MATERIAL SAFETY DATA SHEET

PRODUCT NUMBER: 11 10 37 (part of Kit 11 10 41 and 11 10 49)

SECTION 1 PRODUCT IDENTIFICATION AND MANUFACTURE

1.1 Product identifier

PRODUCT: Tri-Hard Liquids (2)
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. 3	H226	Flammable liquid and vapour.
Skin Irrit. 2	H315	Causes skin irritation.
Eye Irrit. 2	H319	Causes serious eye irritation.
Skin Sens. 1	H317	May cause an allergic skin reaction.
Repr. 2	H361d	Suspected of damaging the unborn child.
STOT RE 1	H372	Causes damage to the hearing organs through prolonged or repeated exposure.
Asp. Tox. 1	H304	May be fatal if swallowed and enters airways.
Aquatic Chronic 3	H412	Harmful to aquatic life with long lasting effects.

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 flame — Flam. Liq. 2 H225 Highly flammable liquid and vapour.

GHS08 health hazard — STOT RE 2 H373 May cause damage to organs through prolonged or repeated exposure.

GHS07

Hazard-determining components of labelling:
styrene
methyl methacrylate

Hazard statements

H226	Flammable liquid and vapour.
H315	Causes skin irritation.
H319	Causes serious eye irritation.
H317	May cause an allergic skin reaction.
H361d	Suspected of damaging the unborn child.
H372	Causes damage to the hearing organs through prolonged or repeated exposure.
H304	May be fatal if swallowed and enters airways.
H412	Harmful to aquatic life with long lasting effects.

Precautionary statements

P301+P310	IF SWALLOWED: Immediately call a POISON CENTER/ doctor.
P321	Specific treatment (see on this label).
P331	Do NOT induce vomiting.
P303+P361+P353	IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
P305+P351+P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P362+P364	Take off contaminated clothing and wash it before reuse.
P405	Store locked up.
P501	Dispose of contents/container in accordance with local/regional/national/international regulations.

Labelling of packages where the contents do not exceed 125 ml
Hazard pictograms


GHS07


GHS08


GHS02

Signal word Danger
Hazard-determining components of labelling:
styrene
methyl methacrylate

Hazard statements

H317	May cause an allergic skin reaction.
H361	Suspected of damaging fertility or the unborn child.
H372	Causes damage to the hearing organs through prolonged or repeated exposure.
H304	May be fatal if swallowed and enters airways.
H412	Harmful to aquatic life with long lasting effects.

Precautionary statements

P301+P310	IF SWALLOWED: Immediately call a POISON CENTER/ doctor.
P321	Specific treatment (see on this label).
P331	Do NOT induce vomiting.
P362+P364	Take off contaminated clothing and wash it before reuse.
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

· **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	10-25%
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	25-50%

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

SECTION 4 FIRST AID MEASURES

4.1Description of first aid measures
After inhalation Take affected persons into fresh air and keep quiet
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. Then consult a doctor
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
Fire extinguishing powder
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: Wear self-contained respiratory protective device.
Additional information
Collect contaminated firefighting water separately. It must not enter the sewage system.

SECTION 6 ACCIDENTAL RELEASE MEASURES

6.1Personal 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.
7.3Specific 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.
Respiratory protection:
Not necessary if room is well ventilated
use suitable respiratory protective device in case of insufficient ventilation
Filter A
Protection of hands: Protective gloves
Material of gloves
Butyl rubber, BR
Nitrile rubber, NBR
Penetration time of glove material
0,3mm Penetration time 60 min
0.11mm Penetration time 10 min
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:	101 °C
Flash point:	26 °C
Flammability (solid, gaseous)	Not applicable.
Ignition temperature:	430 °C
Decomposition temperature:	Not determined.
Self-igniting:	Product is not self-igniting.
Danger of explosion:	Product is not explosive. However, formation of explosive air/vapour mixtures are possible.
Explosion limits:	
Lower:	1.2 Vol %
Upper:	12.5 Vol %
Vapour pressure at 20 °C:	47 hPa
Density at 20 °C:	1. g/cm³
Relative density	Not determined.
Vapour density	Not determined.
Evaporation rate	Not determined.
Solubility in / Miscibility with	
Water:	Slightly soluble
Partition coefficient (n-octanol/water):	Not determined.
Viscosity:	
dynamic:	Not determined.
kinematic:	Not determined.
Solvent content	
Solids content:	0.0 %
· **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: Based on available data, the classification criteria are not met.
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:
on the skin corrosion/irritation: Causes skin irritation
Serious eye damage/irritation: Causes serious eye irritation.
Respiratory or skin Sensitization: May cause an allergic skin reaction.
CMR effects (carcinogenetic, 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	Based on available data, the classification criteria are not met.
STOT-repeated exposure	Causes damage to the hearing organs through prolonged or repeated exposure.
	Causes damage to the hearing organs through prolonged or repeated exposure.
Aspiration hazard	May be fatal if swallowed and enters airways.

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.
12.3 Bioaccumulative potential No further relevant information available.
12.4 Mobility in soil No further relevant information available.
Ecotoxical effects:
Remark: Harmful to fish
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.
Harmful to aquatic organisms
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: Packagings that may not be cleansed are to be disposed of in the same manner as the product..
Recommended cleansing agents: Ethyl acetate

SECTION 14 TRANSPORT INFORMATION

14.1 UN-Number
ADR, IMDG, IATA UN1866

14.2 UN proper shipping name
ADR 1866 RESIN SOLUTION
IMDG, IATA RESIN SOLUTION

Transport 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	III
14.5 Environmental hazards:	
Marine pollutant:	No
14.6 Special precautions for user	Warning: Flammable liquids.
Danger code (Kemler):	30
EMS Number:	F-E,S-E
Stowage Category	A
14.7 **Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code**	Not applicable.
Transport/Additional information:	
ADR	
Limited quantities (LQ)	5L
Excepted quantities (EQ)	Code: E1 Maxiumu met quantity per inner packaging: 30ml Maxiumu met quantity per outer packaging: 100ml
Transport category	**3**
Tunnel restriction code	D/E
IMDG	
Limited quantities (LQ)	5L
Excepted quantities (EQ)	Code E1 Maxiumu met quantity per inner packaging: 30ml Maxiumu met quantity per outer packaging: 100ml
UN "Model Regulation":	UN1866, RESIN SOLUTION, 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 %
NK	25-50

Water hazard class: Water hazard class 2 (Self-assessment): hazardous for water.
15.2 **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.

H304 May be fatal if swallowed and enters airways.
H315 Causes skin irritation.
H317 May cause an allergic skin reaction.
H319 Causes serious eye irritation.
H332 Harmful if inhaled.
H335 May cause respiratory irritation.
H361d Suspected of damaging the unborn child.
H372 Causes damage to the hearing organs through prolonged or repeated exposure.
H412 Harmful to aquatic life with long lasting effects.

Department issuing SDS: F&E GDF GmbH
Contact: Dr. U. Krichbaum
Abbreviations and acronyms:
RID: Règlement international concernant le transport des merchandises 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 European sur le transport des merchandises 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, Bio accumulative and Toxic
vPvB: very Persistent and very Bioaccumulative
Flam. Liq. 2: Flammable liquids – Category 2
Flam. Liq. 3: Flammable liquids – 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
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