

MEGUIAR'S G138 - HOT SHINE TIRE COATING AEROSOL

Chemwatch Material Safety Data Sheet
Issue Date: Mon 15-Aug-2005

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Section 1 - CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME

MEGUIAR'S G138 - NXT HOT SHINE TIRE COATING AEROSOL

SYNONYMS

Manufacturer's Code: G138

PROPER SHIPPING NAME

AEROSOLS

PRODUCT USE

Application is by spray atomisation from a hand held aerosol pack. Maintenance product.

SUPPLIER

Company: Meguiar's Australia P/L
Address:
35 Slough Business Park
Holker St, Silverwater
NSW, 2128
AUS
Telephone: +61 2 9737 9422
Telephone: 1800 804 182
Fax: +61 2 9737 9414

Section 2 - HAZARDS IDENTIFICATION

STATEMENT OF HAZARDOUS NATURE

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

POISONS SCHEDULE

None

RISK

Extremely flammable.
Irritating to eyes.
Risk of explosion if heated under confinement.
Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
Possible risk of harm to the unborn child.
Vapours may cause drowsiness and dizziness.

SAFETY

Keep container in a well ventilated place.
Avoid exposure - obtain special instructions before use.
Keep container tightly closed.
This material and its container must be disposed of in a safe way.
Take off immediately all contaminated clothing.
In case of contact with eyes, rinse with plenty of water and contact Doctor or

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Section 2 - HAZARDS IDENTIFICATION

Poisons Information Centre.

If you feel unwell contact Doctor or Poisons Information Centre. (Show the label if possible).

Use appropriate container to avoid environment contamination.

Avoid release to the environment. Refer to special instructions/Safety data sheets.

Section 3 - COMPOSITION / INFORMATION ON INGREDIENTS

NAME	CAS RN	%
acetone	67-64-1	10-25
n-hexane	110-54-3	10-25
solvent naphtha petroleum, medium aliphatic	64742-88-7	10-20
hydrocarbon propellant	68476-85-7	10-40

Section 4 - FIRST AID MEASURES

SWALLOWED

Not considered a normal route of entry.

If spontaneous vomiting appears imminent or occurs, hold patient's head down, lower than their hips to help avoid possible aspiration of vomitus.

- If swallowed do NOT induce vomiting.
 - If vomiting occurs, lean patient forward or place on left side (head-down position, if possible) to maintain open airway and prevent aspiration.
 - Observe the patient carefully.
 - Never give liquid to a person showing signs of being sleepy or with reduced awareness; i.e. becoming unconscious.
 - Give water to rinse out mouth, then provide liquid slowly and as much as casualty can comfortably drink.
 - Seek medical advice.
- Avoid giving milk or oils.
Avoid giving alcohol.

EYE

If aerosols come in contact with the eyes:

- Immediately hold the eyelids apart and flush the eye continuously for at least 15 minutes with fresh running water.
- Ensure complete irrigation of the eye by keeping eyelids apart and away from eye and moving the eyelids by occasionally lifting the upper and lower lids.
- Transport to hospital or doctor without delay.
- Removal of contact lenses after an eye injury should only be undertaken by skilled personnel.

SKIN

If solids or aerosol mists are deposited upon the skin:

- Flush skin and hair with running water (and soap if available).
- Remove any adhering solids with industrial skin cleansing cream.
- DO NOT use solvents.
- Seek medical attention in the event of irritation.

INHALED

If aerosols, fumes or combustion products are inhaled:

- Remove to fresh air.

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Section 4 - FIRST AID MEASURES

- Lay patient down. Keep warm and rested.
- Prostheses such as false teeth, which may block airway, should be removed, where possible, prior to initiating first aid procedures.
- If breathing is shallow or has stopped, ensure clear airway and apply resuscitation, preferably with a demand valve resuscitator, bag-valve mask device, or pocket mask as trained. Perform CPR if necessary.
- Transport to hospital, or doctor.

NOTES TO PHYSICIAN

Treat symptomatically.
for simple ketones:

BASIC TREATMENT

- Establish a patent airway with suction where necessary.
- Watch for signs of respiratory insufficiency and assist ventilation as necessary.
- Administer oxygen by non-rebreather mask at 10 to 15 l/min.
- Monitor and treat, where necessary, for pulmonary oedema .
- Monitor and treat, where necessary, for shock.
- DO NOT use emetics. Where ingestion is suspected rinse mouth and give up to 200 ml water (5mL/kg recommended) for dilution where patient is able to swallow, has a strong gag reflex and does not drool.
- Give activated charcoal.

ADVANCED TREATMENT

- Consider orotracheal or nasotracheal intubation for airway control in unconscious patient or where respiratory arrest has occurred.
- Consider intubation at first sign of upper airway obstruction resulting from oedema.
- Positive-pressure ventilation using a bag-valve mask might be of use.
- Monitor and treat, where necessary, for arrhythmias.
- Start an IV D5W TKO. If signs of hypovolaemia are present use lactated Ringers solution. Fluid overload might create complications.
- Drug therapy should be considered for pulmonary oedema.
- Hypotension with signs of hypovolaemia requires the cautious administration of fluids. Fluid overload might create complications.
- Treat seizures with diazepam.
- Proparacaine hydrochloride should be used to assist eye irrigation.

EMERGENCY DEPARTMENT

- Laboratory analysis of complete blood count, serum electrolytes, BUN, creatinine, glucose, urinalysis, baseline for serum aminotransferases (ALT and AST), calcium, phosphorus and magnesium, may assist in establishing a treatment regime. Other useful analyses include anion and osmolar gaps, arterial blood gases (ABGs), chest radiographs and electrocardiograph.
- Positive end-expiratory pressure (PEEP)-assisted ventilation may be required for acute parenchymal injury or adult respiratory distress syndrome.

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Section 4 - FIRST AID MEASURES

- Consult a toxicologist as necessary.

BRONSTEIN, A.C. and CURRANCE, P.L.

EMERGENCY CARE FOR HAZARDOUS MATERIALS EXPOSURE: 2nd Ed. 1994.

Following acute or short term repeated exposures to n-hexane:

- Large quantities of n-hexane are expired by the lungs after vapour exposure (50-60%). Humans exposed to 100 ppm demonstrate an n-hexane biological half life of 2 hours.

- Initial attention should be directed towards evaluation and support of respiration. Cardiac dysrhythmias are a potential complication.

INGESTION:

- Ipecac syrup should be considered for ingestion of pure hexane exceeding 2-3ml/kg. Extreme caution must be taken to avoid aspiration since small amounts of n-hexane intratracheally, produce a severe chemical pneumonitis.

[Ellenhorn and Barceloux: Medical Toxicology]

BIOLOGICAL EXPOSURE INDEX - BEI

BEIs represent the levels of determinants which are most likely to be observed in specimens collected in a healthy worker who has been exposed to chemicals to the same extent as a worker with inhalation exposure to the Exposure Standard (ES or TLV).

Determinant	Index	Sampling Time	Comments
1. 2,5-hexanedione in urine	5 mg/gm creatinine	End of shift	NS
2. n-Hexane in end-exhaled air			SQ

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

SQ: Semi-quantitative determinant; Interpretation may be ambiguous - should be used as a screening test or confirmatory test.

Following acute or short term repeated exposures to toluene:

- Toluene is absorbed across the alveolar barrier, the blood/air mixture being 11.2/15.6 (at 37 degrees C.) The concentration of toluene, in expired breath, is of the order of 18 ppm following sustained exposure to 100 ppm. The tissue/blood proportion is 1/3 except in adipose where the proportion is 8/10.

- Metabolism by microsomal mono-oxygenation, results in the production of hippuric acid. This may be detected in the urine in amounts between 0.5 and 2.5 g/24 hr which represents, on average 0.8 gm/gm of creatinine. The biological half-life of hippuric acid is in the order of 1-2 hours.

- Primary threat to life from ingestion and/or inhalation is respiratory failure.

- Patients should be quickly evaluated for signs of respiratory distress (eg cyanosis, tachypnoea, intercostal retraction, obtundation) and given oxygen. Patients with inadequate tidal volumes or poor arterial blood gases (pO₂ <50 mm Hg or pCO₂ > 50 mm Hg) should be intubated.

- Arrhythmias complicate some hydrocarbon ingestion and/or inhalation and electrocardiographic evidence of myocardial damage 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 (adrenaline) is not recommended for treatment of bronchospasm because of potential myocardial sensitisation to catecholamines. Inhaled

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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.

BIOLOGICAL EXPOSURE INDEX - BEI

These represent the determinants observed in specimens collected from a healthy worker exposed at the Exposure Standard (ES or TLV):

Determinant	Index	Sampling Time	Comments
o-Cresol in urine	0.5 mg/L	End of shift	B
Hippuric acid in urine	1.6 g/g creatinine	End of shift	B, NS
Toluene in blood	0.05 mg/L	Prior to last shift of workweek	

NS: Non-specific determinant; also observed after exposure to other material

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

Section 5 - FIRE FIGHTING MEASURES

EXTINGUISHING MEDIA

SMALL FIRE:

- Water spray, dry chemical or CO₂

LARGE FIRE:

- Water spray or fog.

FIRE FIGHTING

- Alert Fire Brigade and tell them location and nature of hazard.
- May be violently or explosively reactive.
- Wear breathing apparatus plus protective gloves.
- Prevent, by any means available, spillage from entering drains or water course.
- If safe, switch off electrical equipment until vapour fire hazard removed.
- Use water delivered as a fine spray to control fire and cool adjacent area.
- 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.
- Equipment should be thoroughly decontaminated after use.

When any large container (including road and rail tankers) is involved in a fire, consider evacuation by 100 metres in all directions.

FIRE/EXPLOSION HAZARD

- Liquid and vapour are flammable.
- Moderate fire hazard when exposed to heat or flame.
- Vapour forms an explosive mixture with air.
- Moderate explosion hazard when exposed to heat or flame.
- Vapour may travel a considerable distance to source of ignition.
- Heating may cause expansion or decomposition leading to violent rupture of containers.
- Aerosol cans may explode on exposure to naked flame.
- Rupturing containers may rocket and scatter burning materials.
- Hazards may not be restricted to pressure effects.
- May emit acrid, poisonous or corrosive fumes.
- On combustion, may emit toxic fumes of carbon monoxide (CO).

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Section 5 - FIRE FIGHTING MEASURES

Combustion products include, carbon dioxide (CO₂), other pyrolysis products typical of burning organic material.

FIRE INCOMPATIBILITY

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

HAZCHEM

2Y

Personal Protective Equipment

PERSONAL PROTECTION EQUIPMENT

Breathing apparatus.

Gas tight chemical resistant suit.

Limit exposure duration to 1 BA set - 30 mins.

Section 6 - ACCIDENTAL RELEASE MEASURES

EMERGENCY PROCEDURES

MINOR SPILLS

- Clean up all spills immediately.
- Avoid breathing vapours and contact with skin and eyes.
- Wear protective clothing, impervious gloves and safety glasses.
- Shut off all possible sources of ignition and increase ventilation.
- Wipe up.
- If safe, damaged cans should be placed in a container outdoors, away from all ignition sources, until pressure has dissipated.
- Undamaged cans should be gathered and stowed safely.

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.
- Wear breathing apparatus plus protective gloves.
- Prevent, by any means available, spillage from entering drains or water courses
- 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.
- Absorb or cover spill with sand, earth, inert materials or vermiculite.
- If safe, damaged cans should be placed in a container outdoors, away from ignition sources, until pressure has dissipated.
- Undamaged cans should be gathered and stowed safely.
- Collect residues and seal in labelled drums for disposal.

EMERGENCY EXPOSURE LIMITS

Material	Revised IDLH Value (ppm)	Revised IDLH Value (mg/m ³)
Acetone	2,500 [LEL]	
n-Hexane	1,100 [LEL]	
L.P.G.	2,000 [LEL]	

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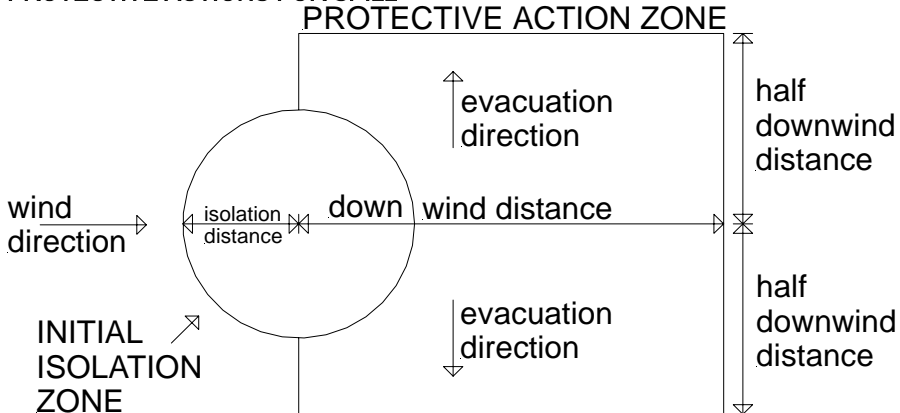
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Section 6 - ACCIDENTAL RELEASE MEASURES

NOTES

Values marked LEL indicate that the IDLH was based on 10% of the lower explosive limit for safety considerations even though the relevant toxicological data indicated that irreversible health effects or impairment of escape existed only at higher concentrations.

PROTECTIVE ACTIONS FOR SPILL



From IERG (Canada/Australia)

Isolation Distance	-
Downwind Protection Distance	8 metres
IERG Number	49

FOOTNOTES

- 1 PROTECTIVE ACTION ZONE is defined as the area in which people are at risk of harmful exposure. This zone assumes that random changes in wind direction confines the vapour plume to an area within 30 degrees on either side of the predominant wind direction, resulting in a crosswind protective action distance equal to the downwind protective action distance.
- 2 PROTECTIVE ACTIONS should be initiated to the extent possible, beginning with those closest to the spill and working away from the site in the downwind direction. Within the protective action zone a level of vapour concentration may exist resulting in nearly all unprotected persons becoming incapacitated and unable to take protective action and/or incurring serious or irreversible health effects.
- 3 INITIAL ISOLATION ZONE is determined as an area, including upwind of the incident, within which a high probability of localised wind reversal may expose nearly all persons without appropriate protection to life-threatening concentrations of the material.
- 4 SMALL SPILLS involve a leaking package of 200 litres (55 US gallons) or less, such as a drum (jerrican or box with inner containers). Larger packages leaking less than 200 litres and compressed gas leaking from a small cylinder are also considered "small spills".
 LARGE SPILLS involve many small leaking packages or a leaking package of greater than 200 litres, such as a cargo tank, portable tank or a "one-tonne" compressed gas cylinder.
- 5 Guide 126 is taken from the US DOT emergency response guide book.
- 6 IERG information is derived from CANUTEC - Transport Canada.

EMERGENCY RESPONSE PLANNING GUIDELINES (ERPG)

The maximum airborne concentration below which it is believed that nearly all individuals could be exposed for up to one hour WITHOUT experiencing or developing

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Section 6 - ACCIDENTAL RELEASE MEASURES

life-threatening health effects is:

acetone	8500 ppm
n-hexane	1100 ppm
solvent naphtha petroleum, medium aliphatic	500 mg/m ³
hydrocarbon propellant	500 mg/m ³

irreversible or other serious effects or symptoms which could impair an individual's ability to take protective action is:

acetone	8500 ppm
n-hexane	250 ppm
solvent naphtha petroleum, medium aliphatic	50 mg/m ³
hydrocarbon propellant	50 mg/m ³

other than mild, transient adverse effects

without perceiving a clearly defined odour is:

acetone	1000 ppm
n-hexane	150 ppm
solvent naphtha petroleum, medium aliphatic	30 mg/m ³
hydrocarbon propellant	30 mg/m ³

The threshold concentration below which most people will experience no appreciable risk of health effects:

acetone	1000 ppm
n-hexane	50 ppm
solvent naphtha petroleum, medium aliphatic	10 mg/m ³
hydrocarbon propellant	10 mg/m ³

American Industrial Hygiene Association (AIHA)

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

Section 7 - HANDLING AND STORAGE

PROCEDURE FOR HANDLING

- Avoid all personal contact, including inhalation.
 - Wear protective clothing when risk of exposure occurs.
 - Use in a well-ventilated area.
 - Prevent concentration in hollows and sumps.
 - DO NOT enter confined spaces until atmosphere has been checked.
 - Avoid smoking, naked lights or ignition sources.
 - Avoid contact with incompatible materials.
 - When handling, DO NOT eat, drink or smoke.
 - DO NOT incinerate or puncture aerosol cans.
 - DO NOT spray directly on humans, exposed food or food utensils.
 - 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 storing and handling recommendations.
 - Atmosphere should be regularly checked against established exposure standards to ensure safe working conditions are maintained.
- DO NOT allow clothing wet with material to stay in contact with skin.

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Section 7 - HANDLING AND STORAGE

SUITABLE CONTAINER

- Aerosol dispenser.
- Check that containers are clearly labelled.

STORAGE INCOMPATIBILITY

Avoid reaction with oxidising agents.

STORAGE REQUIREMENTS

- Store in an upright position.
- Outside or detached storage is preferred.
- Store below 38 deg. C.
- Keep dry to avoid corrosion of cans. Corrosion may result in container perforation and internal pressure may eject contents of can.
- Store in original containers in approved flammable liquid storage area.
- DO NOT store in pits, depressions, basements or areas where vapours may be trapped.
- No smoking, naked lights, heat or ignition sources.
- Keep containers securely sealed. Contents under pressure.
- Store away from incompatible materials.
- Store in a cool, dry, well ventilated area.
- Avoid storage at temperatures higher than 40 deg C.
- Store in an upright position.
- Protect containers against physical damage.
- Check regularly for spills and leaks.
- Observe manufacturer's storing and handling recommendations.

Section 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION

EXPOSURE CONTROLS

Source	Material	TWA ppm	TWA mg/m ³	STEL ppm	STEL mg/m ³	Peak ppm	Peak mg/m ³
Australian Exposure Standards	Acetone	500	1,185	1,000	2,375		
Australian Exposure Standards	Hexane (n-Hexane)	20	72				
Australian Exposure Standards	LPG (liquified petroleum gas)	1,000	1,800				

No data available for solvent naphtha petroleum, medium aliphatic as (CAS: 64742-88-7)

No data available for hydrocarbon propellant as (CAS: 68476-86-8)

ODOUR SAFETY FACTOR (OSF)

OSF=0.042 (solvent naphtha, medium aliphatic)

Exposed individuals are NOT reasonably expected to be warned, by smell, that the Exposure Standard is being exceeded.

Odour Safety Factor (OSF) is determined to fall into either Class C, D or E.

The Odour Safety Factor (OSF) is defined as:

OSF= Exposure Standard (TWA) ppm/ Odour Threshold Value (OTV) ppm

Classification into classes follows:

Class	OSF	Description
A	550	Over 90% of exposed individuals are aware by smell that the Exposure

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Section 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION

		Standard (TLV-TWA for example) is being reached, even when distracted by working activities
B	26-550	As "A" for 50-90% of persons being distracted
C	1-26	As "A" for less than 50% of persons being distracted
D	0.18-1	10-50% of persons aware of being tested perceive by smell that the Exposure Standard is being reached
E	<0.18	As "D" for less than 10% of persons aware of being tested

EXPOSURE STANDARDS FOR MIXTURE

"Worst Case" computer-aided prediction of vapour components/concentrations:

Composite Exposure Standard for Mixture (TWA) (mg/m³): 525 mg/m³

If the breathing zone concentration of ANY of the components listed below is exceeded, "Worst Case" considerations deem the individual to be overexposed.

Component Breathing Zone ppm Breathing Zone mg/m³ Mixture Conc: (%)

Component	Breathing zone (ppm)	Breathing Zone (mg/m ³)	Mixture Conc (%)
solvent naphtha petroleum, medium aliphatic	100.00	525.0000	20.0

REPRODUCTIVE HEALTH GUIDELINES

Established occupational exposure limits frequently do not take into consideration reproductive end points that are clearly below the thresholds for other toxic effects. Occupational reproductive guidelines (ORGs) have been suggested as an additional standard. These have been established after a literature search for the reproductive no-observed-adverse effect-level (NOAEL) and the lowest-observed-adverse-effect-level (LOAEL). In addition the US EPA's procedures for risk assessment for hazard identification and dose-response assessment as applied by NIOSH were used in the creation of such limits.

Ingredient	ORG	UF	Endpoint	CR	TLV Adeq
n-hexane	176 mg/m ³	NA	NA	NA	Yes

These exposure guidelines have been derived from a screening level of risk assessment and should not be construed as unequivocally safe limits. ORGS represent an 8-hour time-weighted average unless specified otherwise.

CR = Cancer Risk/10000; UF = Uncertainty factor:

TLV believed to be adequate to protect reproductive health:

LOD: Limit of detection

Toxic endpoints have also been identified as:

D = Developmental; R = Reproductive; TC = Transplacental carcinogen
 Jankovic J., Drake F.: A Screening Method for Occupational Reproductive
 American Industrial Hygiene Association Journal 57: 641-649 (1996).

INGREDIENT DATA**ACETONE:**

Odour Threshold Value: 3.6 ppm (detection), 699 ppm (recognition)

Saturation vapour concentration: 237000 ppm @ 20 C

NOTE: Detector tubes measuring in excess of 40 ppm, are available.

Exposure at or below the recommended TLV-TWA is thought to protect the worker against mild irritation associated with brief exposures and the bioaccumulation, chronic irritation of the respiratory tract and headaches associated with long-term acetone exposures. The NIOSH REL-TWA is substantially lower and has taken into account slight irritation experienced by volunteer subjects at 300 ppm. Mild irritation to acclimatised workers begins at about 750 ppm - unacclimatised subjects will experience irritation at about 350-500 ppm but acclimatisation can occur rapidly. Disagreement between the peak bodies is based largely on the view by ACGIH that widespread use of acetone, without evidence of significant adverse health effects at higher concentrations, allows acceptance of a higher limit.

Half-life of acetone in blood is 3 hours which means that no adjustment for shift-length has to be made with reference to the standard 8 hour/day, 40 hours per week because body clearance occurs within any shift with low potential for accumulation.

A STEL has been established to prevent excursions of acetone vapours that could cause depression of the central nervous system.

N-HEXANE:

Exposure limits with "skin" notation indicate that vapour and liquid may be absorbed through intact skin. Absorption by skin may readily exceed vapour inhalation exposure. Symptoms for skin absorption are the same as for inhalation. Contact with eyes and mucous membranes may also contribute to overall exposure and may also invalidate the exposure standard.

Odour Threshold Value: 65 ppm

NOTE: Detector tubes for n-hexane, measuring in excess of 100 ppm, are available commercially.

Occupational polyneuropathy may result from exposures as low as 500 ppm (as hexane), whilst nearly continuous exposures of 250 ppm have caused neurotoxic effects in animals. Many literature reports have failed to distinguish hexane from n-hexane and on the assumption that the commercial hexane contains 30% n-hexane, a worst case recommendation for TLV is assumed to reduce the risk of peripheral neuropathies (due to the metabolites 2,5-heptanedione and 3,6-octanedione) and other adverse neuropathic effects.

Concurrent exposure to chemicals (including MEK) and drugs which induce hepatic liver oxidative metabolism can reduce the time for neuropathy to appear.

SOLVENT NAPHTHA PETROLEUM, MEDIUM ALIPHATIC:

CEL TWA: 100 ppm, 525 mg/m³

[Manufacturer]

Naphthas of this type produce central nervous system depression and are mild irritants of the eyes and upper respiratory tract. The carcinogenic potential of middle petroleum distillates is recognised and is related to the content of polynuclear aromatic hydrocarbons (PAHs). The TLV is thought to be protective against the acute effects of upper respiratory tract and eye irritation and chronic systemic effects.

CAUTION: This substance has been classified by the ACGIH as A3 Animal carcinogen (at relatively high doses).
for petroleum distillates:

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Section 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION

CEL TWA: 500 ppm, 2000 mg/m³ (compare OSHA TWA).

HYDROCARBON PROPELLANT:

PERSONAL PROTECTION

EYE

- 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 lens or restrictions on use, should be created for each workplace or task. This should include a review of lens absorption and adsorption for the class of chemicals in use and an account of injury experience. Medical and first-aid personnel should be trained in their removal and suitable equipment should be readily available. In the event of chemical exposure, begin eye irrigation immediately and remove contact lens as soon as practicable. Lens should be removed at the first signs of eye redness or irritation - lens should be removed in a clean environment only after workers have washed hands thoroughly. [CDC NIOSH Current Intelligence Bulletin 59].

HANDS/FEET

No special equipment needed when handling small quantities.

OTHERWISE:

For potentially moderate exposures:

Wear general protective gloves, eg. light weight rubber gloves.

For potentially heavy exposures:

Wear chemical protective gloves, eg. PVC. and safety footwear.

OTHER

No special equipment needed when handling small quantities.

OTHERWISE:

- Overalls.
- Skin cleansing cream.
- Eyewash unit.
- Do not spray on hot surfaces.

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: acetone

Protective Material CPI *.

BUTYL/NEOPRENE	A
PE/EVAL/PE	A
PVDC/PE/PVDC	A
BUTYL	A
SARANEX-23 2-PLY	B
TEFLON	B
SARANEX-23	C
CPE	C
HYPALON	C
NITRILE+PVC	C
PVA	C

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VITON/NEOPRENE	C
NEOPRENE	C
PVC	C
NATURAL+NEOPRENE	C
NATURAL RUBBER	C
NITRILE	C

* CPI - Chemwatch Performance Index

A: Best Selection

B: Satisfactory; may degrade after 4 hours continuous immersion

C: Poor to Dangerous Choice for other than short term immersion

NOTE: As a series of factors will influence the actual performance of the glove, a final selection must be based on detailed observation. -

* Where the glove is to be used on a short term, casual or infrequent basis, factors such as "feel" or convenience (e.g. disposability), may dictate a choice of gloves which might otherwise be unsuitable following long-term or frequent use. A qualified practitioner should be consulted.

RESPIRATOR

Respiratory protection may be required when ANY "Worst Case" vapour-phase concentration is exceeded (see Computer Prediction in "Exposure Standards").

Protection Factor	Half-Face Respirator	Full-Face Respirator
10 x ES	AX-AUS AX-PAPR-AUS	-
50 x ES	Air-line*	-
100 x ES	-	AX-3
100+ x ES	-	Air-line**

* - Continuous-flow; ** - Continuous-flow or positive pressure demand

^ - Full-face.

The local concentration of material, quantity and conditions of use determine the type of personal protective equipment required. For further information consult site specific CHEMWATCH data (if available), or your Occupational Health and Safety Advisor.

ENGINEERING CONTROLS

General exhaust is adequate under normal conditions. If risk of overexposure exists, wear SAA approved respirator. Correct fit is essential to obtain adequate protection.

Provide adequate ventilation in warehouse or closed storage areas.

Section 9 - PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE

Supplied as an aerosol pack. Contents under PRESSURE. Contains highly flammable hydrocarbon propellant.

Clear highly flammable liquid aerosol with a pleasant odour; insoluble in water.

PHYSICAL PROPERTIES

Liquid.

Gas.

Does not mix with water.

continued...

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Section 9 - PHYSICAL AND CHEMICAL PROPERTIES

Floats on water.

Molecular Weight: Not Applicable

Melting Range (°C): Not Applicable

Solubility in water (g/L): Immiscible

pH (1% solution): Not Applicable

Volatile Component (%vol): 62 (VOC)

Relative Vapour Density (air=1): Not Available

Lower Explosive Limit (%): Not Available

Autoignition Temp (°C): Not Available

State: Liquid

Boiling Range (°C): Not Available

Specific Gravity (water=1): 0.78

pH (as supplied): Not Applicable

Vapour Pressure (kPa): Not Available

Evaporation Rate: Not Available

Flash Point (°C): -7 (PMCC)

Upper Explosive Limit (%): Not Available

Decomposition Temp (°C): Not Available

Section 10 - CHEMICAL STABILITY AND REACTIVITY INFORMATION

CONDITIONS CONTRIBUTING TO INSTABILITY

- Elevated temperatures.
- Presence of open flame.
- Product is considered stable.
- Hazardous polymerisation will not occur.

Section 11 - TOXICOLOGICAL INFORMATION

POTENTIAL HEALTH EFFECTS

ACUTE HEALTH EFFECTS

SWALLOWED

Not normally a hazard due to physical form of product.

Considered an unlikely route of entry in commercial/industrial environments.

Accidental ingestion of the material may be damaging to the health of the individual.

Swallowing of the liquid may cause aspiration into the lungs with the risk of chemical pneumonitis; serious consequences may result.

(ICSC13733).

Considered an unlikely route of entry in commercial/industrial environments. The

liquid may produce gastrointestinal discomfort and may be harmful if swallowed.

Ingestion may result in nausea, pain and vomiting. Vomit entering the lungs by aspiration may cause potentially lethal chemical pneumonitis.

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.

continued...

SKIN

Skin contact with the material may damage the health of the individual; systemic effects may result following absorption.

Evidence exists, or practical experience predicts, that the material either produces inflammation of the skin in a substantial number of individuals following direct contact, and/or produces significant inflammation when applied to the healthy intact skin of animals, for up to four hours, such inflammation being present twenty-four hours or more after the end of the exposure period. Skin irritation may also be present after prolonged or repeated exposure; this may result in a form of contact dermatitis (nonallergic). The dermatitis is often characterised by skin redness (erythema) and swelling (oedema) which may progress to blistering (vesiculation), scaling and thickening of the epidermis. At the microscopic level there may be intercellular oedema of the spongy layer of the skin (spongiosis) and intracellular oedema of the epidermis. The material may accentuate any pre-existing dermatitis condition. Spray mist may produce discomfort.

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. 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.

INHALED

Inhalation of vapours or aerosols (mists, fumes), generated by the material during the course of normal handling, may be damaging to the health of the individual.

Inhalation of vapours may cause drowsiness and dizziness. This may be accompanied by narcosis, drowsiness, 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.

Central nervous system (CNS) depression may include nonspecific discomfort, symptoms of giddiness, headache, dizziness, nausea, anaesthetic effects, slowed reaction time, slurred speech and may progress to unconsciousness. Serious poisonings may result in respiratory depression and may be fatal.

WARNING: Intentional misuse by concentrating/inhaling contents may be lethal. If exposure to highly concentrated solvent atmosphere is prolonged this may lead to narcosis, unconsciousness, even coma and possible death.

CHRONIC HEALTH EFFECTS

Principal route of occupational exposure to the gas is by inhalation. Substance accumulation, in the human body, may occur and may cause some concern following repeated or long-term occupational exposure. Exposure to the material may cause concerns for human fertility, generally on the basis that results in animal studies provide sufficient evidence to cause a strong suspicion of impaired fertility in the absence of toxic effects, or evidence of impaired fertility occurring at around the same dose levels as other toxic effects, but which are not a secondary non-specific consequence of other toxic effects. Workers exposed to 700 ppm acetone for 3 hours/day for 7-15 years showed inflammation of the respiratory tract, stomach and duodenum, attacks of giddiness and loss of strength. Exposure to acetone may enhance liver toxicity of chlorinated

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Section 11 - TOXICOLOGICAL INFORMATION

solvents. Chronic inhalation or skin exposure to n-hexane may cause peripheral neuropathy, which is damage to nerve ends in extremities, e.g. fingers, with loss of sensation and characteristic thickening. Nerve damage has been documented with chronic exposures of greater than 500 ppm. Improvement in condition does not immediately follow removal from exposure and symptoms may progress for two or three months. Recovery may take a year or more depending on severity of exposure, and may not always be complete. Exposure to n-hexane with methyl ethyl ketone (MEK) will accelerate the appearance of damage, but MEK alone will not cause the nerve damage. Other isomers of hexane do not cause nerve damage. [Source: Shell Co.]. Chronic solvent inhalation exposures may result in nervous system impairment and liver and blood changes. [PATTYS].

TOXICITY AND IRRITATION

Not available. Refer to individual constituents.

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

ACETONE:

TOXICITY

Oral (man) TDLo: 2857 mg/kg
Oral (rat) LD50: 5800 mg/kg
Inhalation (human) TCLo: 500 ppm
Inhalation (man) TCLo: 12000 ppm/4 hr
Inhalation (man) TCLo: 10 mg/m³/6 hr
Inhalation (rat) LC50: 50100 mg/m³/8 hr
Dermal (rabbit) LD50: 20000 mg/kg

IRRITATION

Eye (human): 500 ppm - irritant
Eye (rabbit): 3.95 mg - SEVERE
Eye (rabbit): 20mg/24hr -Moderate
Skin (rabbit):395mg (open) - Mild
Skin (rabbit): 500 mg/24hr - Mild

N-HEXANE:

TOXICITY

Oral (rat) LD50: 28710 mg/kg
Inhalation (human) TCLo: 190 ppm/8W
Inhalation (rat) LD50: 48000 ppm/4h

IRRITATION

Eye(rabbit): 10 mg - Mild

SOLVENT NAPHTHA PETROLEUM, MEDIUM ALIPHATIC:

TOXICITY

Oral (rat) LD50: > 25 ml/kg
Dermal (rabbit) LD50: > 4 ml/kg

IRRITATION

Nil Reported
[CCINFO]

HYDROCARBON PROPELLANT:

Not available. Refer to individual constituents.

Section 12 - ECOLOGICAL INFORMATION

Drinking Water Standards:

Refer to data for ingredients, which follows:

ACETONE:

Fish LC50 (96hr.) (mg/l): 8300-40000
Daphnia magna EC50 (48hr.) (mg/l): 10
log Kow (Prager 1995): -0.24
log Kow (Sangster 1997): -0.24
log Pow (Verschueren 1983): -0.24
BOD5: 122%
ThOD: 72
Half-life Soil - High (hours): 168

continued...

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Section 12 - ECOLOGICAL INFORMATION

Half-life Soil - Low (hours): 24
Half-life Air - High (hours): 2790
Half-life Air - Low (hours): 279
Half-life Surface water - High (hours): 168
Half-life Surface water - Low (hours): 24
Half-life Ground water - High (hours): 336
Half-life Ground water - Low (hours): 48
Aqueous biodegradation - Aerobic - High (hours): 168
Aqueous biodegradation - Aerobic - Low (hours): 24
Aqueous biodegradation - Anaerobic - High (hours): 672
Aqueous biodegradation - Anaerobic - Low (hours): 96
Aqueous biodegradation - Removal secondary treatment - High (hours): 75%
Aqueous biodegradation - Removal secondary treatment - Low (hours): 54%
Aqueous photolysis half-life - High (hours): 270
Photooxidation half-life water - High (hours): 3.97E+06
Photooxidation half-life water - Low (hours): 9.92E+04
Photooxidation half-life air - High (hours): 2790
Photooxidation half-life air - Low (hours): 279

log Kow: -0.24

Half-life (hr) air: 312-1896

Half-life (hr) H₂O surface water: 20

Henry's atm m³ /mol: 3.67E-05

BOD 5 if unstated: 0.31-1.76,46-55%

COD: 1.12-2.07

ThOD: 2.2

BCF: 0.69

Toxicity Fish: LC50(96) 5540-13000mg/L

Toxicity invertebrate: cell mult. inhib. 28-7500mg/L

Bioaccumulation: not sig

Nitrif. inhib.: 75% decr. at 840mg/L

Anaerobic effects: sig degrad

Degradation Biological: sig

processes Abiotic: Rxn OH*, photodissoc

In air, acetone is lost by photolysis and reaction with photochemically produced hydroxyl radicals; the estimated half-life of these combined processes is about 22 days. The relatively long half-life allows acetone to be transported long distances from its emission source.

Acetone is highly soluble and slightly persistent in water, with a half-life of about 20 hours; it is minimally toxic to aquatic life.

Acetone released to soil volatilises although some may leach into the ground where it rapidly biodegrades.

Acetone does not concentrate in the food chain.

Drinking Water Standard: none available.

Soil Guidelines: none available.

Air Quality Standards: none available.

N-HEXANE:

Hazardous Air Pollutant: Yes

Fish LC50 (96hr.) (mg/l): 4 (24hr)

Algae IC50 (72hr.) (mg/l): 10

log Kow (Sangster 1997): 3.9

BOD5: 2.21

COD: 0.04

ThOD: 3.52

continued...

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Section 12 - ECOLOGICAL INFORMATION

The lower molecular weight hydrocarbons are expected to form a "slick" on the surface of waters after release in calm sea conditions. This is expected to evaporate and enter the atmosphere where it will be degraded through reaction with hydroxy radicals.

Some of the material will become associated with benthic sediments, and it is likely to be spread over a fairly wide area of sea floor. Marine sediments may be either aerobic or anaerobic. The material, in probability, is biodegradable, under aerobic conditions (isomerised olefins and alkenes show variable results). Evidence also suggests that the hydrocarbons may be degradable under anaerobic conditions although such degradation in benthic sediments may be a relatively slow process.

Under aerobic conditions the material will degrade to water and carbon dioxide, while under anaerobic processes it will produce water, methane and carbon dioxide.

Based on test results, as well as theoretical considerations, the potential for bioaccumulation may be high. Toxic effects are often observed in species such as blue mussel, daphnia, freshwater green algae, marine copepods and amphipods.

log Kow : 3.17-3.94

BOD 5 if unstated: 2.21

COD : 0.04

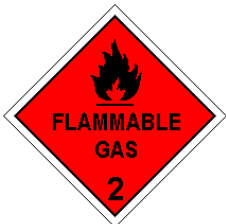
ThOD : 3.52

Nitrif. inhib. : nil at 100mg/L

Section 13 - DISPOSAL CONSIDERATIONS

- Consult State Land Waste Management Authority for disposal.
- Discharge contents of damaged aerosol cans at an approved site.
- Allow small quantities to evaporate.
- DO NOT incinerate or puncture aerosol cans.
- Bury residues and emptied aerosol cans at an approved site.

Section 14 - TRANSPORTATION INFORMATION



Shipping Name:

AEROSOLS

Dangerous Goods Class: 2.1

Subrisk: None

UN/NA Number: 1950

Packing Group: None

Labels Required: flammable gas

Additional Shipping Information:

International Transport Regulations:

IMO Dangerous Goods class: 1950

continued...

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Section 14 - TRANSPORTATION INFORMATION

IMO Packing group: None
IATA Dangerous goods class: 2.1
Cargo Instructions: 203
Cargo Max: 150 KG
Passenger Instructions: 203
Passenger Max: 75 KG
Special Provisions: None, None

HAZCHEM

2Y

Section 15 - REGULATORY INFORMATION

POISONS SCHEDULE

None

REGULATIONS

acetone (CAS: 67-64-1) is found on the following regulatory lists:

Australian Inventory of Chemical Substances (AICS)
Australian Poisons Schedule
Australia High Volume Industrial Chemical List (HVICL)

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

Australian Inventory of Chemical Substances (AICS)
Australian Poisons Schedule
Australia High Volume Industrial Chemical List (HVICL)

solvent naphtha petroleum, medium aliphatic (CAS: 64742-88-7) is found on the following regulatory lists:

Australian Inventory of Chemical Substances (AICS)
Australian Poisons Schedule
Australia High Volume Industrial Chemical List (HVICL)

hydrocarbon propellant (CAS: 68476-85-7) is found on the following regulatory lists:

Australian Inventory of Chemical Substances (AICS)
Australia High Volume Industrial Chemical List (HVICL)

hydrocarbon propellant (CAS: 68476-86-8) is found on the following regulatory lists:

Australian Inventory of Chemical Substances (AICS)

Section 16 - OTHER INFORMATION

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