

MATERIAL SAFETY DATA SHEET

1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND COMPANY/UNDERTAKING

Product Name: Cold Cure / Rapid Repair Powder

Address/Phone No.: WHW PLASTICS

Term Road

Cleveland Street

Hull

HU8 7BF

United Kingdom

Tel: +44 (0) 1482 329154

Use: Manufacture of dental and medical products

2. COMPOSITION/INFORMATION ON INGREDIENTS

PRODUCT DESCRIPTION

Polymer based on methyl methacrylate and 2-ethyl hexyl acrylate containing peroxide.

HAZARDOUS INGREDIENT(S)	%W/W	CAS No.	EC No.	EC Classification
Dibenzoyl peroxide	1-5	000094-36-0	202-327-6	E,Xi; R2 R36 R43
For full text of R phrases see section 16.				

3. HAZARDS IDENTIFICATION

Combustible but not readily ignited.

May form explosible dust clouds in air.

May cause sensitisation by skin contact.

EC Classification: IRRITANT

3.1 NON-HAZARDOUS COMPONENTS

Various non-hazardous pigments.

4. FIRST-AID MEASURES

Inhalation: Remove patient from exposure. Obtain medical attention if ill effects occur.

Skin Contact: Remove contaminated clothing. Wash skin with water. If symptoms (irritation or blistering) occur obtain medical attention.

Eye Contact: Remove particles by irrigating with eye wash solution or clean water, holding the eyelids apart. Obtain medical attention.

Ingestion: Do not induce vomiting. Wash out mouth with water. Obtain medical attention if ill effects occur.

Further Medical Treatment

Symptomatic treatment and supportive therapy as indicated.

5. FIRE-FIGHTING MEASURES

Combustible but not readily ignited. Combustion or thermal decomposition will evolve toxic, irritant and flammable vapours.

This product can form flammable dust clouds at elevated temperatures. The minimum ignition temperature of a dust cloud of a similar polymer has been measured at approximately 480°C (IEC 1241-2-1).

Incompatible materials:

None known.

Extinguishing Media:

foam or CO2

Fire Fighting Protective Equipment:

A self contained breathing apparatus and full protective clothing should be worn in fire conditions.

6. ACCIDENTAL RELEASE MEASURES

Caution - spillages may be slippery. Collect in containers for disposal using approved dust respirator.

7. HANDLING AND STORAGE

7.1 HANDLING

Product as supplied:

Avoid contact with skin and eyes. Unlikely to represent a dust hazard under normal handling conditions.

Process Hazards

Dental resins are usually processed in conjunction with reactive monomers and this may require the use of a higher level of PPE than that necessary for the polymer itself. Please also see the advice in Sections 8 and 11.

7.2 STORAGE

Acrylic polymers are supplied in either plastic or bulk containers. Keep containers in a clean, cool and dry area away from heat sources.

Natural ventilation is adequate.

Storage Temperature: ambient.

7.3 SPECIFIC USES

Repair systems for dental materials.

Not intended for thermal processing.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Provide adequate ventilation, including appropriate local extraction, to ensure that the defined occupational exposure limit is not exceeded. Consideration should be given to the work procedures involved and the potential extent of exposure as they may determine whether a higher level of protection is required.

The following information is given as general guidance.

Respirators: A suitable dust mask or dust respirator with filter type P-S or FFP-S (EN143 or EN149) may be appropriate. In the unlikely event of formation of particularly high levels of dust a self contained breathing apparatus may be appropriate.

Eye Protection: Safety spectacles / Full face shield.

Gloves: Wear suitable gloves.

Gloves of butyl rubber are suitable.

Other: Wear suitable protective clothing.

Occupational Exposure Limits

HAZARDOUS INGREDIENT(S)	LTEL 8hr TWA ppm	LTEL 8hr TWA mg/m ³	STEL ppm	STEL mg/m ³	Notes
Dibenzoyl peroxide	-	5	-	-	OES
Dust (total inhalable dust)	-	10	-	-	OES
Dust (respirable dust)	-	4	-	-	OES

9. PHYSICAL AND CHEMICAL PROPERTIES

Form:	fine beads
Colour:	white
Odour:	characteristic, methyl methacrylate
pH (Value):	Not applicable.
Boiling Point (°C):	Not applicable.
Flash Point (°C):	Not available.
Flammable Limits:	Not applicable.
Auto Ignition Temperature (°C):	Not available.
Explosive Properties:	Not available.
Oxidising Properties:	Not applicable.
Vapour Pressure (Pascals):	Not applicable.
Density:	1.1 - 1.18g/cm ³
Solubility (Water):	negligible
Solubility (Other):	Not available.
Partition Coefficient:	Not applicable.
Decomposition Temperature (°C):	~240
Bulk Density:	~550-750 kg/m ³

10. STABILITY AND REACTIVITY

Hazardous Reactions:

None known.

Hazardous Decomposition Product(s):

Methyl methacrylate, 2-ethylhexyl acrylate, carbon monoxide, carbon dioxide.

11. TOXICOLOGICAL INFORMATION

Inhalation

Unlikely to be hazardous by inhalation.

Skin Contact

May cause sensitisation by skin contact.

Unlikely to cause skin irritation.

Contains greater than 0.1% residual (methyl methacrylate, 2-ethylhexyl acrylate). During normal handling this will not constitute a hazard. If the polymer matrix is destroyed e.g. when the product is dissolved in organic solvent, chemical residues will be released from the polymer matrix. Under these conditions, they may produce an allergic reaction in persons already sensitised.

Eye Contact

Dust may cause irritation.

Ingestion

Low oral toxicity.

Long Term Exposure

No information available.

12. ECOLOGICAL INFORMATION

Environmental Fate and Distribution

Solid with low volatility. The product is essentially insoluble in water. The product has low potential for bioaccumulation. The product is predicted to have low mobility in soil.

Persistence and Degradation

The product is non-biodegradable in soil. There is no evidence of degradation in soil and water.

Toxicity

The product is predicted to have low toxicity to aquatic organisms.

Effect on Effluent Treatment

The material is essentially insoluble in water and can therefore be separated from aqueous medium by sedimentation and filtration processes at an effluent treatment plant.

13. DISPOSAL CONSIDERATIONS

This waste is considered to be non-hazardous. Clean scrap may be reprocessed. Incineration may be used to recover energy value. May be disposed of by landfill in accordance with local regulations. Certain packages are returnable. Please consult your local office for further details. Ensure that all packaging is disposed of safely.

14. TRANSPORT INFORMATION

Not Classified as Dangerous for Transport.

15. REGULATORY INFORMATION

Hazard Symbol: Xi

Risk Phrases: R43: May cause sensitisation by skin contact.

Safety Phrases: S24: Avoid contact with skin.

EC Classification: IRRITANT

16. OTHER INFORMATION

This data sheet was prepared in accordance with Directive 2001/58/EC.

The information contained does not constitute the users own assessment of workplace risk as required by other Health and Safety legislation. No claim is made for completeness and all applicable laws and regulation have to be considered.

GLOSSARY

OES: Occupational Exposure Standard (UK HSE EH40)

LTEL: Long Term Exposure Limit

STEL: Short Term Exposure Limit

TWA: Time Weighted Average

Full text of R Phrases

R2: Risk of explosion by shock, friction, fire or other sources of ignition

R36: Irritating to eyes.

R43: May cause sensitisation by skin contact.

SAFETY DATA SHEET

MATERIAL SAFETY DATA SHEET

Company:	WHW PLASTICS Therm Rd, Cleveland St, Hull, East Yorkshire HU8 7BF United Kingdom	Distributed by:
Telephone:	+44 (0)1482 329154	
Fax:	+44 (0)1482 217140	

2. Commercial Product Name: COLD CURE / REPAIR LIQUID				
Use: Production of artificial teeth, dentures or reactive coatings.				
2.1 Chemical Characterisation: Preparation based on Methyl Methacrylate Monomer				
This product contains the following hazardous components:				
Ingredient:	CAS No.	EC No.	Concentration by weight	Classification and R Phrases
Methyl methacrylate (stabilised)	80-62-6	203-291-4	>94.5%	F, Xi R11-37/38-43
Dimethyl -p- toluidine	99-97-8	202-805-4	<1.6%	T, R23/24/25R33, R52, R53
Ethylene glycol dimethacrylate	97-90-5	202-617-2	<3.22%	XN,XI

3. Hazards Identification:
3.1 Principal Hazard: This product contains a mixture based on methyl methacrylate, which has a long term exposure limit (LTEL) of 50ppm (8 hour TWA), with a short term exposure limit (STEL) of 100 ppm (15 minute reference period) Liquid methyl methacrylate is irritating to the skin and respiratory system. May cause sensitisation by skin contact. Prolonged and repeated skin contact can cause dermatitis. The vapour, in high concentrations, can cause respiratory irritation and anaesthetic effects.
EC Classification: Highly flammable and Harmful

4. First-Aid Measures:
4.1 Skin: Remove contaminated clothing. Wash the affected area with plenty of soap and water and continue to wash for at least five minutes.
4.2 Eyes: In case of contact with eyes, immediately irrigate with eyewash solution or clean water, holding the eyelids apart for at least two minutes. Seek medical advice.
4.3 Inhalation: Remove patient to fresh air. Apply artificial respiration if breathing shows signs of failing. Seek medical attention.
4.4 Ingestion: Do not induce vomiting. If swallowed seek medical advice immediately and show the container, label or safety data sheet.

5. Fire Fighting Measures: Highly flammable. The vapour is heavier than air; beware of pits and confined spaces. The vapour may travel a considerable distance to a source of ignition and flashback.
5.1 Extinguishing Media Suitable: Dry Powder, Carbon Dioxide, Foam or Gas. Keep fire exposed containers cool by spraying with water. Not to be used: Water
5.2 Special Exposure Hazards: The following vapours may arise during fires: Methacrylate Monomer Vapours, carbon monoxide, carbon dioxide.

6. Accidental Release Measures:
6.1 Eliminate sources of ignition. Spillages should be cleaned immediately with suitable absorbent material, E.g. Sand or Fullers earth and disposed of in accordance with local regulations. Spillages or uncontrolled discharges into watercourses must be alerted to the appropriate regulatory body. Ensure that PPE is worn as advised in Section 8.

7. Handling and Storage:
7.1 Handling: This product contains flammable monomers and should be stored in well ventilated, no-smoking areas away from heat and naked flames. Electrical equipment should be spark and flame proof. Take precautions against static discharge.

7.2 Storage: It should be stored away from acids, alkalis azo- and peroxide catalysts and oxidising agents. The storage temperature should be maintained below 25°C.

7.3 Specific Uses: In conjunction with polymers as part of denture repair and relining systems

8. Exposure Controls and Personal Protection:

8.1 Respiratory Protection: Wear suitable respiratory equipment if exposure to levels above the OEL is likely. Selection of suitable equipment should be based on intended use and an assessment of performance data. Where an air purifying filter is necessary, it should conform to Type A (EN141 or EN405). Check with the protective equipment manufacturers

8.2 Hand Protection: According to glove manufacturers data, the most appropriate gloves for extensive contact with methyl methacrylate are of nitrile rubber. Gloves should be changed regularly to avoid permeation of the solvent. However glove performance can vary widely and the end user should take appropriate advice from the PPE supplier taking into account the conditions under which the gloves will be used.

8.3 Eye Protection: Goggles or full face shield

8.4 Industrial Hygiene: Barrier creams should be used routinely by all personnel using solvent based products.

9. Physical and Chemical Properties:

9.1 Form:		Liquid		
9.2 Colour:		Clear		
9.3 Odour:		Typical, pungent, ester like		
9.4 Density:	(20 °C)	ca. 0.95	g/cm ³	
9.5 Vapour Pressure:	(20 °C)	36.8	mbar	(Highly volatile)
9.6 Solubility in Water:	(20 °C)	1.6%	w/w	(Sparingly soluble)
9.7 Flash point:		10	°C	
9.8 Ignition Temperature:		421	°C	
9.9 Explosion Limits:	Lower: 2.1 % Upper: 12.5 %			

10. Stability and Reactivity:

10.1 Thermal Decomposition: Does not decompose up to auto-ignition temperature

10.2 Hazardous Decomposition Products: Smoke and oxides of carbon.

10.3 Hazardous Reactions: Stable in the presence of inhibitor. Susceptible to polymerisation initiated by prolonged heating or in the presence of catalysts such as peroxy or azo compounds, strong acids, alkalis and oxidising agents

11. Toxicological Information:

Methyl Methacrylate is irritating to the skin and eyes. The vapour of methyl methacrylate monomer, in high concentrations may cause respiratory irritation, dizziness, drowsiness and temporary confusion, ultimately leading to unconsciousness. There is no evidence that methyl methacrylate monomer produces a carcinogenic effect in humans or animals. Rat oral LD₅₀ 7000-9000 mg/kg. Details on first-aid measures are given in Section 4.

12. Ecological Information:

The product is sparingly soluble in water and has a high potential for bioaccumulation. It is partially biodegradable in water, and of low toxicity to fish LC₅₀ (bluegill catfish)/96h = 232mg/l

13. Disposal Information:

Within the EU this material should be regarded as a 'special waste' (see relevant national legislation for special wastes and EC Hazardous Waste Directive 91/689/EEC, as amended) and disposed of appropriately. The preferred disposal route is by controlled incineration at an approved site, in accordance with local or national regulations. The packaging should be disposed of with due care (e.g. UK Duty of Care regulations), ensuring that the package is completely emptied. In some cases the packaging itself may be regarded as a waste requiring special treatment. If in any doubt please seek specialist advice from a competent authority.

14. Transport Information:

Proper Shipping Name	GGVSee/IMDG:	UN Number:	ICAO/IATA-DGR:	RID/ADR:
Flammable Liquids n.o.s.	Page 3230, PG 2	1993	3(ii)	339; 3,3(b)

15. Regulatory Information:	
15.1 Risk Phrases:	15.2 Safety Phrases:
R11 Highly Flammable	S24 Avoid contact with skin
R20/21/22 Harmful by inhalation, in contact with skin and if swallowed	S37 Wear suitable gloves
R33 Danger of cumulative effects	S46 If swallowed, seek medical advice immediately and show this container or label
R37/38 Irritating to respiratory system and skin	S60 This material and its container must be disposed of as hazardous waste
R43 May cause sensitisation by skin contact	
15.3 Hazard Symbols: Flaming Torch F+, St Andrews Cross Xn	15.4 Warning Label Flammable Diamond

16. Other Information
<p>The base data for this MSDS is stored in repair-liq.doc revision eight, dated November 2002. There are changes in Sections 2, 3, 5, 7 15 and 16.</p> <p>The information in this document contains important information to ensure the safe handling, storage and use of this product. The information in this document should be brought to the attention of the person in your organisation responsible for advising on safety matters.</p>