MATERIAL SAFETY DATA SHEET

PRODUCT NUMBER: 11 10 38 (part of Kit 11 10 41 and 11 10 49)

SECTION 1 PRODUCT IDENTIFICATION AND MANUFACTURE

1.1 Product identifier

PRODUCT: Tri-Hard Liquids (1)
Product group: investment resin

1.2 Reommended use of the chemical and restrictions on use

No further relevant information available.

1.3 Details of the supplier of the safety data sheet

SUPPLIER: METPREP LTD.
Unit 1, Falkland Close
Charter Avenue
COVENTRY CV4 8AU
CONTACT: sales@metprep.co.uk

1.4 Emergency telephone number

TELEPHONE: 024 7642 1222

SECTION HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture
Classification according to Regulation (EC) No 1272/2008

Flam. Liq. 2	H225	Highly Flammable liquid and vapour.
Skin Irrit. 2	H315	Causes skin irritation.
Skin Sens. 1	H317	May cause an allergic skin reaction.
Repr. 2	H361d	Suspected of damaging the unborn child.
STOT SE 3	H335	May cause respiratory irration serious eye irritation.
STOT RE 2	H373	May causes damage to the hearing organs through prolonged or repeated exposure.

2.2 Label elements
Labelling according to Regulation (EC) No 1272/2008
The product is classified and labelled according to the CLP regulation.

Hazard pictograms


GHS02

GHS07

GHS08 health hazard

S**ignal word** Danger

Hazard-determining components of labelling:
methyl methacrylate
Styrene
Hazard statements
H225 Highly flammable liquid and vapour.
H315 Causes skin irritation.
H317 May cause an allergic skin reaction.
H361d Suspected of damaging the unborn child
H335 May cause respiratory irritation.
H373 May cause damage to organs through prolonged or repeated exposure.

Precautionary statements

P261	Avoid breathing dust/fume/gas/mist/vapours/spray
P280	Wear protective gloves/protective clothing/eye protection/face protection.
P308+P313	If exposed or concerned: Get medical advice/attention.
P333+P313	If skin irritation or rash occurs: Get medical advice/attention.
P405	Store locked up.
P501	Dispose of contents/container in accordance with local/regional/national/international regulations.

2.3 **Other hazards**
Results of PBT and vPvB assessment
PBT: Not applicable.
vPvB: Not applicable.

SECTION 3 Composition/information on ingredients

3.2 **Chemical characterization: Mixtures**
Description: Preparation based on methyl methacrylate and styrene

· **Dangerous components:**		
CAS: 80-62-6 EINECS: 201-297-1	methyl methacrylate Flam. Liq. 2, H225; Skin Irrit. 2, H315; Skin Sens. 1, H317; STOT SE 3, H335	25-50%
CAS: 100-42-5 EINECS: 202-851-5	styrene Flam. Liq. 3, H226; Repr, 2, H361d STOT RE 1, H372; Asp Tox 1, H304; Acute Tox. 4, H332; Skin Irrit. 2, H315; Eye Irrit. 2, H319; Aquatic Chronic 3, H412	2.5-10%
CAS: 99-97-8 EINECS: 202-805-4	N,N-dimethyl-p-toluidine Acute Tox. 3, H301; Acute Tox. 3, H311; Acute Tox. 3, H331; STOT RE 2, H373; Aquatic Chronic 3, H412	< 2.5%

Additional information For the wording of the listed risk phrases refer to section 16.

SECTION 4 FIRST AID MEASURES

4.1 Description of first aid measures
General information
Symptoms of poisoning may even occur after several hours; therefore medical observation for at least 48 hours after the accident.
After inhalation Supply fresh air and to be sure call for a doctor.
After skin contact
Immediately wash with water and soap and rinse thoroughly.
If skin irritation continues, consult a doctor.
After eye contact Rinse opened eye for several minutes under running water. **After swallowing** Rinse out mouth and then drink plenty of water.
4.2· Most important symptoms and effects, both acute and delayed No further relevant information available.
4.3 **Indication of any immediate medical attention and special treatment needed**
No further relevant information available.

SECTION 5 FIRE FIGHTING MEASURES

5.1 **Extinguishing media**
Suitable extinguishing agents
Water spray
Foam
Carbon dioxide
Fire-extinguishing powder

For safety reasons unsuitable extinguishing agents Water with full jet.
5.2 Special hazards arising from the substance or mixture organic products of decomposition
5.3 Advice for firefighters
Protective equipment: Mount respiratory protective device.
Additional information
Cool endangered receptacles with water spray.
Collect contaminated fire fighting water separately. It must not enter the sewage system.

SECTION 6 ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures
Wear protective equipment. Keep unprotected persons away.
Keep away from ignition sources
6.2 Environmental precautions: Do not allow to enter sewers/ surface or ground water.
6.3 Methods and material for containment and cleaning up:
Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).
Dispose contaminated material as waste according to item 13.
Ensure adequate ventilation.
Do not flush with water or aqueous cleansing agents
6.4 Reference to other sections
See Section 7 for information on safe handling
See Section 8 for information on personal protection equipment.
See Section 13 for disposal information.

SECTION 7 HANDLING AND STORAGE

7.1 Precautions for safe handling
Keep away from heat and direct sunlight.
Keep receptacles tightly sealed.
Ensure good ventilation/exhaustion at the workplace.
Prevent formation of aerosols.
Information about fire - and explosion protection:
Use only in explosion protected area.
Keep ignition sources away - Do not smoke.
Protect against electrostatic charges.

7.2 Conditions for safe storage, including any incompatibilities
Storage
Requirements to be met by storerooms and receptacles: Storage between 10 °C and 25 °C.
Information about storage in one common storage facility: Not required.
Further information about storage conditions:
Keep receptacle tightly sealed.
Store in cool, dry conditions in well sealed receptacles.

7.3 Specific end use(s) No further relevant information available.

SECTION 8 EXPOSURE CONTROL/PERSONAL PROTECTION

Additional information about design of technical facilities: No further data; see item 7.
8.1 Control parameters

· **Ingredients with limit values that require monitoring at the workplace:**	
80-62-6 methyl methacrylate	
WEL	Short-term value: 416 mg/m³, 100 ppm Long-term value: 208 mg/m³, 50 ppm
100-42-5 styrene	
WEL	Short-term value: 1080 mg/m³, 250 ppm Long-term value: 430 mg/m³, 100 ppm

Additional information: The lists valid during the making were used as basis.

8.2 Exposure controls
Personal protective equipment
General protective and hygienic measures
Do not eat, drink, smoke or sniff while working.
Keep away from foodstuffs, beverages and feed.
Immediately remove all soiled and contaminated clothing
Wash hands before breaks and at the end of work.
Avoid contact with the eyes and skin.
Respiratory protection:
Not necessary if room is well-ventilated.
Use suitable respiratory protective device in case of insufficient ventilation.
Filter A
Protection of hands: Solvent resistant gloves
Material of gloves
Butyl rubber, BR
Nitrile rubber, NBR
Penetration time of glove material
0,3 mm
Penetration time 60 min.
0,11 mm
Penetration time 10 min.
Not suitable are gloves made of the following materials: PVC gloves
Eye protection: Tightly sealed goggles.
Body protection:
Solvent resistant protective clothing
(Only when handling large quantities)

SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties	
General Information	
Appearance:	
Form:	Fluid
Colour:	Light green
Odour:	Characteristic
Odour threshold:	Not determined.
pH-value:	Not determined.
Change in condition	
Melting point/Melting range:	undetermined
Boiling point/Boiling range:	100 °C
Flash point:	12 °C
Flammability (solid, gaseous)	Not applicable.
Ignition temperature:	430 °C
Decomposition temperature:	Not determined.
Auto-ignition temperature:	Product is not selfigniting.
Explosive properties:	Product is not explosive. However, formation of explosive air/vapour mixtures are possible.
Explosion limits:	
Lower:	2.1 Vol %
Upper:	12.5 Vol %
Vapour pressure at 20 °C:	47 hPa
Density at 20 °C:	1.05 g/cm³
Relative density	Not determined.
Vapour density	Not determined.
Evaporation rate	Not determined.
Solubility in / Miscibility with	
Water:	Not miscible or difficult to mix

Partition coefficient (n-octanol/water):	Not determined.
Viscosity:	
dynamic:	Not determined.
kinematic:	Not determined.
Solvent content:	
Solids content:	**0%**
9.2 Other information	**No further relevant information available**

SECTION 10 STABILITY AND REACTIVITY PROPERTIES

10.1 Reactivity
10.2 Chemical stability
Thermal decomposition / conditions to be avoided: No decomposition if used according to specifications.
10.3 Possibility of hazardous reactions Exothermic polymerization
10.4 Conditions to avoid No further relevant information available.
10.5 Incompatible materials:
In presence of radical formers (e. g. peroxides), deoxidizing substances, and/or heavy metal ions, polymerization with heat release is possible.
10.6 Hazardous decomposition products: No dangerous decomposition products known

SECTION 11 TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects
Acute toxicity:
LD/LC50 values relevant for classification:
methyl methacrylate LD-50 oral >5000 mg/kg rat (lit.)
LD-50 inhalativ 7093 ppm/4h rat (lit.)

100-42-5 styrene		
Oral	LD50	5,000 mg/kg (rat)
Inhalative	LD50/4 h	24mb/l (rat)

Primary irritant effect:
Skin corrosion/irritation
Causes skin irritation.
Serious eye damage/irritation Based on available data, the classification criteria are not met.
Respiratory or skin sensitisation
May cause an allergic skin reaction.
CMR effects (carcinogenity, mutagenicity and toxicity for reproduction)
Germ cell mutagenicity Based on available data, the classification criteria are not met.
Carcinogenicity Based on available data, the classification criteria are not met.
Reproductive toxicity
Presumably risk of damaging fertility
Suspected of damaging the unborn child.
STOT-single exposure
May cause respiratory irritation
May cause respiratory irritation.
STOT-repeated exposure
Causes damage to the hearing organs through prolonged or repeated exposure.
May cause damage to the hearing organs through prolonged or repeated exposure.
Aspiration hazard Based on available data, the classification criteria are not met.

SECTION 12 ECOLOGICAL INFORMATION

12.1 Toxicity
Aquatic toxicity: No further relevant information available.
Type of test Effective concentration Method Assessment
Toxicity to fish (MMA): LC-50 (96 h) = 191 mg/l Lepomis macrochirus

Toxicity to micro-organisms (MMA): EC-10 (16 h) = 100 mg/l
Pseudomonas putida
Toxicity to micro-organisms (styrene): 16 h 72 mg/l Pseudomonas putida incipient inhibition of cell division

12.2 Persistence and degradability No further relevant information available.
Behaviour in environmental systems:
Components:
methyl methacrylate Biodegradability: 30,7 %
Time: 28 d
Method: OECD 301 C
Valuation: difficult to decompose
12.3 Bioaccumulative potential No further relevant information available.
12.4 Mobility in soil No further relevant information available.
Additional ecological information:
General notes:
Water hazard class 2 (German Regulation) (Self-assessment): hazardous for water.
Do not allow product to reach ground water, water course or sewage system.
Danger to drinking water if even small quantities leak into the ground.
12.5 Results of PBT and vPvB assessment
PBT: Not applicable.
vPvB: Not applicable.
12.6 Other adverse effects No further relevant information available.

SECTION 13 DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods
Recommendation
After prior treatment product has to be disposed of in an incinerator for hazardous waste adhering to the regulations pertaining to the disposal of particularly hazardous waste.
Must not be disposed together with household garbage. Do not allow product to reach sewage system.

· **European waste catalogue**	
07 01 04*	other organic solvents, washing liquids and mother liquors

Uncleaned packaging:
Recommendation: Disposal must be made according to official regulations.

SECTION 14 TRANSPORT INFORMATION

14.1 UN-Number	
ADR, IMDG, IATA	UN1866
14.2 UN proper shipping name	
ADR	1866 RESIN SOLUTION (vapour pressure at 50 °C not more than 110 kPa)
IMDG, IATA	RESIN SOLUTION

14.3Transport hazard class(es)

ADR

Class	3 (F1) Flammable liquids.
Label	3

IMDG, IATA	
	
Class	3 Flammable liquids.
Label	3
14.4 Packing group	
ADR, IMDG, IATA	II
14.5 Environmental hazards:	
Marine pollutant:	No
14.6 Special precautions for user	Warning: Flammable liquids.
Danger code (Kemler):	33
EMS Number:	F-E,S-E
Stowage Category	B
14.7 Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code	Not applicable.
Transport/Additional information:	
IMDG	
Limited quantities (LQ)	5L
Transport category (EQ)	Code: E2 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 500 ml
· **UN "Model Regulation":**	UN1866, RESIN SOLUTION (vapour pressure at 50 °C not more than 110 kPa), 3, II

SECTION 15 REGULATORY INFORMATION

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

Directive 2012/18/EU
Named dangerous substances - ANNEX I None of the ingredients is listed.
Seveso category P5c FLAMMABLE LIQUIDS
Qualifying quantity (tonnes) for the application of lower-tier requirements 5,000 t
Qualifying quantity (tonnes) for the application of upper-tier requirements 50,000 t
REGULATION (EC) No 1907/2006 ANNEX XVII Conditions of restriction: 3

National regulations

Information about limitation of use:
Employment restrictions concerning juveniles must be observed.
Employment restrictions concerning pregnant and lactating women must be observed.

· **Technical instructions (air):**

Class	Share in %
I	< 2,5
NK	50-75

· **Waterhazard class:** Water hazard class 2 (Self-assessment): hazardous for water.
· **Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

SECTION 16 OTHER INFORMATION

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

Relevant phrases

H225 Highly flammable liquid and vapour.
H226 Flammable liquid and vapour.
H301 Toxic if swallowed.
H304 May be fatal if swallowed and enters airways.
H311 Toxic in contact with skin.
H315 Causes skin irritation.
H317 May cause an allergic skin reaction.
H319 Causes serious eye irritation.
H331 Toxic if inhaled.
H332 Harmful if inhaled.
H335 May cause respiratory irritation.
H372 Causes damage to organs through prolonged or repeated exposure.
H373 May cause damage to organs through prolonged or repeated exposure.
H412 Harmful to aquatic life with long lasting effects.

· **Abbreviations and acronyms:**
RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the
International Transport of Dangerous Goods by Rail)
IATA-DGR: Dangerous Goods Regulations by the "International Air Transport Association" (IATA)
ICAO: International Civil Aviation Organisation
ICAO-TI: Technical Instructions by the "International Civil Aviation Organisation" (ICAO)
ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International
Carriage of Dangerous Goods by Road)
IMDG: International Maritime Code for Dangerous Goods
IATA: International Air Transport Association
GHS: Globally Harmonised System of Classification and Labelling of Chemicals
EINECS: European Inventory of Existing Commercial Chemical Substances
ELINCS: European List of Notified Chemical Substances
CAS: Chemical Abstracts Service (division of the American Chemical Society)
LC50: Lethal concentration, 50 percent
LD50: Lethal dose, 50 percent
PBT: Persistent, Bioaccumulative and Toxic
vPvB: very Persistent and very Bioaccumulative
Flam. Liq. 2: Flammable liquids – Category 2
Flam. Liq. 3: Flammable liquids – Category 3
Acute Tox. 3: Acute toxicity – Category 3
Acute Tox. 4: Acute toxicity – Category 4
Skin Irrit. 2: Skin corrosion/irritation – Category 2
Eye Irrit. 2: Serious eye damage/eye irritation – Category 2
Skin Sens. 1: Skin sensitisation – Category 1
Repr. 2: Reproductive toxicity – Category 2
STOT SE 3: Specific target organ toxicity (single exposure) – Category 3
STOT RE 1: Specific target organ toxicity (repeated exposure) – Category 1
STOT RE 2: Specific target organ toxicity (repeated exposure) – Category 2
Asp. Tox. 1: Aspiration hazard – Category 1
Aquatic Chronic 3: Hazardous to the aquatic environment - long-term aquatic hazard – Category 3

· *** Data compared to the previous version altered.**

(The data for the hazardous ingredients were taken respectively from the last version of the sub-contractor's safety data sheet.)

SDS Creation Date: September 2020

SDS Revision Date: October 2018