

## SAFETY DATA SHEET

### 1. SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

#### 1.1 Product identifier

Product Name	HEAT CURE LIQUID
Product Description	This product contains Methyl methacrylate and low levels of stabiliser.
Alternative names	Stabilized Methyl methacrylate monomer; 2-Propenoic acid, 2-methyl-, methyl ester; MMA; MMM.
Registration number(s)	01-2119452498-28-0006/07/08/09/10 01-2119452498-28-XXXX
CAS No.	000080-62-6
EC No.	201-297-1

#### 1.2 Relevant identified uses of the substance or mixture and uses advised against

Identified use(s)	Manufacture Formulation and re-packing Use at industrial sites Professional end use in formulations.
Uses advised against	Mixtures containing unreacted liquid monomer intended to come into contact with skin or nails.
Refer to Exposure Scenario Annex for further details.	

#### 1.3 Details of the supplier of the safety data sheet

WHW Plastics Ltd, Therm Road, Cleveland Street, Hull, East Yorkshire HU8 7BF, UK  
Tel: +44(0)1482 329154  
sales@whwplastics.com

#### 1.4 Emergency telephone number

+44(0)1482 329154

### 2. SECTION 2: HAZARDS IDENTIFICATION

#### 2.1 Classification of the substance or mixture

According to GB CLP Regulations, UK SI 2019/720 and UK SI 2020/1567

Flammable liquid Category 2.	H225
Skin corrosion / irritation Category 2.	H315
Skin sensitisation Category 1.	H317
STOT - single exposure Category 3.	H335

See section: 16.

#### 2.2 Label elements



Signal word  
Hazard statement(s)

Danger  
H225: Highly flammable liquid and vapour.  
H315: Causes skin irritation.  
H317: May cause an allergic skin reaction.  
H335: May cause respiratory irritation.

Precautionary statement(s)

P210: Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.  
P261: Avoid breathing vapours.  
P280: Wear protective gloves/protective clothing/eye protection/face protection.  
P302 + P352: IF ON SKIN: Wash with plenty of water.  
P501: Dispose of contents/container to hazardous waste in accordance with local, state or national legislation. Incinerate under approved controlled conditions, using incinerators suitable for the disposal of flammable organics.

### 2.3 Other hazards

Not classified as PBT or vPvB. Does not cause endocrine disruption.

## 3. SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

### 3.1 Substances

Substances in the product which may present a health or environmental hazard, or which have been assigned occupational exposure limits, are detailed below.

According to GB CLP Regulations, UK SI 2019/720 and UK SI 2020/1567

Hazardous Ingredient(s)	%W/W	EC No.	Registration number(s)	Hazard Class and Category Code(s)	Hazard statement Code(s)
Methyl methacrylate	>99	201-297-1	01-2119452498-28-XXXX 01-2119452498-28-0006 01-2119452498-28-0007 01-2119452498-28-0008 01-2119452498-28-0009 01-2119452498-28-0010	Flam. Liq. 2 Skin Irrit. 2 Skin Sens. 1 STOT SE 3	H225 H315 H317 H335

For full text of H phrases see section 16.

## 4. SECTION 4: FIRST AID MEASURES

### 4.1 Description of first aid measures

Inhalation IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTRE or doctor if you feel unwell.  
Skin Contact IF ON SKIN: Wash with plenty of water. If skin irritation or rash occurs: Get medical attention. Take off contaminated clothing and wash it before reuse.  
Eye Contact IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get immediate medical attention.  
Ingestion IF SWALLOWED: rinse mouth. Do NOT induce vomiting. Get immediate medical attention.

### 4.2 Most important symptoms and effects, both acute and delayed

Causes skin irritation. May cause respiratory irritation. May cause an allergic skin reaction.

### 4.3 Indication of any immediate medical attention and special treatment needed

None necessary.

## 5. SECTION 5: FIREFIGHTING MEASURES

### 5.1 Extinguishing media

Suitable Extinguishing Media In case of fire, use water spray, foam, dry powder or CO<sub>2</sub> for extinction. Keep containers cool by spraying with water if exposed to fire.  
Unsuitable extinguishing media Do not use water jet.

## 5.2 Special hazards arising from the substance or mixture

Highly flammable liquid and vapour. May polymerise on heating. Sealed containers may rupture explosively if hot.

## 5.3 Advice for firefighters

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

# 6. SECTION 6: ACCIDENTAL RELEASE MEASURES

## 6.1 Personal precautions, protective equipment and emergency procedures

Eliminate sources of ignition. Wear protective gloves and eye/face protection. Avoid breathing vapours. See section: 8

## 6.2 Environmental precautions

Avoid release to the environment. Spillages or uncontrolled discharges into watercourses must be alerted to the appropriate regulatory body.

## 6.3 Methods and material for containment and cleaning up

Collect spillage. Do not adsorb onto sawdust or other combustible materials. Transfer to a lidded container for disposal or recovery. Use only non-sparking tools.

## 6.4 Reference to other sections

See section: 8, 13

# 7. SECTION 7: HANDLING AND STORAGE

## 7.1 Precautions for safe handling

Do not eat, drink or smoke at the workplace. Wash thoroughly after handling.

Avoid contact with skin and eyes. Avoid breathing vapours. Use only outdoors or in a well-ventilated area. The vapour is heavier than air; beware of pits and confined spaces.

Ground container and receiving equipment. Use explosion proof electrical equipment. Use only non-sparking tools. Take precautionary measures against static discharge.

## 7.2 Conditions for safe storage, including any incompatibilities

Keep container tightly closed. Store in a well-ventilated place. Keep cool. Store locked up. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Protect from sunlight.

IMPORTANT: Methacrylates stored in bulk must be kept in contact with air (oxygen). Monomer vapours are uninhibited and may form polymers in vent or flame arresters, resulting in blockage of vents.

Storage temperature (°C): <40°C  
Preferably not exceeding 30°C.

Storage life: Provided proper storage and handling procedures are followed (see the Methacrylate Esters Safe Handling Manual) the product may be stored for up to 6 months from the date of receipt. Product stabilised with Topanol A at less than 25 ppm should be used within 3 months. Product stabilised with Topanol A at less than 2 ppm should be used within 1 week.

Incompatible materials: Polymerisation catalysts, such as peroxy or azo compounds, strong acids, alkalis and oxidising agents. Oxides and salts of transition metals. Organic Nitrogen containing compounds. Cyclohexanone/Cyclohexenol tautomer.

## 7.3 Specific end use(s)

Manufacture of monomer.

Use in production of formulations.

End use as monomer in formulations. (incl. re-packing)

Use as intermediate.

End use as monomer in a dry polymerisation process (sheets).

End use as monomer in a dry polymerisation process (substance polymerisation, solvent polymerisation).

End use as monomer in a wet polymerisation process (emulsion polymerisation).

End use as monomer in a wet polymerisation process (suspension polymerisation, bead polymerisation).

Polymer processing.

Polymer uses ; Industrial end use in formulations.

Professional end use in formulations.

Polymer uses ; Professional end use in formulations.

Consumer end use in formulations.

Polymer uses ; Consumer end use in formulations.

Polymer uses ; Consumer end use as polymer and service life in articles.

Refer to Exposure Scenario Annex for further details.

## 8. SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

### 8.1 Control parameters

Substance	CAS No.	LTEL ppm (8Hr TWA)	LTEL mg/m <sup>3</sup> (8Hr TWA)	STEL ppm	STEL mg/m <sup>3</sup>	Notes
Methyl methacrylate	000080-62-6	50	208	100	416	WEL

Substance	CAS No.	DNEL	Oral	Inhalation	Dermal	
Methyl methacrylate	000080-62-6	Worker - Long Term - Local effects	<sup>1</sup>	208 mg/m <sup>3</sup>	1.5 mg/cm <sup>2</sup>	
		Worker - Long Term - Systemic effects	<sup>1</sup>	348.4 mg/m <sup>3</sup> *	13.67 mg/kg body weight/day	
		Worker - Short term - Local effects	<sup>1</sup>	416 mg/m <sup>3</sup>	1.5 mg/cm <sup>2</sup>	
		Worker - Short term - Systemic effects	<sup>1</sup>	<sup>2</sup>	<sup>3</sup>	
		Consumer - Long Term - Local effects	<sup>1</sup>	104 mg/m <sup>3</sup>	1.5 mg/cm <sup>2</sup>	
		Consumer - Long Term - Systemic effects		8.2 mg/kg body weight/day	74.3 mg/m <sup>3</sup>	8.2 mg/kg body weight/day
		Consumer - Short term - Local effects	<sup>1</sup>	208 mg/m <sup>3</sup>	1.5 mg/cm <sup>2</sup>	
		Consumer - Short term - Systemic effects	<sup>1</sup>	<sup>2</sup>	<sup>3</sup>	

Substance	CAS No.		PNEC
Methyl methacrylate	000080-62-6	Fresh water	940 µg/l
		Fresh water (sediment)	10.2 mg/kg dry weight
		Sea water	94 µg/l
		Sea water (sediment)	1.02 mg/kg dry weight
		Sewage Treatment Plant	10 mg/l
		Soil	1.48 mg/kg dry weight
		Air	<sup>3</sup>

<sup>1</sup> Low oral toxicity : DNEL not established.

<sup>2</sup> Long term DNEL is protective of effects resulting from short term exposure.

<sup>3</sup> No identified hazard.

\* Exposure assessment DNEL = 208 mg/m<sup>3</sup>

### 8.2 Exposure controls

#### Appropriate engineering controls

Do not eat, drink or smoke at the workplace. Use in closed systems or provide adequate LEV if natural ventilation is insufficient, to ensure that the DNEL/OEL is not exceeded. The maximum duration for safe use is dependant upon concentration, operating conditions and Risk Management Measures. Ensure effective control measures as specified in the appropriate Exposure Scenario are applied. 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.

#### Individual protection measures, such as personal protective equipment (PPE)

Ensure PPE as specified in the appropriate Exposure Scenario are applied.

##### Eye/face protection



Wear eye/face protection. Safety spectacles/goggles/full face shield.

##### Skin protection



Wear suitable gloves.

For splash protection: Butyl; EN 374.

For immersion protection: Butyl; 0.7 mm or greater; EN 374.

See the Methacrylate Monomers Safe Use of Gloves Best Practice Guidelines.

Suitability of gloves should be confirmed with glove manufacturer. Change gloves, if contamination occurs or duration of activity exceeds breakthrough time. Breakthrough time of the glove material: refer to the information provided by the gloves' producer.

##### Respiratory protection



Wear suitable respiratory protective equipment if engineering controls are insufficient, or not present, and exposure to levels above the DNEL is likely. A suitable mask with filter type A (EN141 or EN405) may be appropriate. In the event of formation of particularly high levels of vapour a self contained breathing apparatus may be appropriate.

#### Environmental exposure controls

Ensure effective control measures as specified in the appropriate Exposure Scenario are applied.

## 9. SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

### 9.1 Information on basic physical and chemical properties

Appearance	Liquid. Clear/colourless.
Odour	Characteristic strong and acrid.
Odour Threshold (ppm)	0.75
pH	Not applicable.
Melting Point (°C)	-48
Boiling Point (°C)	100.36
Flash Point (°C)	10 [Closed cup]
Relative Evaporation Rate (Ether = 1)	Not available.
Flammability (solid, gas)	Not applicable.
Flammable Limits (Lower) (%v/v)	2.1
Flammable Limits (Upper) (%v/v)	12.5
Vapour pressure (Pascal)	3700 at 20°C
Vapour Density (Air=1)	3.5
Density (g/ml)	0.94 at 20°C
Solubility (Water)	Slightly soluble. 1.53 g/100g at 20°C
Solubility (Other)	Miscible with most organic solvents.
Partition Coefficient (n-Octanol/water)	1.38
Auto Ignition Temperature (°C)	435
Decomposition Temperature (°C)	Not applicable.
Viscosity (mPa. s)	0.53 at 20°C
Kinematic Viscosity (mm <sup>2</sup> /s)	Not available.
Explosive properties	Not applicable.
Oxidising properties	Not applicable.

### 9.2 Other information

Self accelerating polymerization temperature (SAPT)(°C)	>55
Particle characteristics	Not applicable.
Refractive Index	1.412
Minimum ignition energy (mJ)	0.89 - 0.97 at 23°C
Heat of Polymerization	54 kJ/mol
Dielectric constant	7.89 at 20°C
Heat of Vaporization	39.5 kJ/mol
Specific heat	1.9 kJ/kg -K
Electrical resistivity	9,311 x 10 <sup>9</sup> Ohm.cm at 25°C
Electrical conductivity	10700 pS/m
Electrical relaxation time	11.7 ps
Variation of density with temperature	-0.00117 g/cm <sup>3</sup> per °C

## 10. SECTION 10: STABILITY AND REACTIVITY

### 10.1 Reactivity

Will exothermically polymerise in the presence of initiators.

### 10.2 Chemical stability

Stable in the presence of inhibitor and oxygen.

### 10.3 Possibility of hazardous reactions

Susceptible to polymerisation initiated by prolonged storage or the presence of catalyst.  
Self accelerating polymerization temperature (SAPT)(°C) : >55

### 10.4 Conditions to avoid

Heat and direct sunlight.

### 10.5 Incompatible materials

Polymerisation catalysts, such as peroxy or azo compounds, strong acids, alkalis and oxidising agents. Oxides and salts of transition metals. Organic Nitrogen containing compounds. Cyclohexanone/Cyclohexenol tautomer.

### 10.6 Hazardous decomposition products

Does not decompose up to auto-ignition temperature.

## 11. SECTION 11: TOXICOLOGICAL INFORMATION

### 11.1 Information on toxicological effects

#### Acute toxicity

##### Ingestion

Based upon the available data, the classification criteria are not met.  
Low oral toxicity, but ingestion may cause irritation of the gastrointestinal tract.

##### Ingestion toxicity data

LD50 (oral) > 5000 mg/Kg

##### Inhalation

Based upon the available data, the classification criteria are not met.

May cause drowsiness and dizziness.

##### Inhalation toxicity data

LC50 (vapour) 7093 ppm (29.8 mg/l )(4 hour(s) )

##### Skin Contact

Based upon the available data, the classification criteria are not met.

##### Skin contact toxicity data

LD50 (dermal) > 5000 mg/Kg

##### Skin corrosion/irritation

Causes skin irritation. Repeated and/or prolonged contact may cause dermatitis.  
Moderate irritant to rabbit skin.

##### Serious eye damage/irritation

Based upon the available data, the classification criteria are not met.

High vapour concentration will cause irritation.

Slight irritant to rabbit eyes. (OECD 405)

##### Sensitisation

May cause an allergic skin reaction.

Skin sensitisation has been reported in studies with mice (OECD 429).

Evidence of contact sensitisation in man.

Not a respiratory sensitizer. Irritant to the respiratory system and high concentrations may aggravate pre-existing conditions.

##### Carcinogenicity

Based upon the available data, the classification criteria are not met.

No evidence of carcinogenicity. (OECD 451)

##### Germ cell mutagenicity

Based upon the available data, the classification criteria are not met.

In vitro Methyl methacrylate has the potential for induction of mutagenic effects, esp. clastogenicity, however this potential is limited to high doses with strong toxic effects. On the basis of the lack of such effects in vivo Methyl methacrylate is not classified for mutagenicity.

Salmonella typhimurium (TA1535, 1537, 97, 98, 100) negative (OECD 471)

Rodent Dominant Lethal Test negative (OECD 478)

In vivo mammalian erythrocyte micronucleus test negative (OECD 474)

In vitro mammalian chromosomal aberration test positive (OECD 473)

In vitro mammalian cell gene mutation test positive (OECD 476)

##### Reproductive toxicity

Based upon the available data, the classification criteria are not met.

NOAEC (Fetotoxicity, Teratogenicity) (inhalation) (rat) > 2028 ppm (OECD 414)

NOAEL (Developmental Toxicity) (oral) (rabbit) 450 mg/kg Body weight

##### STOT - single exposure

May cause respiratory irritation. Exposure to high concentrations may produce adverse effects on the nasal epithelium.

STOT - repeated exposure

Based upon the available data, the classification criteria are not met.  
NOEL (oral) (rat) (104 weeks) >2000 ppm  
NOAEC (inhalation) (rat) (104 weeks) 100 ppm (OECD 453)  
NOAEC (inhalation) (mouse) (14 weeks) 1000 ppm (OECD 412)  
Repeated exposure of animals by inhalation to levels at or above the occupational exposure level produces adverse effects on the nasal epithelium (levels of 100 and 400ppm).

Aspiration hazard

Based upon the available data, the classification criteria are not met.

## 12. SECTION 12: ECOLOGICAL INFORMATION

### 12.1 Toxicity

Low toxicity to fish.  
LC50 (fish) (typically) >100 mg/l  
LC50 (fathead minnow) (96 hour) (static) 130 mg/l  
Harmful to aquatic invertebrates.  
EC50 (Daphnia magna) (48 hour) 69 mg/l  
Low toxicity to algae.  
EC50 (Selenastrum capricornutum) (96 hour) 170 mg/l  
NOEC (zebra fish) (35 days) (flow through) 8.4 mg/l

### 12.2 Persistence and degradability

Readily biodegradable.  
Chemical Oxygen Demand (COD): 88% (28 days)  
Inherent Biodegradation:  
Dissolved Organic Carbon Removal (DOC removal): >95% (28 days)  
The substance is substantially removed in biological treatment processes.

### 12.3 Bioaccumulative potential

The product has low potential for bioaccumulation.

### 12.4 Mobility in soil

The product is predicted to have high mobility in soil.

### 12.5 Results of PBT and vPvB assessment

Not classified as PBT or vPvB.

### 12.6 Other adverse effects

None known.

## 13. SECTION 13: DISPOSAL CONSIDERATIONS

Avoid release to the environment. Decontaminate empty drums before recycling.

### 13.1 Waste treatment methods

Dispose of contents/container to hazardous waste in accordance with local, state or national legislation. Incinerate under approved controlled conditions, using incinerators suitable for the disposal of flammable organics. Allocation of a waste code number, according to the European Waste Catalogue, should be carried out in agreement with the regional waste disposal company.

## 14. SECTION 14: TRANSPORT INFORMATION

### 14.1 UN number

1247

### 14.2 UN Proper Shipping Name

METHYL METHACRYLATE MONOMER, STABILIZED

### 14.3 Transport hazard class(es)

Class	3
IMDG Class	3
IMDG EMS	F-E, S-D
IATA	3
ADR Classification Code	F1

ADR HIN	339
ADR Transport Category	2
Tunnel Restriction Code	D/E
RID	3
ADN	3
UK CDG Road: Emergency Action Code	3YE

#### 14.4 Packing group

II

#### 14.5 Environmental hazards

Environmentally hazardous substance	No.
Marine Pollutant	No.

#### 14.6 Special precautions for user

No special requirements.

#### 14.7 Transport in bulk according to Annex II of MARPOL and the IBC Code

Ship type	2
Pollution category	Y

## 15. SECTION 15: REGULATORY INFORMATION

### 15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

GB CLP Regulations, UK SI 2019/720 and UK SI 2020/1567  
EH40/2005 Workplace exposure limits

### 15.2 Chemical Safety Assessment

A Chemical Safety Assessment has been carried out for this substance/mixture.

## 16. SECTION 16: OTHER INFORMATION

This Safety Data Sheet was prepared in accordance with REACH Regulation (EC) No 1907/2006, as amended by UK REACH Regulations SI 2019/758 and SI 2020/1577.

The following sections contain revisions or new statements: 1, 2, 3, 8, 9, 15, 16

Date of preparation: 1 -April- 2023

### LEGEND

Note: Not all of the following are necessarily contained in this Safety Data Sheet:

IOELV: Indicative Occupational Exposure Limit Value

WEL: Workplace Exposure Limit (UK HSE EH40)

Bmgv: Biological Monitoring Guidance Value

Sen: Capable of causing respiratory sensitisation

Sk: Can be absorbed through skin

Carc: Capable of causing cancer and/or heritable genetic damage

CHAN: Chemical Hazard Alert Notice

COM: The company aims to control exposure in its workplace to this limit

LTEL: Long Term Exposure Limit

STEL: Short Term Exposure Limit

TWA: Time Weighted Average

PNEC: Predicted No-Effect Concentration

DNEL: Derived No-Effect Level

STOT: Specific Target Organ Toxicity

Repr.: Reproductive toxicity

Aquatic acute/chronic: Hazardous to the aquatic environment

### References:

REACH Registration Chemical Safety Report

Methacrylate Esters Safe Handling Manual 2019

Methacrylate Monomers Safe Use of Gloves Best Practice Guidelines 2013



Full text of H phrases                    H225: Highly flammable liquid and vapour.  
    H315: Causes skin irritation.  
    H317: May cause an allergic skin reaction.  
    H335: May cause respiratory irritation.

Methacrylate monomers are used safely in a wide variety of applications including some areas of personal hygiene. We are aware of some reports suggesting that use of methacrylate monomers in fingernail extension applications may result in loosening or shedding of the nails of the user as well as respiratory or other effects in those exposed to high levels of the vapors. WHW Plastics UK Limited has performed no technical or clinical testing and has no data to support the use of methacrylate monomers in this application. Under no circumstances should methacrylate monomers be used in this or similar applications.

**MEDICAL USE: CAUTION: DO NOT USE IN MEDICAL APPLICATIONS INVOLVING IMPLANTATION IN THE HUMAN BODY.**  
WHW Plastics UK Limited has performed no clinical testing on the use of this product in any medical application. WHW Plastics UK Limited has no data to support the use of this product in any medical application. This product was not designed or manufactured for use in implantation in the human body or in contact with internal body fluids or tissues. WHW Plastics UK Limited has neither sought, nor received, approval from any regulatory agency for the use of this product in implantation in the human body or in contact with internal body fluids or tissues.

For further information on the properties and uses, or storage and handling, of Methyl Methacrylate refer to Product data sheet; Methyl Methacrylate (TS/C/2108/4), or the Methacrylate Esters Safe Handling Manual.

It is the responsibility of the end-product manufacturer to identify all market and use-specific regulations and to ensure compliance with these regulations.

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