SAFETY DATA SHEET: AD19 Fusion Liquid

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

1.1 Product identifier

Product Name	Fusion Liquid
Product Description	Mixture based on Methyl methacrylate monomer.
UFI Number	3M00-R0J9-N00Y-34VH

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

Identified use(s)	Professional modelling use

1.3 Details of the supplier of the safety data sheet

Mixtures containing unreacted liquid monomer intended to come into contact with skin or nails.

Deluxe Materials Ltd., Unit 12/13 Cufaude Business Park, Cufaude Lane, Bramley, Hampshire, United Kingdom
Tel: +44 (0)1256 883944
john@deluxematerials.com

1.4 Emergency telephone number

+44 (0) 1256 883944

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	Danger
Hazard statement(s)	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

3.2 Mixtures

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	> 97.5	201-297-1	01-2119452498-28	Flam. Liq. 2 Skin Irrit. 2 Skin Sens. 1 STOT SE 3	H225 H315 H317 H335
N,N-Dimethyl-p-toluidine	< 2.5	202-805-4	01-2119956633-31	Acute Tox. 3 Acute Tox. 3 Acute Tox. 3 STOT RE 2 Aquatic Chronic 3	H301 H311 H331 H373 H412

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.

Eye Contact: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Obtain immediate medical attention.

Ingestion: IF SWALLOWED: rinse mouth. Do NOT induce vomiting. Obtain 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

Treat symptomatically.

5. SECTION 5: FIREFIGHTING MEASURES

5.1 Extinguishing media

Suitable Extinguishing Media: In case of fire, use water spray, foam, dry powder or CO_2 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 use compressed air for filling, discharging or 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). The minimum oxygen concentration should be 5%, and ideally kept at 5-8%. 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	Storage life is dependent upon a number of factors such as stabiliser concentration, oxygen level, temperature and time. Please refer to the Methacrylate Esters Safe Handling Manual or contact the supplier for specific advice.
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.

7.3 Specific end use(s)

In conjunction with polymers as part of denture repair and relining systems.

8. SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

Substance	CAS No.	LTEL ppm (8Hr TWA)	LTEL mg/m³ (8Hr TWA)	STEL ppm	STEL mg/m³	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	[1]	208 mg/m³	1.5 mg/cm²
		Worker - Long Term - Systemic effects	[1]	384.4 mg/m³ *	13.67 mg/kg body weight/day
		Worker - Short term - Local effects	[1]	416 mg/m³	1.5 mg/cm²
		Worker - Short term - Systemic effects	[1]	[2]	[3]
		Consumer - Long Term - Local effects	[1]	104 mg/m³	1.5 mg/cm²
		Consumer - Long Term - Systemic effects	8.2 mg/kg body weight/day	74.3 mg/m³	8.2 mg/kg body weight/day
		Consumer - Short term - Local effects	[1]	208 mg/m³	1.5 mg/cm²
		Consumer - Short term - Systemic effects	[1]	[2]	[3]

Substance	CAS No.	DNEL	Oral	Inhalation	Dermal
N,N-Dimethyl-p-toluidine	000099-97-8	Worker - Long Term - Local effects			
		Worker - Long Term - Systemic effects		1.22 mg/m³	0.694 mg/kg body weight/day
		Worker - Short term - Local effects			
		Worker - Short term - Systemic effects			
		Consumer - Long Term - Local effects			
		Consumer - Long Term - Systemic effects			
		Consumer - Short term - Local effects			
		Consumer - Short term - Systemic effects			

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	[3]

Substance	CAS No.		PNEC
N,N-Dimethyl-p-toluidine	000099-97-8	Fresh water	0.0137 mg/l
		Fresh water (sediment)	
		Sea water	0.00137 mg/l
		Sea water (sediment)	
		Sewage Treatment Plant	1.36 mg/l
		Soil	20.36 mg/l
		Air	

[1] Low oral toxicity : DNEL not established.
[2] Long term DNEL is protective of effects resulting from short term exposure.
[3] No identified hazard.
* Exposure assessment DNEL = 208 mg/m³

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. 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. The following information is given as general guidance.

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

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 proper process control to ensure releases to air are within local permits. Monitor and regularly maintain ventilation equipment to ensure performance. Do not empty into drains. Contain and collect spillages for incineration. Fully polymerise before landfill. Only dispose of polymerised material with household waste.

9. SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

The following information is based on the principal component: Methyl methacrylate

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 available.
Melting Point (°C)	-48
Boiling Point (°C)	100.36
Flash Point (°C)	10 [Closed cup]
Flammability (solid, gas)	Highly flammable liquid and vapour.
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. 1.53g/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^2/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.

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.

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.
Inhalation	Based upon the available data, the classification criteria are not met. May cause drowsiness and dizziness.
Skin Contact	Based upon the available data, the classification criteria are not met.
Skin corrosion/irritation	Causes skin irritation. Repeated and/or prolonged contact may cause dermatitis.
Serious eye damage/irritation	Based upon the available data, the classification criteria are not met. High vapour concentration will cause irritation.
Sensitisation	Methyl methacrylate: May cause an allergic skin reaction. 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.
Germ cell mutagenicity	Based upon the available data, the classification criteria are not met.
Reproductive toxicity	Based upon the available data, the classification criteria are not met.
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.
Aspiration hazard	Based upon the available data, the classification criteria are not met.

12. SECTION 12: ECOLOGICAL INFORMATION

12.1 Toxicity
Harmful to aquatic life.

12.2 Persistence and degradability
Readily biodegradable.

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. Within the EU this material should be regarded as a 'special waste' (see relevant national legislation for special wastes and EC Hazardous Waste Directive 91/689/EEC, as amended) and disposed of appropriately.

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. The packaging should be disposed of with due care (e.g. UK Duty of Care regulations), ensuring that the package is completely emptied. In some cases the packaging itself may be regarded as a waste requiring special treatment. If in any doubt please seek specialist advice from a competent authority. 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
1993

14.2 UN Proper Shipping Name
FLAMMABLE LIQUID, N.O.S. (Methyl methacrylate, Toluidine)

14.3 Transport hazard class(es)

Class	3
IMDG Class	3
IMDG EMS	F-E, S-E
IATA	3
ADR Classification Code	F1
ADR HIN	33
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
Not applicable.

15. SECTION 15: REGULATORY INFORMATION

Regulatory obligations are country/region specific. Compliance statements are available. Please confirm regulatory status for individual country/region with the supplier before placing on the market.

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 not been carried out for this substance/mixture.
Appropriate information from exposure scenarios from component substances relevant to uses of this mixture have been incorporated into the core sections (1-16) of this safety data sheet.

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, 4, 7, 8, 9, 11, 12, 14
Date of preparation:	9 -April- 2024

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:	Methacrylate Monomers Safe Use of Gloves Best Practice Guidelines Methacrylate Esters Safe Handling Manual
Full text of H phrases	H225: Highly flammable liquid and vapour. H301: Toxic if swallowed. H311: Toxic in contact with skin. H315: Causes skin irritation. H317: May cause an allergic skin reaction. H331: Toxic if inhaled. H335: May cause respiratory irritation. H373: May cause damage to organs through prolonged or repeated exposure. H412: Harmful to aquatic life with long lasting effects.

IMPORTANT: USE IN THE MANUFACTURE OF MEDICAL DEVICES AND RELATED PRODUCTS.
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