

## Safety Data Sheet

Safety Data Sheet (in compliance with Regulation (EC) 1907/2006, Regulation (EC) 1272/2008 and Regulation (EC) 453/2010)

Date Issued: 22 June 2009  
 Document Number: 71045MS  
 Date Revised: 26 August 2011  
 Revision Number: 3

### 1. PRODUCT IDENTIFICATION

<b>Trade Name (as labeled):</b>	<b>TempART™ Heat-Cure Liquid</b>
<b>Chemical Name/Classification:</b>	Methyl methacrylate monomer, stabilized
<b>Product Identifier (Part/Item Number):</b>	71045
<b>U.N. Number:</b>	UN 1247
<b>U.N. Dangerous Goods Classification:</b>	3, PG II
<b>Recommended Use:</b>	Impression material
<b>Restrictions on Use:</b>	For professional use only
<b>Manufacturer/Supplier Name:</b>	Sultan Healthcare
<b>Manufacturer/Supplier Address:</b>	411 Hackensack Avenue, 9 <sup>th</sup> Floor Hackensack, NJ
<b>Manufacturer/Supplier Telephone Number:</b>	1-201-871-1232 or 800-637-8582 (Product Information)-
<b>Emergency Contact Telephone Number:</b>	800-535-5053 (INFOTRAC) 1-352-323-3500 (Outside the United States – Call Collect)
<b>Email address:</b>	<a href="mailto:customer.service@sultanhc.com">customer.service@sultanhc.com</a>

### 2. HAZARD(S) IDENTIFICATION

**Hazard/Danger Classification (Regulation EC) No. 1272/2008 [CLP]:**

Health	Environmental	Physical
Skin Irritation Category 2 Specific Target Organ Toxicity – Single Exposure Category 3 Skin Sensitization Category 1	None	Flammable Liquid Category 2

**EU Classification (67/548/EEC as amended):** Highly Flammable (F), Irritant (Xi)

**EU Risk (R) and Safety (S) Phrases:** R11, R37/38, R43, S16, S24, S37, S46

**Refer to Section 16 for the full text of the EU Classifications and R Phrases.**

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**Label Elements:**

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**Signal Word: Danger!**

<b>Hazard Statements</b>	<b>Precautionary Statements</b>
H225 Highly flammable liquid and vapor. H315 Causes skin irritation. H317 May cause an allergic skin reaction H335 May cause respiratory irritation.	P210 Keep away from heat/sparks/open flames/hot surfaces. – No smoking. P233 Keep container tightly closed. P242 Use only non-sparking tools. P243 Take precautionary measures against static discharge. P261 Avoid breathing mist/vapors/spray. P264 Wash thoroughly after handling. P271 Use only outdoors or in a well-ventilated area. P272 Contaminated work clothing should not be allowed out of the workplace. P280 Wear protective gloves/protective clothing/eye protection/face protection. P302 + P352 IF ON SKIN: Wash with plenty of soap and water. P333 + P313 If skin irritation or rash occurs: Get medical advice/attention. P363 Wash contaminated clothing before reuse. P304 + P340 IF INHALED: Remove to fresh air and keep at rest in a position comfortable for breathing. P312 Call a POISON CENTER or doctor/physician if you feel unwell. P370 + P378 In case of fire: Use carbon dioxide, foam, water spray or water fog for extinction. P403 + P235 Store in a well-ventilated place. Keep cool. P405 Store locked up. P501 Dispose of contents/container in accordance with local and national regulations.



Contains Methyl Methacrylate

**US Hazard Classification:** Hazardous**3. COMPOSITION AND INFORMATION ON INGREDIENTS**

<b>Hazardous Components</b>	<b>C.A.S. # / EC#</b>	<b>IUPAC Name</b>	<b>WT %</b>
Methyl Methacrylate	80-62-6 / 201-297-1	Methyl Methacrylate	100%

**Refer to Section 16 for the full text of the EU Classifications and R Phrases.**





#### 4. FIRST-AID MEASURES

Routes of Exposure	First Aid Instructions
Eye	Flush eyes with water for at least 15 minutes, holding the eyelids apart. Get immediate medical attention.
Skin	Remove contaminated clothing. Wash skin thoroughly with soap and water. If irritation or other symptoms develop, get medical attention. Launder clothing before re-use.
Inhalation	Remove victim to fresh air. If breathing is difficult, have qualified personnel administer oxygen. If breathing has stopped, administer artificial respiration. Get immediate medical attention.
Ingestion	If small quantities are swallowed, rinse out mouth with water. Do not induce vomiting. Never give anything by mouth to an unconscious or drowsy person. Get immediate medical attention.
Most important symptoms of exposure	May cause respiratory tract, eye and skin irritation. Prolonged or repeated contact may cause allergic skin reaction (skin rash). Inhalation of vapors may cause dizziness, headache, and other central nervous system effects.
Other	None known.
<b>Note to Physicians (Treatment, Testing, and Monitoring):</b> Treatment of overexposure should be directed at the control of symptoms and clinical conditions.	

#### 5. FIRE-FIGHTING MEASURES

<b>Suitable Extinguishing Media:</b>	Use carbon dioxide, foam, water spray or water fog.
<b>Fire Fighting Procedures:</b>	Water may be ineffective unless used as a fine spray or fog. Use water to cool fire-exposed containers.
<b>Specific Hazards Arising from the Chemical:</b>	Vapors are heavier than air and may travel to ignition source and flash back. Heat of fire may cause an exothermic auto polymerization reaction. Emits toxic fumes under fire conditions. Closed containers may explode due to pressure build up when exposed to extreme heat.
<b>Precautions for Fire Fighters:</b>	Do not enter fire area without proper protection. Firefighters should wear full emergency equipment and approved positive pressure self-containing breathing apparatus.

#### Recommended Protective Equipment for Fire Fighters:

EYES/FACE	SKIN	RESPIRATORY	THERMAL
			





#### 6. ACCIDENTAL RELEASE MEASURES

**Personal Precautions, PPE and Emergency Procedures:** Provide explosion-proof ventilation. Avoid contact with skin, eyes or clothing. Avoid breathing vapors. Wear appropriate protective clothing as described in Section 8. Eliminate all ignition sources.

**Environmental Precautions:** Prevent spill from entering sewers and water courses. Report releases as required by local and national authorities.

**Methods and Materials for Containment and Clean-up:** Contain and absorb spills with inert material and transfer to a suitable container for disposal.

**Recommended Personal Protective Equipment for Containment and Clean-up:**

EYES/FACE	SKIN	RESPIRATORY	THERMAL
			

**7. HANDLING AND STORAGE**

**Precautions for Safe Handling:** Avoid contact with eyes, skin, and clothing. Avoid breathing vapors or mist. Wash thoroughly after handling. Wear protective clothing and equipment as described in Section 8. Use with adequate ventilation. Ground container when pouring. Keep away from heat, sparks, flames and all sources of ignition. Do not expose to direct sunlight. Empty containers retain product residues and can be hazardous. Follow all MSDS precautions when handling empty containers.

**Conditions for Safe Storage:** Store in a cool, dry, well ventilated area. Keep container tightly closed when not in use. Do not store in direct sunlight. Prevent moisture contact. Protect from physical damage. Keep away from oxidizers and other incompatible materials.

**8. EXPOSURE CONTROLS/PERSONAL PROTECTION**

**Occupational Exposure Limits:**

Methyl Methacrylate	United States	50 ppm TWA ACGIH TLV, 100 ppm STEL 100 ppm TWA OSHA PEL
	Germany	50 ppm TWA DFG MAK
	United Kingdom	50 ppm TWA UK OEL, 100 ppm STEL
	France	100 ppm INRS VME, 200 ppm VLCT
	Spain	50 ppm TWA VLA-ED, 100 ppm VAL-EC
	Italy	None Established
	European Union	50 ppm TWA EU IOEL, 100 ppm STEL

**Biological Exposure Limits:** None Established

**Appropriate Engineering Controls:** Use ventilation that is adequate to keep employee exposure to airborne concentrations below exposure limits. Use explosion-proof equipment where required.

**Individual Protection Measures (PPE)**



**Specific Eye/face Protection:** Wear safety chemical goggles when the possibility exists for eye contact due to splashing or spraying material.

**Specific Skin Protection:** Wear nitrile rubber or other impervious gloves to prevent skin contact. Wear impervious clothing if needed to prevent any contact with this product, such as gloves, apron, boots, or whole body suit. Recommended glove: Nitrile rubber. Contact glove supplier for thickness and breakthrough times.

**Specific Respiratory Protection:** None required with adequate ventilation. An approved air-purifying respirator with an organic vapor cartridge or canister may be permissible under certain limited circumstances where airborne concentrations are expected to exceed exposure limits. Protection provided by air purifying respirators is limited. Use a positive pressure air supplied respirator if there is any potential for an uncontrolled release, exposure levels are not known, or any other circumstances where air purifying respirators may not provide adequate protection. Selection and use of respiratory equipment must be in accordance with appropriate regulations and good industrial hygiene practice.

**Specific Thermal Hazards:** Not applicable

**Recommended Personal Protective Equipment:**

EYES/FACE	SKIN	RESPIRATORY	THERMAL
			

**Environmental Exposure Controls:** Do not allow spills to enter sewers or waterways

**General Hygiene Considerations and Work Practices:** Avoid contact with the eyes, skin and clothing. Wash thoroughly with soap and water after handling.

**Protective Measures During Repair and Maintenance of Contaminated Equipment:** Wear appropriate protective clothing and equipment.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

<b>Appearance:</b>	Colorless liquid	<b>Explosive limits:</b>	LEL: 1.7% UEL: 8.2%
<b>Odor:</b>	Acrid acrylic odor	<b>Vapor pressure:</b>	38.5 mm Hg at 25 deg C
<b>Odor threshold:</b>	Not available	<b>Vapor density:</b>	3.45 (Air = 1)
<b>pH:</b>	Not available	<b>Relative density:</b>	0.94
<b>Melting/freezing point:</b>	-53.5°F / -47.5°C	<b>Solubility:</b>	1.6% by wt.
<b>Initial boiling point and range:</b>	214°F / 101°C	<b>Partition coefficient: n-octanol/water:</b>	1.38 (log Kow)
<b>Flash point:</b>	50°F (10°C) TCC	<b>Auto-ignition temperature:</b>	Not available
<b>Evaporation rate:</b>	3.1 (Butyl acetate = 1)	<b>Decomposition temperature:</b>	Not available

<b>Flammability:</b>	Flammable	<b>Viscosity:</b>	Not available
<b>Explosive Properties:</b>	Vapors may be explosive in confined areas	<b>Oxidizing Properties:</b>	None

## 10. STABILITY AND REACTIVITY

**Reactivity:** Polymerization can occur.

**Chemical Stability:** Stable when stabilized.

**Possibility of Hazardous Reactions:** Polymerization can occur. Conditions leading to polymerization are excessive heat, oxygen-free atmosphere, inhibitor depletion (due to excessive aging), direct sunlight, and contamination with polymerization catalysts.

**Conditions to Avoid:** Heat, sparks, open flame and other ignition sources, elevated temperatures, direct sunlight.

**Incompatible materials:** Avoid contact with oxidizing agents, reducing agents, acids, and bases.

**Hazardous Decomposition Products:** Carbon monoxide, carbon dioxide, methyl methacrylate, and irritating smoke and fumes.

## 11. TOXICOLOGICAL INFORMATION

**Potential Health Effects:**

**Eyes:** Liquid and vapors can cause irritation with redness, tearing and blurred vision. Corneal damage can occur.

**Skin:** May cause skin irritation with allergic skin reaction (skin sensitization).

**Ingestion:** Causes irritation, a burning sensation of the mouth, throat and gastrointestinal tract and abdominal pain.

**Inhalation:** May cause respiratory tract irritation with coughing, mucous production and shortness of breath. High concentration is irritating to the respiratory tract and may cause dizziness, headache and anesthetic effects.

**Chronic Health Effects:** Prolonged or repeated overexposure may cause skin irritation or sensitization in some individuals, as well as kidney, lung, liver, and heart damage.

**Carcinogenicity:** The results of a 2-year inhalation studies conducted for NTP showed no evidence of carcinogenicity of methyl methacrylate for male rats exposed at 500 or 1,000 ppm and female rats exposed at 250, 500 or 1,000 ppm. In another study, no increase was seen in the number or type of tumors in either rats or hamsters from a chronic inhalation study. No carcinogenic activity was also reported in a chronic oral study. However, acute oral exposure studies and structure-activity relationship comparisons with other acrylates suggest that the introduction of a methyl group to the acrylate moiety (e.g., EA to MMA) negates carcinogenic activity. None of the components of this product are listed as carcinogens by OSHA, IARC, NTP, ACGIH or the EU Substances Directive.

**Mutagenicity:** Methyl methacrylate: Negative in AMES test, positive and negative in in-vitro studies. Negative in-vivo studies.

**Medical Conditions Aggravated by Exposure:** Individuals with pre-existing skin conditions may be at increased risk from exposure.

**Acute Toxicity Data:**

Methyl methacrylate: Oral rat LD50 7,800 mg/kg; Inhalation rat LC50 7,093 ppm/4 hr.

**Reproductive Toxicity Data:** Methyl methacrylate: In a study in rats, there were no developmental effects, although there were decreases in maternal body weight following inhalation of concentrations up to 8,315 mg/m<sup>3</sup>. There was no reduction in fertility in a dominant lethal assay in mice exposed to this compound at concentrations up to 36,900 mg/m<sup>3</sup> and no adverse effects on reproductive organs in repeated dose studies conducted to date.

**Specific Target Organ Toxicity (STOT):**

**Single Exposure:** Methyl methacrylate: In an inhalation study with dogs, a 2,000 ppm dose showed a drop in arterial blood pressure and GI motor activities. The lethal oral dose for methyl methacrylate is 6 to 9 g/kg in lab animals. Poisoned animals exhibit respiratory depression, and coma; also irritation of skin, eyes and respiratory tract.

**Repeated Exposure:** Methyl methacrylate: Impairment of locomotor activity and learning and behavioral effects on the brain were observed in rats exposed orally to 500 mg/kg bw/day for 21 days.

## 12. ECOLOGICAL INFORMATION

**Toxicity:**

Methyl methacrylate: Fathead minnow LC50 96h: 130 mg/L; Algae EC50 48h: 170 mg/L

**Persistence and Degradability:** Methyl methacrylate is readily biodegradable - 88% after 28 days.

**Bio-accumulative Potential:** The potential for bioaccumulate is expected to be low for methyl methacrylate.

**Mobility in Soil:** Methyl methacrylate is expected to have very high to high mobility in soil.

**Other Adverse Effects:** None known.

**Results of PBT/vPvB Assessment:** Not required.

## 13. DISPOSAL CONSIDERATIONS

**Regulations:** Dispose in accordance with local and national environmental regulations.

**Properties (Physical/Chemical) Affecting Disposal:** This product will polymerize when exposed to sunlight. Empty containers retain product residues and can be hazardous. Follow all MSDS precautions when handling empty containers.

**Waste Treatment Recommendations:** Dispose in accordance with national and local regulations.

## 14. TRANSPORT INFORMATION

<b>UN Number:</b>	ADR/RID: UN1247	IMDG: UN1247	IATA: UN1247	DOT: UN1247
<b>UN proper shipping name:</b>	ADR/RID: Methyl Methacrylate Monomer, Inhibited IMDG: Methyl Methacrylate Monomer, Inhibited IATA: Methyl Methacrylate Monomer, Inhibited DOT: Methyl Methacrylate Monomer, Inhibited			
<b>Transport hazard class(es):</b>	ADR/RID: 3	IMDG: 3	IATA: 3	DOT: 3
<b>Packaging group:</b>	ADR/RID: PG II	IMDG: PG II	IATA: PG II	DOT: PG II

<b>Environmental hazards:</b> ADR/RID: No	IMDG Marine pollutant: IATA: No	DOT: No
No		
<b>Special precautions for user:</b> Flammable Liquid		

**15. REGULATORY INFORMATION**

**U.S. Federal Regulations**

**Comprehensive Environmental Response and Liability Act of 1980 (CERCLA):** Releases above the RQ of 1,000 lbs (based on the RQ for methyl methacrylate of 1,000 lbs present at 100% max) must be reported to the National Response Center. Many states have more stringent release reporting requirements. Report spills required under federal, state and local regulations.

**Toxic Substances Control Act (TSCA):** This product is a medical device and not subject to chemical notification requirements.

**OSHA Hazard Classification:** Flammable Liquid, Irritant, Sensitizer, Target organ effects.

**Clean Water Act (CWA):** This material is not regulated under the Clean Water Act.

**Clean Air Act (CAA):** Methyl methacrylate is regulated under the Clean Air Act.

**Superfund Amendments and Reauthorization Act (SARA) Title III Information:**

**SARA Section 311/312 (40 CFR 370) Hazard Categories:**

<b>Immediate Hazard:</b>	Yes	<b>Pressure Hazard:</b>	No
<b>Delayed Hazard:</b>	Yes	<b>Reactivity Hazard:</b>	Yes
<b>Fire Hazard:</b>	Yes		

**This product contains the following toxic chemical(s) subject to reporting requirements of SARA Section 313 (40 CFR 372):**

Components	C.A.S. #	WT %
Methyl Methacrylate	80-62-6	100

**State Regulations**

**California:** This product contains the following chemicals(s) known to the State of California to cause cancer, birth defects or reproductive harm:

Components	C.A.S. #	WT %
None		

**International Regulations**

**EU REACH:** The substances in this product comply with the EU REACH regulation as applicable.



## 16. OTHER INFORMATION

Full text of Classification abbreviations used in Section 2 and 3:

F Highly Flammable

Xi Irritant

R11 Highly flammable.

R37/38 Irritating to respiratory system and skin

R43 May cause sensitization by skin contact.

S16 Keep away from sources of ignition - No smoking.

S24 Avoid contact with skin.

S37 Wear suitable gloves.

S46 If swallowed, seek medical advice immediately and show this container or label.

Date of SDS Preparation/Revision: 26 August 2011

Data Sources: US NLM ChemID Plus and HSDB, Substance SDS for components, IUCLID Dataset EU Chemical Bureau, ESIS, Country websites for occupational exposure limits.