

## MATERIAL SAFETY DATA SHEET

### 1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

SUPPLIER: METPREP LTD.  
CURRIERS CLOSE  
CHARTER AVENUE  
COVENTRY CV4 8AW

TELEPHONE: PRODUCT INFORMATION: 024 7642 1222

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CHEMICAL NAME:

PRODUCT: TRI HARD LIQUID II

PRODUCT NUMBERS: 11 10 41

### 2. COMPOSITION / INFORMATION ON INGREDIENTS

CHEMICAL NATURE: Preparation based on Methyl Methacrylate and Styrene.

INGREDIENT (S):	CAS NUMBER:	%:	HAZARD SYMBOL:	R PHRASES:
Methyl Methacrylate	80-62-6	20-60	F,Xi	11,36/37/38-43
Styrene	100-42-5	1-10	Xn	10,20,36/38
1,1'-(p-Tolyimino) dipropan-2-ol	36668-48-3	0.5-2.5	T	25
1,4-Butandiol-di-methacrylate	2082-81-7	<5		
N,N-dimethyl-para-toluidine	99-97-8	<0.5		23/24/25,33 (no obligation for labelling)

### 3. HAZARDS IDENTIFICATION

F Highly Flammable and Xi Irritant

Special guidelines concerning dangers to humans and the environment. Harmful by inhalation.

May cause sensitisation by skin contact.

Explosive vapour-air mixtures. Vapours are heavier than air.

Danger of bursting of closed systems to vigorous exothermic polymerization. Avoid uncontrolled polymerization.

Further information. Product polymerizes on contact with radical generating substances such as peroxides, azo compounds & heavy metal compounds

### 4. FIRST AID MEASURES

GENERAL INFORMATION: Remove contaminated or saturated clothing immediately.

INHALATION: Possible discomfort. Irritation of mucous lining (nose, throat, eyes) cough, sneezing, flow of tears. Take affected persons out into fresh air. In case of persistent discomfort seek medical attention.

SKIN: When contact with skin, rinse immediately with soap and water.

EYE: Irrigate with eyewash solution or clear water, holding the eyelids apart, for at least 5 minutes. Obtain immediate medical attention.

INGESTION: Do not induce vomiting. Wash out mouth with water and give 200-300 ml (half a pint) of water to drink. Obtain medical attention. Never give anything by mouth to an unconscious person. Call a physician.

INSTRUCTIONS FOR DOCTOR: dexamethasone aerosol dosing spray (eg auxilosone) paraffinum subliquidum

### 5. FIRE FIGHTING MEASURES

EXTINGUISHING MEDIA: Dry Sand, foam, dry powder or CO<sub>2</sub>. Keep fire exposed containers cool by spraying with water.

UNSUITABLE MEDIA: Full water jet

PARTICULAR DANGER CAUSED BY MATERIAL, ITS COMBUSTION PRODUCTS OR GASES PRODUCED:

Formation of flammable or explosive vapour/air mixtures possible. In the case of fire Methyl Methacrylate and Styrene may be released.

FIRE FIGHTING PROTECTIVE EQUIPMENT: A self-contained breathing apparatus and suitable protective clothing should be worn in fire conditions.

## MATERIAL SAFETY DATA SHEET

**ADDITIONAL INFORMATION:** Product is highly flammable. Keep away from sources of ignition. Do not smoke. Caution electrostatic charge may occur. Usual measures for chemical fires. In case of fire, cool containers or take them to a safe place. Danger of polymerization. Water used to extinguish fire should not enter the drainage systems, soil, or stretches of water. Fire residues should be disposed of in accordance with the regulations. Ensure there are sufficient retaining facilities for water used to extinguish the fire. Contaminated fire-extinguishing water must be disposed of in accordance with the regulations issued by the appropriate local authorities.

### 6. ACCIDENTAL RELEASE MEASURES

Eliminate sources of ignition. Ensure suitable personal protection (including respiratory protection) during removal of spillages. Prevent entry into drains. Adsorb spillages onto sand, earth or any suitable adsorbent material. Do not adsorb onto sawdust or other combustible materials. Transfer to a container for disposal or recovery.

### 7. HANDLING AND STORAGE

**HANDLING:** Avoid contact with skin and eyes. Stir and shake well before use. Avoid inhalation of high concentration of vapors. Use only in well ventilated areas. The vapour is heavier than air; beware of pits and confined spaces. Take precautionary measures against static discharges.

**STORAGE:** Keep only in original container. Store in cool dry place away from heat, sparks, flame and direct sunlight. Keep container closed to prevent water absorption and contamination. Keep away from sources of ignition – No Smoking. Ensure there is good room ventilation.

**STORAGE TEMPERATURE:** Preferably not exceeding 25 °C.

**INDUSTRIAL HYGIENE PRACTICES:** Wash face and hands thoroughly with the soap and water after use and before eating, drinking, smoking or applying cosmetics.

### 8. EXPOSURE CONTROL / PERSONAL PROTECTION

Provide adequate ventilation, including appropriate local extraction, to ensure that the defined occupational exposure limit is not exceeded.

Considerations 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:** Wear suitable respiratory protective equipment if exposure to levels above the occupational exposure limit is likely. A suitable mask with filter type A may be appropriate. In the event of formation of particularly high levels of vapor a self-contained breathing apparatus may be appropriate.

**EYE PROTECTION:** Safety glasses or chemical splash goggles.

**GLOVES:** Wear suitable gloves. Rubber or latex gloves offer the best protection. Gloves should be changed regularly and if excessive exposure has occurred.

**OTHER:** Wear suitable protective clothing.

#### OCCUPATIONAL EXPOSURE LIMITS:

HAZARDOUS INGREDIENT (S):	TLV (TWA):	TLV (STEL):
Styrene	215 mg/m <sup>3</sup>	425 mg/m <sup>3</sup>
Methyl Methacrylate	410 mg/m <sup>3</sup>	410 mg/m <sup>3</sup>

### 9. PHYSICAL AND CHEMICAL PROPERTIES

**FORM:** Slightly viscous liquid

<b>MATERIAL SAFETY DATA SHEET</b>
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COLOUR:	Light Green
ODOUR:	Similar to Methyl Methacrylate
PH	NA at 20 °C
BOILING POINT:	from 1000 °C
MELTING POINT:	Not determined °C
FLASH POINT:	120 °C
IGNITION TEMPERATURE:	4300 °C
EXPLOSION LIMITS DATA for methyl methacrylate and Styrene in air from 200 °C and 1013 hPa	
Lower	1.1Vol - % Styrene
Upper	12.5 Vol - % Methyl Methacrylate
VAPOUR PRESSURE:	6 hPa at 20 °C Styrene
	47 hPa at 20 °C Methyl Methacrylate
DENSITY:	~ 1.0 g/cm <sup>3</sup>
WATER SOLUBILITY:	16 g/l Methyl Methacrylate
VISCOSITY:	~ 80 mpas*s

**10. STABILITY AND REACTIVITY**

STABILITY: Stable

CONDITIONS TO AVOID: Heat, sun rays, light effect substances to be avoided. Product polymerizes on contact with radical generating substances such as peroxides, azo compounds, and heavy metals compounds.

HAZARDOUS DECOMPOSITION PRODUCTS:

HAZARDOUS POLYMERIZATION: Can occur.

CONDITIONS TO AVOID FOR HAZARDOUS POLYMERIZATION: Excessive heat, storage in absence of inhibitor; inadvertent addition of catalyst.

**11. TOXICOLOGICAL INFORMATION**

Acute toxicity

LD/LC 50 values to classification

Methyl Methacrylate

Acute dermal toxicity: LD 50 > 9400 mg/kg, rabbit, literature

Acute inhalation toxicity: LC 50 = 29.5 mg/1/4h, rat, literature

Acute oral toxicity: LD 50 = 8000 mg/kg, rat, literature.

Styrene

Acute oral toxicity: LD 50 = 5000 mg/kg, rat, literature

Acute inhalation toxicity: 11.8 mg/1/4h, rat, 1,1-(p-toly-limino) dipropan-2-ol

Acute oral toxicity: LD 50 = 100 mg/kg, rat.

Primary irritative effect methyl methacrylate:

Primary irritative effect to skin: Non irritative, rabbit, OECD 404

Sytrene

Primary irritative effect to skin: Irritant, species not given

Primary irritative effect to eyes: Irritant, species not given

1,1-(p-Tplylimino) dipropan-2-ol

Primary irritative effect to skin: Non-irritative, rabbit.

Subacute to chronic toxicity

Methyl methacrylate

Rat, dog, oral, 2 years

NOEL: (4.16 – 8.32) mg/l

**12. ECOLOGICAL INFORMATION**

Methyl methacrylate

Environmental hazard: Classification Group III material with, based on current knowledge, low potential for hazard.

## MATERIAL SAFETY DATA SHEET

Date of elimination (persistence and degradability)

Degradation (28 days) = 33.7%, not easily biodegradable, OECD 301C.

Eco toxic effects

Bacterial toxicity: Pseudomonos putida, initial inhibition of cell multiplication at 100> mg/l, evaluation on water pollutive substances UBA.

Aquatic toxicity

Methyl methacrylate

Acute toxicity: LC 50 (48 h) = 350 mg/l, leuciscus idus melanotus, literature Styrene

Acute fish toxicity: LC 50 (96 h) app. 100 mg/l, carassius auratus, literature

Acute fish toxicity: LC 50 app. 255 mg/l, Daphnia magna, literature.

### 13. DISPOSAL CONSIDERATIONS

Product: Dispose of in a special refuse tip, according to local regulations.

European Waste catalogue(EWC) 07 02 99: Waste not otherwise specified

May be disposed of as household trash after polymerization, if the necessary technical regulations are observed and after consulting the disposer and the responsible authority.

European Waste catalogue(EWC) 17 02 03: Plastic

Packaging: Contaminated packaging material should be disposed of identical to the product itself. Uncontaminated packaging material should be re-used or treated as household waste.

Recommended cleaning agent

### 14. TRANSPORTATION

**Road transport:** GGVE Class 111, ch. 31 c  
RID Class 111, ch. 31 c  
ADR Class 111, ch. 31 c  
Orange warning plate 339/1247

**Description of substance:** contains methyl methacrylate, monomer, stabilized, solution Packaging group 111.  
GGVS/ADR measures according to Rn. 2300 (6) were taken  
GGVE/RID measures according to Rn. 2300 (6) were taken

**Sea transport** GGVSEA/IMDG Code: Class 3.2 UN-No 1247 Packaging Group 11

Label 3 danger of water pollution

**Emergency action** EmS 3-07 EmS (2) MFAg 330 MFAg (2)

**Proper shipping name:** Methyl methacrylate, monmer, inhibited, solution

**Remarks:** Keep away from accommodation and communal rooms.

**Air transport:** ICAO/IATA-DGR: Class 111, UN No 1247

**Proper shipping name:** Methyl methacrylate, monomer, inhibited, solution

**Remarks:** Drill 3L

**Inland waterway transport ADNR:** The transport classification for inland navigation has not yet been determined.

### 15. REGULATORY INFORMATION

EC REGULATIONS –

EINECS: all chemical listed

EEC Classification: FLAMMABLE AND IRRITANT  
Symbol: Indication of Danger



F Highly Flammable



Xi Irritant

**Risk Phrases:** R11 HighlyFlammable  
R36/37/38. Irritating to eyes, respiratory system and skin.  
R43. May cause sensitization by skin contact.

**Safety Phrases:** S9. Keep container in well-ventilated place.

**MATERIAL SAFETY DATA SHEET**

- S16. Keep away from sources of ignition - No smoking.
- S33. Take precautionary measures against static discharges.
- S37/39. Wear suitable gloves and eye/face protection

**16. ADDITIONAL INFORMATION**

This data sheet was prepared in accordance with Directive 91/155/EEC.

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