

SAFETY DATA SHEET: AD19 FUSION LIQUID

(Fusion Liquid used with AD19 Fusion Powder)

REVISION DATE: 19.6.2015

PAGE 1/8

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

- 1.1 Product identifier** FUSION LIQUID
Product Name AD19
Product Description Preparation based on Methyl methacrylate monomer.
- 1.2 Relevant identified uses of the substance or mixture and uses advised against**
Identified use(s) Production of dentures, artificial teeth, reactive coatings.
Uses advised against Mixtures containing unreacted liquid monomer intended to come into contact with skin or nails.
- 1.3 Details of the supplier of the safety data sheet**
Deluxe Materials Ltd
Unit 13, Cufaude Business Park, Cufaude Lane, Bramley, Hampshire RG26 5DL United Kingdom
info@deluxematerials.com
- 1.4 Emergency telephone number**
+44 (0) 1256 883 944 office hours only

2. SECTION 2: HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

According to Regulation (EC) No. 1272/2008 (CLP).

Flammable Liquid Category 2	H225
Skin corrosion / irritation Category 2.	H315
Skin sensitisation Category 1.	H317
Acute toxicity (Inhalation) Category 3.	H331
STOT - single exposure Category 3	H335

According to Directive 67/548/EEC & Directive 1999/45/EC

F, Xn	R11 R20/21/22 R33 R37/38 R43
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For full text of H/R phrases see section 16.

2.2 Label elements



Signal word

Hazard statement(s)

Precautionary statement(s)

Danger

H225: Highly flammable liquid and vapour.

H315: Causes skin irritation.

H317: May cause an allergic skin reaction.

H331: Toxic if inhaled.

H335: May cause respiratory irritation.

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.

P304 + P340: IF INHALED: Remove person to fresh air and keep comfortable for breathing.

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.

SAFETY DATA SHEET

FUSION LIQUID

2.3 Other hazards

Not classified as PBT or vPvB.

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 Regulation (EC) No. 1272/2008 (CLP).

Hazardous Ingredient(s)	%W/W	EC No.	REACH Registration No.	Hazard Class and Category Code(s)	Hazard statement Code(s)
Methyl methacrylate	> 95	201-297-1	01-2119452498-28-XXXX	Flam. Liq. 2 Skin Irrit. 2 Skin Sens. 1 STOT SE 3	H225 H315 H317 H335
N,N-Dimethyl-p-toluidine	< 5	202-805-4	05-2114365890-42-XXXX	Acute Tox. 3 Acute Tox. 3 Acute Tox. 1 STOT RE 2 Aquatic Chronic 3	H301 H311 H330 H373 H412

According to Directive 67/548/EEC & Directive 1999/45/EC

Hazardous Ingredient(s)	%W/W	EC No.	REACH Registration No.	Classification
Methyl methacrylate	> 95	201-297-1	01-2119452498-28-XXXX	F, Xi R11 R37/38 R43
N,N-Dimethyl-p-toluidine	< 5	202-805-4	05-2114365890-42-XXXX	T; R23/24/25 R33 R52/53

For full text of H/R 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 CENTER or doctor/physician.
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

Harmful by inhalation, in contact with skin and if swallowed. Danger of cumulative effects. Irritating to respiratory system and skin. May cause sensitization by skin contact. High atmospheric concentrations may lead to irritation of the respiratory tract and anaesthetic effects. Repeated and/or prolonged contact may cause dermatitis.

4.3 Indication of any immediate medical attention and special treatment needed

None necessary.

5. SECTION 5: FIRE-FIGHTING 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	None.

SAFETY DATA SHEET

FUSION LIQUID

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 fire-fighters

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 eat, drink or smoke at the work place. Wash thoroughly after handling.

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). Monomer vapours are uninhibited and may form polymers in vent or flame arresters, resulting in blockage of vents.

Storage temperature (°C): < 25°C

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. Cyclohexanone/Cyclohexenol tautomer.

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/m ³ (8Hr TWA)	STEL ppm	STEL mg/m ³	Notes
Methyl methacrylate	000080-62-6	50	208	100	416	WEL, IOELV

8.2 Exposure controls

Appropriate engineering controls

Do not eat, drink or smoke at the work place. Provide adequate ventilation, including appropriate local extraction, to ensure that the occupational exposure limit 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.

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

Eye/face protection

SAFETY DATA SHEET

FUSION LIQUID



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.

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 exposure to levels above the occupational exposure limit 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

9.1 Information on basic physical and chemical properties

Form	Liquid.
Colour.	Clear.
Odour	Typically methacrylate.
pH (Value)	Not applicable.
Melting Point (°C)	Not available.
Boiling Point (°C)	Not available.
Flash Point (°C)	10 [Closed cup]
Flammability (solid, gas)	Not applicable.
Flammable Limits (Lower) (%v/v)	2.1
Flammable Limits (Upper) (%v/v)	12.5
Vapour pressure (Pascal)	3680 at 20°C
Vapour Density (Air=1)	Not available.
Solubility (Water)	Slightly soluble. 1.6% at 20°C
Solubility (Other)	Miscible with most organic solvents.
Partition Coefficient (n-Octanol/water)	Not available.
Auto Ignition Temperature (°C)	421
Decomposition Temperature (°C)	Not applicable.
Viscosity (mPa. s)	Not available.
Explosive properties	Not applicable.
Oxidising Properties	Not applicable.
Density (g/ml)	0.95 at 20°C

9.2 Other information

None.

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.

SAFETY DATA SHEET

FUSION LIQUID

10.3 Possibility of hazardous reactions

Susceptible to polymerisation initiated by prolonged storage or the presence of catalyst.

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. Cyclohexanone/Cyclohexenol tautomer.

10.6 Hazardous decomposition product(s)

Does not decompose up to auto-ignition temperature.

11. SECTION 11: TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute toxicity

Ingestion

Harmful if swallowed. Ingestion may cause irritation of the gastrointestinal tract.

Inhalation

Harmful by inhalation. Irritating to respiratory system. High atmospheric concentrations may lead to irritation of the respiratory tract, dizziness, headache and anaesthetic effects.

Skin Contact

Harmful in contact with skin. May cause sensitization by skin contact. Irritating to skin. Repeated and/or prolonged contact may cause dermatitis.

Eye Contact

High vapour concentration will cause irritation.

Aspiration hazard data

Not an aspiration hazard.

Sensitisation

Skin sensitization data

Methyl methacrylate: May cause sensitization by skin contact.

Respiratory sensitization data

Not a respiratory sensitizer. Irritant to the respiratory system and high concentrations may aggravate pre-existing conditions.

CMR effects (carcinogenicity, mutagenicity and toxicity for reproduction).

Carcinogenicity data

No evidence of carcinogenicity.

Germ cell mutagenicity data

There is no evidence of mutagenic potential.

Reproductive toxicity data

Unlikely to cause reproductive effects.

Repeated exposure toxicity

Chronic exposure

Methyl methacrylate: Repeated exposure to high levels produces adverse effects on the heart, lungs, liver and kidneys. Repeated exposure of animals by inhalation to levels at or above the occupational exposure level produces adverse effects on the nasal epithelium (levels of 100 and 400ppm). There is no reason to believe that Methyl methacrylate represents a carcinogenic or mutagenic hazard to man based upon evidence from well conducted animal studies, relevant mutagenicity studies and adequate epidemiology studies in relevant cohorts. Recent studies in animals have shown that high exposures do not produce embryo or foetotoxic nor teratogenic effects in the presence of maternal toxicity.

STOT - repeated exposure data

None.

12. SECTION 12: ECOLOGICAL INFORMATION

12.1 Toxicity

May be harmful to aquatic organisms.

12.2 Persistence and degradability

Readily biodegradable.

SAFETY DATA SHEET

FUSION LIQUID

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.

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

Not classified as a Marine Pollutant.

14.6 Special precautions for user

No special requirements.

14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable.

15. SECTION 15: REGULATORY INFORMATION

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

Regulation (EC) No 1272/2008 (Classification, labelling and packaging of substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No 1907/2006).

Directive 2009/161/EU (third list of indicative occupational exposure limit values in implementation of Council Directive 98/24/EC and amending Commission Directive 2000/39/EC).

SAFETY DATA SHEET

FUSION LIQUID

15.2 Chemical Safety Assessment

A Chemical Safety Assessment has not been carried out for this substance/mixture.

16. SECTION 16: OTHER INFORMATION

This Safety Data Sheet was prepared in accordance with EC Regulation (EC) No. 453/2010.

Date of preparation: 12-May-2015
The following sections contain revisions or new statements: 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16

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Inventory Status

European Union	To the best of our knowledge all chemicals in this product comply with REACH regulations.
United States (TSCA)	Listed in TSCA
Canada (DSL/NDSL)	Listed in DSL
Japan (ENCS)	Listed in ENCS
Philippines (PICCS)	Listed in PICCS
Australia (AICS)	Listed in AICS
South Korea (KECI)	Listed in KECI
China (IECSC)	Listed in IECSC

Compliance with other Regulatory Chemical Inventories cannot be assumed, please contact supplier for further information.

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

STOT SE: Specific Target Organ Toxicity - Single Exposure

Repr.: Reproductive toxicity

Aquatic acute/chronic: Hazardous to the aquatic environment

SAFETY DATA SHEET

FUSION LIQUID

Full text of H/P/R 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.
H330: Fatal 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.
R11: Highly flammable.
R20/21/22: Harmful by inhalation, in contact with skin and if swallowed.
R23/24/25: Toxic by inhalation, in contact with skin and if swallowed.
R33: Danger of cumulative effects.
R37/38: Irritating to respiratory system and skin.
R43: May cause sensitization by skin contact.
R52/53: Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

It is the responsibility of the end-product manufacturer to identify all market and use-specific regulations and to ensure compliance with these regulations.

Subject to the exclusions and limitations set out below the Information contained in this publication or as otherwise supplied to the User is believed to be accurate and has been given in good faith. It is for the User to use the Information contained in this publication or as otherwise supplied to the User with care and satisfy itself of the suitability of the product for their intended use and the applicability of the advice given. Except to the extent that exclusion is prevented by applicable law Deluxe Materials gives no warranty as to the fitness of the product for any particular purpose and any implied warranty or condition (statutory or otherwise) is excluded and accepts no liability for loss or damage (other than that arising from death or personal injury caused by defective product, if proved), resulting from reliance on this information. Freedom under Patents, Copyright and Designs cannot be assumed.