

## MATERIAL SAFETY DATA SHEET

### SECTION 1 – IDENTIFICATION OF THE MATERIAL AND SUPPLIER

Product Name	MERLIN
Manufacturer's Product Code	0375
Other Names	Hydrocarbon based solvent and degreaser.
Major Recommended Uses	As a degreaser for engines and floors and other machinery that requires degreasing.
Supplier's Details	Mantek 7 Ralph Street, Alexandria Sydney NSW 2015 Telephone Number (Office Hours): (02) 9669 0261 Fax Number: (02) 9693 1562 Emergency Telephone Number: (02) 9214 0755
Date of Issue	February 2006

### SECTION 2 – HAZARDS IDENTIFICATION

Hazard Classification	Classified as hazardous according to the criteria of NOHSC.
Dangerous Goods Class & Sub-risk	Class 3, no sub-risk.
Poisons Schedule	Schedule 5.
Risk Phrases	Irritant - may cause sensitisation by skin contact. Harmful if swallowed - may cause lung damage
Safety Phrases	Keep out of reach of children. If swallowed, do NOT induce vomiting. Do not breath vapours in confined, poorly-ventilated areas. Avoid contact with the skin. Wear suitable gloves for repeated or prolonged use. Avoid release into the environment.

### SECTION 3 – COMPOSITION/INFORMATION ON INGREDIENTS

Ingredients			
Chemical Entity	CAS No	Proportion	Synonyms
Aliphatic petroleum distillates	64742-88-7	>60%	Aliphatic hydrocarbons
d-Limonene	5989-27-5	<10%	Orange terpenes
2-(Methoxymethylethoxy) propanol	34590-94-8	<10%	Dipropylene glycol(mono)methyl ether
'Ingredients determined not to be hazardous'		to 100%	

### SECTION 4 – FIRST AID MEASURES

Skin	Remove contaminated clothing and flush affected skin and hair with running water. Seek medical attention if irritation develops or persists. Wash clothing and clean shoes before reuse.
Eye	Hold eyelids apart and flush the eye continuously with running water for at least 15-minutes. Seek medical attention if irritation develops or persists.
Inhalation	Remove person to fresh air. Seek medical attention if respiratory irritation develops or if breathing becomes difficult. Apply artificial respiration if not breathing and seek urgent medical advice.
Ingestion	Do NOT induce vomiting. Give 2 or 3 glasses of water and wash out mouth with water. Seek medical attention.
First Aid Facilities	An eye wash station and normal washroom facilities should be available.
Advice to Doctor	Do not induce vomiting. Treat symptomatically.
Additional Information	Medical conditions aggravated by exposure are pre-existing skin conditions such as asthma, emphysema and dermatitis. The primary route of entry into the body is inhalation.

### SECTION 5 – FIRE FIGHTING MEASURES

Concentrated MERLIN is flammable, although when diluted with water as recommended for use, the solution is non-flammable.	
Suitable Extinguishing Media	In the event of a fire use water spray, foam, carbon dioxide or dry chemical to extinguish fire. Do NOT use water jets. Use water spray to cool storage tanks, pipelines and fire-exposed surfaces.
Special Protective Equipment and Precautions for Fire Fighters	Fire fighters should wear self-contained breathing apparatus and full protective gear. Extinguishing media should be chosen based on the nature of the surrounding fire.
Fire/Explosive Hazards	Flammable. Keep away from naked flames, sparks and other sources of ignition.
Hazchem Code	2Y

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### SECTION 6 – ACCIDENTAL RELEASE MEASURES

Wear appropriate protective clothing to minimise exposure. Floor may be slippery.	
Methods and Materials for Containment and Clean Up	Contain spill. Extinguish or remove all sources of ignition and stop leak if safe to do so. Evacuate all unnecessary personnel. Place inert, noncombustible absorbent material onto spillage. Use clean non-sparking tools to collect the material and place into a suitable labelled container for subsequent disposal. Dispose of waste according to the Environmental Protection Authority (EPA), federal, state and local regulations. Flush area with water to wash away residues. If large quantities of this material enter the waterways contact the EPA, or your local Waste Management Authority.

### SECTION 7 – HANDLING AND STORAGE

Precautions for Safe Handling	Observe all precautions stated on the product label, and follow industry safety regulations. Repeated or prolonged skin exposure without protection should be prevented. Maintain high standards of personal hygiene - i.e. always wash hands prior to eating, drinking, smoking or using toilets. Keep away from heat or flames. Product is flammable. Do not use near welding or other ignition sources and avoid sparks. Do not smoke. Build up of mists or vapours in the atmosphere must be prevented. Avoid breathing in spray or mists or vapours.
Conditions for Safe Storage	Always store in a cool, dry, well-ventilated area in an upright position in original container. Keep away from heat, sources of ignition or flames. Keep containers closed when not in use and securely sealed and protected against physical damage. Do NOT pressurise, cut, heat or weld containers as they may contain hazardous residues. For information on the design of the storeroom, reference should be made to Australian Standard AS1940 – 'The Storage and Handling of Flammable and Combustible Liquids'. Reference should also be made to all Local, State and Federal regulations.

### SECTION 8 – EXPOSURE CONTROLS/PERSONAL PROTECTION

Exposure Standards	None established for this material by the NOHSC. The recommended exposure standard for individual components are: Refined mineral oil mist - TWA - 5mg/m <sup>3</sup> . 2-(Methoxymethylethoxy) propanol – TWA – 50ppm (308mg/m <sup>3</sup> ) As with all chemicals, exposure should be kept to the lowest possible levels.
Engineering Controls	Provide sufficient ventilation. General exhaust is adequate, although where vapours or mists are generated and natural ventilation is inadequate - particularly in enclosed areas - a local exhaust ventilation system is required. Refer to AS 1940 – 'The Storage and Handling of Flammable and Combustible Liquids' and AS 2430 – 'Explosive Gas Atmospheres' for further information concerning ventilation requirements.
Personal Protective Equipment	
Eye/Face Protection	Wear safety glasses with side shields if the method of use presents the likelihood of eye contact. AS1336 and AS/NZS1337 –'Eye Protectors for Industrial Applications' should be consulted for information on eye protection.
Skin Protection	Impervious PVA, neoprene or nitrile rubber gloves should be worn when handling this product, especially if repeated or prolonged skin contact is anticipated. Refer to AS/NZS 2161 – 'Occupational Protective Gloves - Selection, Use and Maintenance' for information on glove selection. Wear appropriate clothing including chemical resistant apron and enclosed shoes where clothing is likely to be contaminated.
Respiratory Protection	If engineering controls are not effective in controlling airborne exposure then respiratory protective equipment should be used suitable for protecting against airborne contaminants. Final choice of appropriate breathing protection is dependant upon actual airborne concentrations and the type of breathing protection required will vary according to individual circumstances. Reference should be made to Australian Standards AS/NZS 1715 – 'Selection, Use and Maintenance of Respiratory Protective Devices'; and AS/NZS 1716 – 'Respiratory Protective Devices.'

### SECTION 9 – PHYSICAL AND CHEMICAL PROPERTIES

Appearance	Blue/green, non-viscous liquid with a faint citrus solvent odour.
pH (100%)	Not measurable.
Vapour Pressure	0.5mm of Hg at 25°C
Boiling Point	179°C
Melting Point	Not applicable
Solubility in Water (g/L)	Appreciable/emulsifiable.
Specific Gravity	0.81 - 0.83 at 25°C
Flashpoint	60°C
Flashpoint Method	Abel closed cup
Flashpoint Limits	LEL – 1%; UEL - not available
Volatility by Volume	95%
Vapour Density	5.4 (Air = 1)
Evaporation Rate	1.54 (Butyl acetate = 1)

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### SECTION 10 – STABILITY AND REACTIVITY

Stability	Stable.
Hazardous Polymerisation	Will not occur.
Conditions/Materials to Avoid	Avoid strong oxidising agents.
Hazardous Decomposition Products	Oxides of carbon and hydrocarbons.

### SECTION 11 – TOXICOLOGICAL INFORMATION

Health Effects	
Acute - Swallowed	Can cause gastrointestinal irritation, nausea, vomiting, and diarrhoea. May cause lung damage if swallowed. Aspiration of this product into lungs may cause chemical pneumonitis.
Acute - Eye	May cause irritation seen as redness, excessive tearing, and stinging.
Acute - Skin	May cause irritation seen as reddening, itchiness and defatting.
Acute - Inhaled	Vapours or mists generated in confined and/or poorly ventilated areas may cause respiratory system irritation, headache, nausea and dizziness.
Chronic	May cause sensitisation by skin contact in sensitive individuals. Prolonged and/or repeated exposure to the skin may cause dermatitis.
Target Organs	None.
Product Contains Chemicals Listed as Carcinogens by	International Agency for the Research of Cancer (IARC): NO Other: NO

### SECTION 12 – ECOLOGICAL INFORMATION

No specific toxicology data on this product is available. No biological limit allocated. When used as directed, no adverse environmental effects are foreseen.	
Persistence/Degradability	No data available for this specific material. Avoid contaminating waterways. Do not allow product to enter drains, waterways or sewers as d-limonene is toxic to aquatic organisms and may cause long term adverse effects in the aquatic environment.
Mobility in Soil	No data available for this specific material. The product forms an emulsion with water.

### SECTION 13 – DISPOSAL CONSIDERATIONS

Do not dispose of into natural waterways as it may cause adverse effects to aquatic organisms. Dispose of waste according to Environmental Protection Authority, federal, state and local regulations.

### SECTION 14 – TRANSPORT INFORMATION

UN Number	UN1993
UN Proper Shipping Name	Flammable liquids, N.O.S.
Transport Hazard Class	Dangerous Goods Class 3. No sub-risk. MERLIN is incompatible in a placard load with any of the following: Class 1, Explosives; Class 2.1, Flammable Gases, if both the Class 3 and Class 2.1 dangerous goods are in bulk; Class 2.3, Toxic Gases; Class 4.2 Spontaneously Combustible Substances; Class 5.1 Oxidising Agents and Class 5.2, Organic Peroxides; Class 7 Radioactive Substances.
Packaging Group	Packaging Group III.
Hazchem Code	2Y

### SECTION 15 - REGULATORY INFORMATION

Poisons Schedule	Schedule 5.
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### SECTION 16 – OTHER INFORMATION

Initial copy of 16-header MSDS.

Since the user's working conditions are not known by the supplier, the information supplied on this safety data sheet is based on our current level of knowledge and on national and community regulations. The product must not be used for any purposes other than those specified in Section 1 without first obtaining written handling instructions. MANTEK assumes no responsibility for personal injury or property damage caused by the use, storage, or disposal of the product in a manner not recommended on the product label. Users assume all risks associated with such non-recommended use, storage or disposal of the product.

It is at all times the responsibility of the user to take all necessary measures to comply with legal requirements and local regulations. The information given on this safety data sheet must be regarded as a description of the safety requirements relating to our product and not a guarantee of its properties.

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