMDG Class 3 IMDG Subrisk
Special precautions for user	EMS Number F-E,S-D  Special provisions  Limited Quantities 5 L

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

Source	Ingredient	Pollution Category	Residual Concentration - Outside Special Area (% w/w)	Residual Concentration
IMO MARPOL 73/78 (Annex II) - List of Other Liquid Substances	n-hexane	Not Available	Not Available	Not Available

#### **SECTION 15 REGULATORY INFORMATION**

### Safety, health and environmental regulations $\it I$ legislation specific for the substance or mixture

solvent naphtha petroleum, light aliphatic(64742-89-8.) is found on the following regulatory lists	"Australia Hazardous Substances Information System - Consolidated Lists", "OECD List of High Production Volume (HPV) Chemicals", "Australia High Volume Industrial Chemical Lists (HVICL)", "International Council of Chemical Associations (ICCA) - High Production Volume List", "International Chemical Secretariat (ChemSec) SIN List (*Substitute It Now!)", "Acros Transport Information", "OECD Existing Chemicals Database", "Australia Inventory of Chemical Substances (AICS)", "International Maritime Dangerous Goods Requirements (IMDG Code)", "International Air Transport Association (IATA) Dangerous Goods Regulations", "International Maritime Dangerous Goods Requirements (IMDG Code) - Substance Index", "Australia Dangerous Goods Code (ADG Code) - Dangerous Goods List", "Belgium Federal Public Service Mobility and Transport, Regulations concerning the International Carriage of Dangerous Goods by Rail - Table A: Dangerous Goods List - RID 2013 (Dutch)", "Australia Dangerous Goods Code (ADG Code) - List of Emergency Action Codes"
	"Australia Illicit Drug Reagents/Essential Chemicals - Category III", "Australia Hazardous Substances Information System - Consolidated

# methyl ethyl ketone(78-93-3) is found on the following regulatory lists

"Australia Illicit Drug Reagents/Essential Chemicals - Category III", "Australia Hazardous Substances Information System - Consolidated Lists", "OECD List of High Production Volume (HPV) Chemicals", "Australia High Volume Industrial Chemical List (HVICL)", "IOFI Global Reference List of Chemically Defined Substances", "Sigma-AldrichTransport Information", "FisherTransport Information", "IMO IBC Code Chapter 17: Summary of minimum requirements", "Australia National Pollutant Inventory", "IMO MARPOL 73/78 (Annex II) - List of Noxious Liquid Substances Carried in Bulk", "International Fragrance Association (IFRA) Survey: Transparency List", "Australia FAISD Handbook - First Aid Instructions, Warning Statements, and General Safety Precautions", "Australia Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP) - Appendix E (Part 2)", "Australia Customs (Prohibited Exports) Regulations 1958 - Schedule 9 Precursor substances - Part 2", "OECD Existing Chemicals Database", "Australia Inventory of Chemical Substances (AICS)", "Australia Exposure Standards", "GESAMP/EHS Composite List - GESAMP Hazard Profiles", "International Maritime Dangerous Goods Requirements (IMDG Code)", "International Air Transport Association (IATA) Dangerous Goods Regulations", "International Maritime Dangerous Goods Requirements (IMDG Code) -

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Substance Index","Australia Dangerous Goods Code (ADG Code) - Dangerous Goods List","Belgium Federal Public Service Mobility and Transport, Regulations concerning the International Carriage of Dangerous Goods by Rail - Table A: Dangerous Goods List - RID 2013 (Dutch)","Australia Dangerous Goods Code (ADG Code) - List of Emergency Action Codes", "United Nations List of Precursors and Chemicals Frequently used in the Illicit Manufacture of Narcotic Drugs and Psychotropic Substances Under International Control (Red List) - Table II","United Nations Convention Against Illicit Traffic in Narcotic Drugs and Psychotropic Substances - Table II","Australia Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP) - Schedule 5","Australia Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP) - Ropendix F (Part 3)","OSPAR National List of Candidates for Substitution – Norway"

toluene(108-88-3) is found on the following regulatory lists

"Australia Hazardous Substances Information System - Consolidated Lists", "OECD List of High Production Volume (HPV) Chemicals","Australia High Volume Industrial Chemical List (HVICL)", "WHO Guidelines for Drinking-water Quality - Guideline values for chemicals that are of health significance in drinking-water","Australia Drinking Water Guideline values for physical and chemical characteristics", "Sigma-AldrichTransport Information", "Acros Transport Information", "FisherTransport Information", "IMO IBC Code Chapter 17: Summary of minimum requirements", "Australia National Pollutant Inventory", "Australia - Australian Capital Territory - Environment Protection Regulation: Pollutants entering waterways taken to cause environmental harm (Aquatic habitat)","IMO MARPOL 73/78 (Annex II) - List of Noxious Liquid Substances Carried in Bulk", "IMO Provisional Categorization of Liquid Substances - List 3: (Trade-named) mixtures containing at least 99% by weight of components already assessed by IMO, presenting safety hazards","Australia - Australian Capital Territory -Environment Protection Regulation: Ambient environmental standards (Domestic water supply - organic compounds)","Australia - Australian Capital Territory - Environment Protection Regulation: Pollutants entering waterways taken to cause environmental harm - Domestic water supply quality","Australia - Australian Capital Territory - Environment Protection Regulation: Ambient environmental standards (AQUA/1 to 6 non-pesticide anthropogenic organics)","International Fragrance Association (IFRA) Standards Prohibited","Australia Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP) - Schedule 6","Australia FAISD Handbook - First Aid Instructions, Warning Statements, and General Safety Precautions", "UNECE - Kiev Protocol on Pollutant Release and Transfer Registers - Annex II", "Australia Customs (Prohibited Exports) Regulations 1958 - Schedule 9 Precursor substances - Part 2", "United Nations Consolidated List of Products Whose Consumption and/or Sale Have Been Banned, Withdrawn, Severely Restricted or Not Approved by Governments", "OECD Existing Chemicals Database", "Australia Inventory of Chemical Substances (AICS)", "International Agency for Research on Cancer (IARC) - Agents Classified by the IARC Monographs","Australia Exposure Standards","International Maritime Dangerous Goods Requirements (IMDG Code)","International Air Transport Association (IATA) Dangerous Goods Regulations". "International Maritime Dangerous Goods Reguirements (IMDG Code) Substance Index", "Australia Dangerous Goods Code (ADG Code) - Dangerous Goods List", "Belgium Federal Public Service Mobility and Transport, Regulations concerning the International Carriage of Dangerous Goods by Rail - Table A: Dangerous Goods List - RID 2013 (Dutch)","Australia Dangerous Goods Code (ADG Code) - List of Emergency Action Codes","Australia Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP) - Appendix E (Part 2)", "Australia Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP) -Schedule 5","OSPAR List of Chemicals for Priority Action","GESAMP/EHS Composite List - GESAMP Hazard Profiles","Australia Illicit Drug Reagents/Essential Chemicals - Category III", "United Nations List of Precursors and Chemicals Frequently used in the Illicit Manufacture of Narcotic Drugs and Psychotropic Substances Under International Control (Red List) - Table II", "United Nations Convention Against Illicit Traffic in Narcotic Drugs and Psychotropic Substances - Table II", "Australia Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP) - Appendix I","Australia Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP) - Appendix F (Part 3)","Australia Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP) - Schedule 7"  $\,$ 

n-hexane(110-54-3) is found on the following regulatory lists

"Australia Hazardous Substances Information System - Consolidated Lists", "International Chemical Secretariat (ChemSec) SIN List ("Substitute It Now!)", "Sigma-AldrichTransport Information", "FisherTransport Information", "Australia National Pollutant Inventory", "IMO MARPOL 73/78 (Annex II) - List of Other Liquid Substances", "International Maritime Dangerous Goods Requirements (IMDG Code) - Substance Index", "International Fragrance Association (IFRA) Survey: Transparency List", "OECD Existing Chemicals Database", "Australia Exposure Standards", "International Maritime Dangerous Goods Requirements (IMDG Code)", "International Air Transport Association (IATA) Dangerous Goods Regulations", "Australia Dangerous Goods Code (ADG Code) - Dangerous Goods List", "Belgium Federal Public Service Mobility and Transport, Regulations concerning the International Carriage of Dangerous Goods by Rail - Table A: Dangerous Goods List - RID 2013 (Dutch)", "Australia Dangerous Goods Code (ADG Code) - List of Emergency Action Codes", "Australia FAISD Handbook - First Aid Instructions, Warning Statements, and General Safety Precautions", "Australia Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP) - Schedule 5", "IMO IBC Code Chapter 17: Summary of minimum requirements", "IMO MARPOL 73/78 (Annex II) - List of Noxious Liquid Substances Carried in Bulk", "IMO Provisional Categorization of Liquid Substances - List 2: Pollutant only mixtures containing at least 99% by weight of components already assessed by IMO", "GESAMP/EHS Composite List - GESAMP Hazard Profiles", "OSPAR National List of Candidates for Substitution – Norway," "OECD List of High Production Volume (HPV) Chemicals", "Australia Inventory of Chemical Substances (AICS)"

#### **SECTION 16 OTHER INFORMATION**

#### Other information

Classification of the preparation and its individual components has drawn on official and authoritative sources as well as independent review by the Chemwatch Classification committee using available literature references.

A list of reference resources used to assist the committee may be found at:

www.chemwatch.net/references

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

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