DATE OF ISSUE: October 2006 REPLACES: None

Material Safety Data Sheet

1. IDENTIFICATION OF THE MATERIAL AND SUPPLIER

SUPPLIER

ACM Pty Ltd
ABN 55 064 142 212
Address: 47 Industrial Park Drive, Lilydale, Victoria 3140, AUSTRALIA
Telephone: +61 3 9739 4911
Emergency Telephone No: +61 3 9739 4911 (Monday to Friday 8:30 am – 5:00 pm.)

PRODUCT

Product Name: UPVC Pipe Cement - Type N
Other Names: ADHESIVES containing flammable liquid
Manufacturer's Code: 101/102

USE

For bonding UPVC pipes and fittings in non-pressure applications. Apply by brush.

2. HAZARDS IDENTIFICATION

HAZARD CLASSIFICATION

NOHSC Classification: Hazardous Substance
ADG Classification: Dangerous Goods
SUSDP Classification: Schedule 5 poison
HSNO Classification: 3.1B, 6.1D, 6.3B, 6.4A, 9.2B, 9.3C

RISK PHRASES

R36/37	Irritating to eyes and respiratory system.
R65	Harmful: may cause lung damage if swallowed.
R66	Repeated exposure may cause may cause skin dryness or cracking.
R67	Vapours may cause drowsiness and dizziness.

SAFETY PHRASES

S2	Keep out of reach of children.
S9	Keep container in a well ventilated place.
S16	Keep away from ignition sources. No smoking
S25	Avoid contact with eyes.
S33	Take precautionary measures against static discharges.

3. COMPOSITION/INFORMATION ON INGREDIENTS

MIXTURE

CHEMICAL ENTITY	CAS No	PROPORTION
Methyl ethyl ketone	78-93-3	> 60%
Cyclohexanone	108-94-1	10- < 30%
PVC vinyl acetate copolymer	9003-22-9	10 - < 30%
Other ingredients determined not to be hazardous	Not applicable	< 1%

4. FIRST AID MEASURES

FIRST AID	**Swallowed:** For advice, call a Poisons Information Centre or a doctor at once. Do NOT induce vomiting. If spontaneous vomiting occurs, keep head below the hips to prevent aspiration into lungs. **Eyes:** Can stick eyelids together. If in eye, irrigate immediately with copious amounts of water for 15 minutes with eyelids held open. Seek medical advice immediately. **Skin:** Wash affected areas with soap and copious quantities of water immediately. Remove contaminated clothing and footwear. Decontaminate footwear and wash clothing before reuse. Seek medical advice if skin irritation develops. **Inhaled:** Remove victim to fresh air. Seek medical advice immediately if adverse symptoms such as respiratory irritation, dizziness or unconsciousness develop. If breathing has stopped apply artificial respiration. **First Aid Facilities:** Have eyewashes and safety showers and normal washing facilities available in the vicinity where exposure may occur.
ADVICE TO DOCTOR	Treat symptomatically. Look for signs of aspiration into lungs. The substance may cause chemical pneumonitis.

5. FIRE FIGHTING MEASURES

EXTINGUISHING MEDIA	Water fog, foam, dry chemical, carbon dioxide.
HAZARDOUS COMBUSTION PRODUCTS	Smoke, carbon monoxide, carbon dioxide, chlorine gas, hydrogen chloride and other noxious fumes.
PRECAUTIONS FOR FIRE FIGHTERS	Keep containers cool with water spray to prevent rupture of container. Wear full protective equipment including self-contained breathing apparatus. Vapour accumulation could flash and or explode even if ignited from a distance.
HAZCHEM CODE	3[Y]E

6. ACCIDENTAL RELEASE MEASURES

EMERGENCY PROCEDURES	Wearing full PPE (see Section 8); isolate hazard area and restrict access. Increase ventilation. Remove all sources of ignition. Dyke spill to minimise environmental pollution. Take precautionary measures against static discharge. Inform emergency services if substance has spilled into sewers, drains or waterways.

CLEAN UP PROCEDURE

Small Spills: Wear safety goggles or face shield and butyl rubber gloves and wipe up spill with paper or rags. Allow product to dry outdoors or in a well ventilated area and dispose as general industrial waste.

Large spills: Notify fire brigade. Wearing full personal protective equipment, including self-contained breathing apparatus, contain spill with sand, earth or Vermiculite. Prevent run-off into drains or waterways. Bail or pump any free liquid into sealable metal containers. Collect absorbed material and also place it in into sealable metal drums. Seal containers and label them in accordance with the Hazardous Substances Labelling Code.

7. HANDLING AND STORAGE

PRECAUTION FOR SAFE HANDLING

Practice sound industrial hygiene. Wear butyl rubber gloves, safety glasses with side shields and clothing that will minimise skin contact. Wash hands before work breaks. Remove contaminated clothing and protective equipment before entering eating areas. Keep away from ignition sources and guard against static electricity discharges. Avoid run-off into drains or watercourses.

STORAGE

Store in a cool dry place and out of direct sunlight. Store in a manner that will minimize fire or explosion risks. Guard against static electricity accumulation or discharge. Store in a bunded area, and if in excess of the regulatory quantity, in a flammable goods store. Do not store with oxidizing agents.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

EXPOSURE STANDARDS

An Australian Exposure Standard for this mixture has not been set by NOHSC, but Australian exposure standards for the major components of this mixture have been set by NOHSC and are given below:

Exposure Standard [NOHSC:1003(1995)]	TWA	STEL
Methyl ethyl ketone	150 ppm	300 ppm
Cyclohexanone	25 ppm	No data
PVC vinyl acetate copolymer (Nuisance dust)	10mg/m^3	No data

BIOLOGICAL LIMIT VALUES

BEI (MEK) = 2 mg/L MEK in urine (at the end of shift). (Ref. ACGIH)
BEI (Cyclohexanone) = 8 mg/L cyclohexanolA in urine (at the end of shift). (Ref. ACGIH)

ENGINEERING CONTROLS

Use only in well ventilated areas and with local exhaust ventilation. Maintain air concentrations below exposure standards.

PERSONAL PROTECTION EQUIPMENT

Use personal protective equipment that minimizes skin and eye contact, and vapour mists or aerosol inhalation. The type of protective equipment to be used depends largely the volume and the manner in which the substance is used. To ensure proper protection for any given situation, seek guidance from the following sources: protective clothing – AS 2919; gloves – AS 2161; eye protection – AS 1337; respiratory protection – AS 1715;

feet protection – AS 2210. The suitability of each PPE for use with this substance should then be ascertained with the respective PPE suppliers.

Under condition of ordinary use and satisfactory engineering controls, wear safety goggles, butyl rubber gloves long sleeved overalls and sturdy work boots. In the event of a large spill or if working in confined spaces, or if mists, aerosols or vapours are generated and their airborne concentration is unknown wear, in the addition to the above, a full-face AS/NZ 1716 compliant cartridge type respirator with an organic vapour filter; combine it with a particulate filter in the presence of aerosols or mist (for selection guidance see AS/NZ 1715). If the respirator is the sole means of respiratory protection, use a full-face air supplied respirator.

9. PHYSICAL AND CHEMICAL PROPERTIES

PHYSICAL DESCRIPTION & PROPERTIES

Appearance: A blue or clear, slightly viscous liquid
Odour: Characteristic ketonic odour
pH: Not applicable
Vapour Pressure: Not established for this product. (MEK=105 hPa, cyclo =4.5 hPa.)
Vapour Density: >1 (Air=1)
Boiling Point: Not established for this product. (MEK=80°C, cyclohexanone = 155°C)
Melting Point: Not established for this product. (MEK=-86°C, cyclohexanone = -31°C)
Solubility in Water: Partially miscible
Specific Gravity: ca. 0.91
Flash Point: Not established for this product. (Closed cup; MEK = -4°C, cyclo. = 43°C)
Flammability limits: Not established for this product.

	(MEK	Cyclo.
L.E.L	1.8.	1.3 % by vol.
U.E.L.	11.5	9.4 % by vol.)

Ignition temperature: Not established for this product. (MEK = 514°C, Cyclo. = 430°C.)

OTHER PROPERTIES

No data.

10. STABILITY AND REACTIVITY

CHEMICAL STABILITY

This material is stable under normal ambient and anticipated storage and handling conditions.

CONDITIONS TO AVOID

Avoid excessive temperatures, ignition sources and contact with incompatible materials.

INCOMPATIBLE MATERIALS

Strong mineral acids, hydrogen peroxides, strong alkalies, oxidizing agents, and chloroform.

HAZARDOUS DECOMPOSITION PRODUCTS

Thermal decomposition will produce hydrogen chloride.

HAZARDOUS REACTIONS: Hazardous polymerization will not occur.

11. TOXICOLOGICAL INFORMATION

This mixture has not been tested as a whole for its health effects. The toxicology data and health effects given below are those of the major components, of this preparation.

ACUTE HEALTH EFFECTS

Swallowed: Ingestion may cause headaches, nausea, vomiting and adverse effects to the central nervous system due to the presence of methyl ethyl ketone and cyclohexanone. Large doses may result in coma and death. Toxicity by this route is expected to be low. LD_{50} (rat) for methyl ethyl ketone is > 2600 mg/kg and for cyclohexanone it is 1535mg/kg.

Eyes: Strong eye irritant. Can stick eyelids together. May cause reddening of the eye and lachrymation. May produce transient corneal damage due to the presence of cyclohexanone.

Skin: Moderate skin irritant due to the presence of cyclohexanone. May cause some reddening, drying and rough chapped skin. Both cyclohexanone and MEK are absorbed through the skin. LD_{50} (rabbit) for cyclohexanone is 948mg/kg and for MEK it is >2000 mg/kg.

Inhaled: Irritant to the respiratory system. Inhalation of high vapour or mist concentrations may lead to dizziness, nausea and loss of consciousness and continued inhalation may lead to death. LC_{50} (rat) for cyclohexanone is 32 mg/L/4h and for MEK is 20 mg/L/4h.

CHRONIC HEALTH EFFECTS: Prolonged or repeated skin contact with MEK or cyclohexanone may defat the skin and could lead to irritant contact dermatitis. Liver and kidney damage have been reported for both MEK and cyclohexanone in test animals, particularly at high exposure levels. Animal studies suggest that MEK may potentiate the toxic action of some other compounds such as n-hexane. None of the ingredients in this mixture is a sensitizer, mutagenic or carcinogenic.

DELAYED EFFECTS: Liver and kidney damage as well as blood and bone marrow effects have been observed in test animals exposed to cyclohexanone.

12. ECOLOGICAL INFORMATION

ECOTOXICITY: Based on the data of the major raw materials used in this product, this mixture may be toxic to aquatic organisms.

TOXICITY TO:	TEST DATA		
	Methyl ethyl ketone	Cyclohexanone	PVC resin
Fish	P. promelas LC_{50} = 3220 mg/L/96 h	L. indus LC_{50} = 536 mg/L/48 h	There are no known data that suggest that PVC resin is toxic to aquatic organisms.
Aqu. Invertebrates	Daphnia magna EC_{50} = 5090 mg/L/48 h.	Daphnia magna EC_{50} = 800 mg/L/24 h.	
Algae	Sc. quadricauda IC_5 = ≥ 4300 mg/L/7 d.	Sc. quadricauda IC_5 = 370 mg/L/8 d.	
Micro-organisms	Ps. putida EC_5 = 1150 mg/L/16 h.	Ps. putida EC_5 = 180 mg/L/16 h.	

PERSISTENCE AND DEGRADABILITY

The solvents used in this mixture are *"readily biodegradable"* according to OECD criteria. PVC resin – is biologically not degradable but will photolytically degrade. Methyl ethyl ketone – Reduction: DOC >70%, BOD >60 %;BOD_5 to COD >50%.
Cyclohexanone – 87%/14 d (MITI test)

MOBILITY

No bioaccumulation is to be expected.
PVC resin: Insoluble in water. Easily separable from water by filtration.
Methyl ethyl ketone: log P (o/w) = 0.29
Cyclohexanone: log P (o/w) = 0.81

13. DISPOSAL CONSIDERATIONS

This substance and its empty containers are classified as prescribed waste and may only be disposed of in accordance with applicable State and local regulations. These regulations vary from jurisdiction to jurisdiction and hence the user is counselled to seek advice from the local authority and classify the waste before considering disposal. The disposal information given below is a general guide and does not replace the requirement of the local regulations.

DISPOSAL

If possible recycle, otherwise incinerate, if permitted, in an approved facility. Empty containers should be drained thoroughly and then vented in a safe place away from heat or ignition sources. Send drums to a drum washing and recycling facility (ensure that the labels are legible and remain on the drums).

SPECIAL PRECAUTIONS

Do not puncture, cut or weld a drum that has not been cleaned – it is an explosion hazard. The empty, uncleaned drums still fall under the auspices of the ADG Code and must be transported accordingly.

When large amounts of this product need to be disposed of, the services of a registered, professional waste disposal organisation is highly recommended.

14. TRANSPORT INFORMATION

This product has been classified as Dangerous Goods for the purposes of transport. Depending on the mode of transport, it must be shipped in accordance with the requirements of the Codes tabulated below.

TRANSPORT INFORMATION	ADG	NZS 5433	IMDG/IMO	ICAO/IATA
UN Number	1133	1133	1133	1133
Proper Shipping Name	ADHESIVES (Containing flammable liquid)			
Class	3	3	3	3
Subsidiary Risk	None allocated	None allocated	None allocated	None allocated
Packing Group	II	II	II	II
Hazchem Code	2[Y]E	2[Y]E	Not applicable	Not applicable

15. REGULATORY INFORMATION

AICS	All ingredients are listed in AICS
SUSDP	This product is a Schedule 5 poison.
HSNO GROUP STANDARD	This substance falls under the HSNO Surface Coatings and Colourants (Flammable) Group Standard 2006
NZS 5433	Classified as Dangerous Goods according to NZS 5433:1999 "Transport of Dangerous Goods on Land".

16. OTHER INFORMATION

MSDS

Issue Number: 01
Date of Issue: October 2006
Replaces Issue: None
Changes made to the previous issue: Not applicable

ACRONYMS

ADG Code: Australian Code for the Transport of Dangerous Goods by Road and Rail
AICS: Australian Inventory of Chemical Substances.
CAS Number: Chemical Abstracts Service Registry Number
DG: Dangerous Goods
Hazchem Code: An emergency action code of numbers and letters, which gives information to emergency services.
HSNO: Hazardous Substances and New Organisms Act 1996
IATA: International Air Transport Association
ICAO: International Civil Aviation Organization
IMDG: International Maritime Dangerous Goods Code
IMO: International Maritime Organization
N.O.S.: Not otherwise specified.
NOHSC: National Health and Safety Commission.
NZS 5433: New Zealand Standard NZS 5433:1999 "Transport of Dangerous Goods on Land".
SUDP: Standard for the Uniform Scheduling of Drugs and Poisons.
UN Number: United Nations Number