

Material Safety Data Sheet

MEKP NR20

Infosafe™ 1HLCQ **Issue Date** October 2008 **Status** ISSUED by BS: 1.9.40
No. NUPLEXIN

1. IDENTIFICATION OF THE MATERIAL AND SUPPLIER

Product Name MEKP NR20

Product Code F00821

Company Name FGI, division of Nuplex Industries (Aust) Pty Ltd. (ABN 25 000 045 572)

Address 14 Clearview Place, BROOKVALE, NSW 2100
New Zealand: Nuplex Industries Ltd., 12 Industry Rd, Penrose, Auckland

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Recommended Use Initiator for curing polyester resins.

Other Names Not Available

2. HAZARDS IDENTIFICATION

Hazard Classification Australia:
Classified as Hazardous according to criteria of National Occupational Health & Safety Commission (NOHSC), Australia.
Classified as Dangerous Goods according to the Australian Code for the Transport of Dangerous Goods by Road and Rail.

New Zealand:
Classified as Hazardous according to the New Zealand Hazardous Substances (Minimum Degrees of Hazard) Regulations 2001.
Classified as Dangerous Goods for transport according to the New Zealand Standard NZS 5433:2007 Transport of Dangerous Goods on Land.

HSNO Classification:
3.1D - Flammable liquid: Low hazard.
5.2D - Substance that is an organic peroxide.

- 6.1D - Substance that is acutely toxic if swallowed.
- 6.1D - Substance that is acutely toxic by inhalation.
- 6.9B - Substance that is harmful to human target organs or systems.
- 8.2B - Substance that is corrosive to dermal tissue.
- 8.3A - Substance that is corrosive to ocular tissue.
- 9.1B - Substance that is ecotoxic in the aquatic environment.
- 9.3C - Substance that is harmful to terrestrial vertebrates.

Hazard Statement Codes:

- H227 Combustible liquid.
- H242 Heating may cause a fire.
- H302 Harmful if swallowed.
- H332 Harmful if inhaled.
- H314 Causes severe skin burns and eye damage.
- H371 May cause damage to organs.
- H318 Causes serious eye damage.
- H411 Toxic to aquatic life with long lasting effects.
- H433 Harmful to terrestrial vertebrates.

Precautionary Statement Codes- Prevention:

- P102 Keep out of reach of children. - This statement applies only where the substance is available to the general public.
- P103 Read label before use. - This statement applies only where the substance is available to the general public.
- P104 Read Safety Data Sheet before use.
- P210 Keep away from heat, sparks, open flames or hot surfaces. No smoking.
- P220 Keep/Store away from clothing and other combustible materials.
- P234 Keep only in original container.
- P260 Do not breathe mist, vapours or spray.
- P264 Wash skin thoroughly after handling.
- P270 Do not eat, drink or smoke when using this product.
- P271 Use only outdoors or in a well-ventilated area.
- P273 Avoid release to the environment.
- P280 Wear protective gloves, protective clothing, eye protection and face protection.

Precautionary Statement Codes- Response:

- P101 If medical advice is needed, have product container or label at hand. - This statement applies only where the substance is available to the general public.
- INGESTION:
- P301+P330+P331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
 - P310 Immediately call a POISON CENTRE or doctor/physician.
- INHALATION:
- P304+P340 IF INHALED: Remove to fresh air and keep at rest in a position comfortable for breathing.
 - P310 Immediately call a POISON CENTRE or doctor/physician.
 - P331 Do NOT induce vomiting.
- SKIN:
- P303+P361+P353 IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.
 - P310 Immediately call a POISON CENTRE or doctor/physician.
 - P363 Wash contaminated clothing before reuse.
- EYES:
- P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
 - P310 Immediately call a POISON CENTRE or doctor/physician.
 - P309+P311 If exposed or if you feel unwell: Call a POISON CENTRE or doctor/physician.

P391 Collect spillage.

Precautionary Statement Codes - Storage:

P405 Store locked up.

P411+P235 Store at temperatures not exceeding 30°C. Keep cool.

P410 Protect from sunlight.

P420 Store away from other materials.

Precautionary Statement Codes - Disposal:

P501 In the case of a substance that is in compliance with a HSNO approval other than a Part 6A (Group Standards) approval, a label must provide a description of one or more appropriate and achievable methods for the disposal of a substance in accordance with the Hazardous Substances (Disposal) Regulations 2001. This may also include any method of disposal that must be avoided.

Risk Phrase(s) R7 May cause fire.
R22 Harmful if swallowed.
R34 Causes burns.

Safety Phrase (s) S14 Keep away from reducing agents (eg amines), acids, alkalis and heavy metal compounds (eg accelerators, driers and metal soaps)
S15 Keep away from heat.
S3/7 Keep container tightly closed in a cool place.
S50 Do not mix with peroxide accelerators or reducing agents.
S36/37/39 Wear suitable protective clothing, gloves and eye/face protection.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Ingredients	Name	CAS	Proportion
	Methyl ethyl ketone peroxide	1338-23-4	<35 %
	Methyl ethyl ketone	78-93-3	<5 %
	Hydrogen peroxide	7722-84-1	<5 %
	Dimethyl phthalate	131-11-3	30-60 %

4. FIRST AID MEASURES

Inhalation If inhaled, remove from contaminated area. Apply artificial respiration if not breathing. Seek medical attention.

Ingestion Do NOT induce vomiting. Wash out mouth with water and give plenty of water to drink. Seek immediate medical attention.

Skin Wash affected area thoroughly with soap and water. Remove contaminated clothing and wash before reuse or discard. Seek immediate medical attention.

Eye If in eyes, hold eyelids apart and flush the eye continuously with running water. Continue flushing until advised to stop by the Poison Information Centre or a doctor, or for at least 15 minutes. Take care not to rinse contaminated water into the non-

affected eye. Seek immediate medical attention.

**First Aid
Facilities**

Eye wash fountains and safety showers should be easily accessible.

**Advice to
Doctor**

Treat symptomatically.

**Other
Information**

For advice in an emergency, contact a Poisons Information Centre (Phone Australia 13 1126; New Zealand 0800 POISON / 0800 764 766) or a doctor at once.

5. FIRE FIGHTING MEASURES

**Suitable
Extinguishing
Media**

Use carbon dioxide, foam, water fog. Water fog or fine spray is the preferred extinguishing media for large fires.

**Specific
Hazards**

Formation of ignitable/ explosive vapour-air mixtures possible. This product will intensify any fire that it is involved in.

Hazchem Code

2WE

**Decomposition
Temp.**

Self accelerating decomposition temperature (SADT): ca 60°C.

**Precautions in
connection with
Fire**

Fire fighters should wear Self-Contained Breathing Apparatus (SCBA) and full protective clothing to prevent exposure to vapours, fumes or products of combustion. Water spray may be used to cool down heat-exposed containers. If safe to do so, remove containers from path of fire.

6. ACCIDENTAL RELEASE MEASURES

**Emergency
Procedures**

Wear appropriate personal protective equipment and clothing to minimise exposure. Extinguish or remove all sources of ignition and stop leak if safe to do so. Increase ventilation. Evacuate all unnecessary personnel. If possible contain the spill. Place inert absorbent material onto spillage. Use clean non-sparking tools to collect the material and place into a suitable labelled container. Do not dilute material but contain. Dispose of waste according to federal, Environmental Protection Authority and state regulations. If the spillage enters the waterways contact the Environmental Protection Authority, or your local Waste Management Authority.

7. HANDLING AND STORAGE

**Precautions for
Safe Handling**

Keep containers closed to prevent contamination. Rotate stock using the oldest material first. Never bring peroxide into direct contact with accelerator during processing. Weigh out and add peroxide and accelerator separately. When necessary, employ grounding, bonding, and explosion venting due to static discharge, shock, impact, heat, friction, or blows. Use only

very clean containers and equipment free from traces of impurities. Never return unused product to original container. Do not reuse empty packaging to store other products. Have emergency equipment (for fires, spills, leaks, etc.) readily available. Label containers. Keep containers closed when not in use. Wear appropriate protective equipment to prevent inhalation, skin and eye contact. Ensure a high level of personal hygiene is maintained when using this product. That is; always wash hands before eating, drinking, smoking or using the toilet facilities.

Conditions for Safe Storage Store in a cool, well-ventilated and fire-resistant location. Shield containers from direct sunlight and maintain storage temperature below 30°C. Avoid any conditions that may cause drying or contamination. Do not leave material uncovered. Store in proper storage area and remove only as needed. Keep material in its original container. Isolate from acids, alcohols, ethers, reducing agents and polymerisation catalysts. Have appropriate fire extinguishers available in and near the storage area. For information on the design of the storeroom reference should be made to Australian Standard AS 2714: The storage and handling of hazardous chemical materials - Class 5.2 substances (organic peroxides).

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

National Exposure Standards No exposure standards have been established for this material by the National Occupational Health & Safety Commission (NOHSC), Australia or the Occupational Safety and Health Service (OSH) of the New Zealand Department of Labour. However, exposure standards for ingredients are stated below:

National Occupational Health And Safety Commission (NOHSC), Australia Exposure Standards:

Substance	TWA		STEL	
	ppm	mg/m ³	ppm	mg/m ³
Methyl ethyl ketone peroxide	0.2	1.5 (Peak Limitation)		
Dimethyl phthalate	-	5	-	-
Methyl ethyl ketone	150	445	300	890

New Zealand Occupational Safety and Health Service (OSH) Workplace Exposure Standards:

Substance	TWA		STEL	
	ppm	mg/m ³	ppm	mg/m ³
Methyl ethyl ketone peroxide	0.2	1.5 (Ceiling)		
Dimethyl phthalate	-	5	-	-
Methyl ethyl ketone	150	445	300	890

TWA (Time Weighted Average): The average airborne concentration of a particular substance when calculated over a normal eight-hour working day, for a five-day week.

STEL (Short Term Exposure Limit): The average airborne concentration over a 15 minute period which should not be exceeded at any time during a normal eight-hour workday.

Peak Limitation: A ceiling concentration which should not be exceeded over a measurement period which should be as short as possible but not exceeding 15 minutes.

Ceiling: A concentration that should not be exceeded during any part of the working day.

Biological Limit Values No biological limit allocated.

Engineering Controls	Provide sufficient ventilation to keep airborne levels below the exposure limits. Where natural ventilation is inadequate, a flameproof local exhaust ventilation system, drawing vapours/mists away from workers' breathing zone, is required.
Respiratory Protection	If engineering controls are not effective in controlling airborne exposure then an approved respirator with a replaceable vapour/mist filter should be used. Reference should be made to Australian/New Zealand Standards AS/NZS 1715, Selection, Use and Maintenance of Respiratory Protective Devices; and AS/NZS 1716, Respiratory Protective Devices, in order to make any necessary changes for individual circumstances.
Eye Protection	Safety glasses with side shields, goggles or full-face shield as appropriate recommended. Final choice of appropriate eye/face protection will vary according to individual circumstances i.e. methods of handling or engineering controls and according to risk assessments undertaken. Eye protection should conform with Australian/New Zealand Standard AS/NZS 1337 - Eye Protectors for Industrial Applications.
Hand Protection	Wear gloves of impervious material. Final choice of appropriate gloves will vary according to individual circumstances i.e. methods of handling or according to risk assessments undertaken. Reference should be made to AS/NZS 2161.1: Occupational protective gloves - Selection, use and maintenance.
Body Protection	Suitable work wear should be worn to protect personal clothing, eg cotton overalls buttoned at neck and wrist. When large quantities are handled the use of plastic aprons and rubber boots is recommended. Industrial clothing should conform to the specifications detailed in AS/NZS 2919: Industrial clothing.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	Colourless liquid.
Odour	Mildly pungent odour.
Decomposition Temperature	Self accelerating decomposition temperature (SADT): ca 60°C.
Melting Point	Not available
Boiling Point	Decomposes
Solubility in Water	1% miscible
Specific Gravity	1.15
pH Value	Corrosive
Vapour Pressure	50 kPa @ 55°C
Vapour Density (Air=1)	Not available
Viscosity	Not available

Flash Point	Approx. 68°C (ISO 3679/80, SETAFLASH)
Auto-Ignition Temperature	281°C
Flammable Limits - Lower	Not available
Flammable Limits - Upper	Not available
Solubility in other solvents (kg/m3)	Soluble in phthalates.

10. STABILITY AND REACTIVITY

Chemical Stability	<p>Stable when kept in original, closed container, at ambient temperatures. Decomposes very slowly at ambient temperatures to give off oxygen.</p> <p>A dangerous self accelerating decomposition reaction and, under certain circumstances, explosion or fire can be caused by direct contact with incompatible substances or by thermal decomposition at and above SADT: 60°C.</p> <p>SADT - Self-Accelerating Decomposition Temperature. Lowest temperature at which the tested package size will undergo a self-accelerating decomposition reaction. This reaction will generate flammable vapours, which may autoignite. The length of time to generate a decomposition reaction, after the SADT has been reached or exceeded, is dependent upon how much the SADT has been exceeded and the length of time needed for the reaction exotherm (heat spike from increasing decomposition rate) to initiate a rapid decomposition reaction. Typically, SADT is inversely proportional to packaging size. Large packages will have a lower SADT due to smaller ratio of heat transfer area to volume of product.</p>
Conditions to Avoid	Exposure to direct sunlight, heat or sources of ignition and contamination. Avoid contamination with any materials. Never mix directly with accelerators or promoters. Do not confine in closed systems or equipment. Do not return unused product to original container.
Incompatible Materials	Acids, alkalis, reducing agents, oxidising agents, rust, transition metals and their compounds (such as iron, copper, brass, bronze, cobalt, nickel, lead), resins, promoters, accelerators and combustible materials.
Hazardous Decomposition Products	Thermal decomposition may result in the release flammable gases and vapours.
Hazardous Reactions	Violent reactions may be expected with acid, alkali, heavy metals and reducing agents.
Hazardous Polymerization	Will not occur.

11. TOXICOLOGICAL INFORMATION

Toxicology Information	<p>For Methyl ethyl ketone peroxide: Acute Toxicity: LD50 (Oral, Rat): 1017 mg/kg (Methyl ethyl ketone peroxide 40%) LD0 (Dermal, Rat): 1.8-3.6 ml/kg (Methyl ethyl ketone peroxide 60%) LC50 (Inhalation, Rat): 17 mg/l; 4 hours exposure time (Methyl ethyl ketone peroxide 40%)</p> <p>For Dimethyl phthalate: Acute Toxicity: LD50 (Oral, Rat): >2400 mg/kg LD50 (Dermal, Rabbit): >10,000 m/kg LC50 (Inhalation, Rat): 9300 mg/m³ (6.5 hours) Irritation: Eye: Minimally irritating.</p> <p>For Methyl ethyl ketone: Acute Toxicity: LD50 (Oral, Rat): 2737 mg/kg LD50 (Dermal, Rabbit): 6480 mg/kg LC50 (Inhalation, Rat): 23.50 mg/m³ Irritation: Skin: Moderately irritating. Eye: Moderately irritating.</p>
Inhalation	Inhalation of mists or vapours will result in respiratory irritation and possible harmful corrosive effects including lesions of the nasal septum, pulmonary edema, pneumonitis and emphysema.
Ingestion	Harmful and corrosive if swallowed. Ingestion of this product may cause nausea, vomiting, abdominal pain and chemical burns to the mouth, throat and stomach.
Skin	Corrosive to skin. Skin contact will cause redness, itching, irritation, severe pain and chemical burns with resultant tissue destruction.
Eye	Corrosive to eyes. Eye contact will cause stinging, burns, severe pain and possible permanent corneal damage.
Chronic Effects	Prolonged or repeated exposure to vapour or mist may cause severe respiratory damage. Prolonged or repeated skin contact may cause severe tissue damage.

12. ECOLOGICAL INFORMATION

Ecotoxicity	For Methyl ethyl ketone peroxide 33%: LC50 (Fish (Poecilia reticulata)): 44.2 mg/L/96h EC50 (Bacteria): 48.0 mg/L (Activated sludge respiration inhibition test)
Persistence / Degradability	Degradation Biotic: Readily biodegradable (Closed bottle test).
Mobility	Not available

Environment**Protection**

Do not discharge product into drains, waterways or sewers.

13. DISPOSAL CONSIDERATIONS

Disposal**Considerations**

The disposal of the spilled or waste material must be done in accordance with applicable local and national regulations.

14. TRANSPORT INFORMATION

Transport**Information**

AUSTRALIA

This material is classified as a Class 5.2 Dangerous Goods according to the Australian Code for the Transport of Dangerous Goods. Class 5.2 Organic Peroxides shall not be loaded or packed in the same vehicle or freight as,

- Class 1, Explosives,
- Class 2.1, Flammable Gases,
- Class 2.2, Non-flammable Non-toxic Gases,
- Class 2.3, Toxic Gases,
- Class 3, Flammable Liquids,
- Class 4.1, Flammable Solids,
- Class 4.2, Spontaneously Combustible Substances,
- Class 4.3, Dangerous When Wet Substances,
- Class 5.1, Oxidising Agents,
- Class 6.1, Toxic Substances and Class 6.2 Infectious Substances (where the substances are fire risk substances),
- Combustible liquid
- Class 7, Radioactive Substances,
- Class 8, Corrosive Substances,
- Class 9, Miscellaneous Dangerous Goods (where the miscellaneous dangerous goods are fire risk substances), and combustibles liquids.

NEW ZEALAND

This material is classified as a Class 5.2 - Organic Peroxide according to NZS 5433:2007 Transport of Dangerous Goods on Land.

Must not be loaded in the same freight container or on the same vehicle with:

- Class 1, Explosives
- Class 2.1, Flammable gases
- Class 2.3, Toxic gases
- Class 3, Flammable liquids
- Class 4.1, Flammable solids
- Class 4.2, Spontaneously combustible substances
- Class 4.3, Dangerous when wet substances
- Class 5.1, Oxidizing substances
- Class 6, Infectious substances
- Class 7, Radioactive materials unless specifically exempted.
- Class 8, Corrosive substances

Must not be loaded with in the same freight container; and on the same vehicle must be separated horizontally by at least 3 metres unless all but one are packed in separate freight containers with:

- Class 2.2, Non-flammable compressed gas
- Class 6.1, Toxic substances

Goods of packing group II or III may be loaded in the same freight container or on the same vehicle if transported in

- segregation devices with:
- Class 3, Flammable liquids
 - Class 4.1, Flammable solids
 - Class 4.2, Spontaneously combustible substances
 - Class 4.3, Dangerous when wet substances
 - Class 5.1, Oxidizing substances
 - Class 6.1, Toxic substances
 - Class 6.2, Infectious substances
 - Class 8, Corrosive substances

U.N. Number 3105

Proper Shipping Name ORGANIC PEROXIDE TYPE D, LIQUID - (CONTAINS METHYL ETHYL KETONE PEROXIDE)

DG Class 5.2

Hazchem Code 2WE

EPG Number 5K1

IERG Number 32

15. REGULATORY INFORMATION

Regulatory Information Australia:
Classified as Hazardous according to criteria of National Occupational Health & Safety Commission (NOHSC), Australia.
Classified as a Scheduled Poison S5 according to the Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP).

Poisons Schedule S5

National and or International Regulatory Information New Zealand:
Classified as Hazardous according to the New Zealand Hazardous Substances (Minimum Degrees of Hazard) Regulations 2001.
Organic Peroxides, Corrosive Group Standard 2006
HSNO Approval Number: HSR002630.

Hazard Category Harmful, Corrosive, Oxidising

AICS (Australia) All components of this product are listed on the Australian Inventory of Chemical Substances (AICS), or otherwise are in compliance with the NICNAS requirements.

16. OTHER INFORMATION

Date of preparation or last revision of MSDS MSDS Reviewed: October 2008
Supersedes: July 2007

Contact Person/Point For specialist advice in emergencies: Australia 1800 022 037;
New Zealand 0800 154 666.

IMPORTANT ADVICE: This MSDS summarizes our best knowledge of the health and safety hazard information of the product and how to

safely handle and use the product in the workplace. Each user should read this MSDS and consider the information in the context of how the product will be handled and used in the workplace including its use in conjunction with other products. If clarification or further information is needed to ensure that an appropriate risk assessment can be made, the user should contact Nuplex Industries (Aust) Pty Ltd. Our responsibility for products sold is subject to our standard terms and conditions, a copy of which is sent to our customers and is also available on request.

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