

1. IDENTIFICATION OF SUBSTANCES / PREPARATION AND COMPANY

| | | | | | |
|--|--|------|-------------------|------------|------|
| 1.1 Product Name: | Enigma High Base Liquid | | | | |
| Product Code: | 422, 423, 843, 844, 846, 847 | | | | |
| Application: | With Enigma High Base powder, forms a heat cured acrylic denture base. | | | | |
| 1.2 Relevant identified uses of the substance or mixture and uses advised against; | Manufacturing of dental prosthesis in a dental laboratory | | | | |
| 1.3 Company: | Davis Schottlander & Davis Ltd Fifth Avenue, Letchworth Garden City Herts SG6 2WD UK Tel: +44 (0)1462 480848 Fax: +44 (0)1462 482802 msds@schottlander.co.uk www.schottlander.com | | | | |
| Revision Date: | 23.5.2022 | V4.0 | Previous Revision | 25.08.2015 | V3.0 |
| Next Review Date: | 23.5.2025 | | | | |

2. HAZARD IDENTIFICATION

2.1 Classification of the substance or mixture

This substance is classified as hazardous according to GHS.

Regulation EC1272/2008

| | | | |
|----------|------|---|--------------------|
| Physical | H225 | Flammable Liquids | Hazard category 2 |
| Health | H315 | Irritation of skin | Hazard category 2 |
| | H317 | Skin sensitisation | Hazard category 1B |
| | H335 | Specific Target Organ Toxicity - Single exposure (inhalation) | Hazard category 3 |

2.2 Label elements

In Accordance with Regulation EC 1272/2008

Signal word Danger

GHS Pictogram



H315 H317 H335

H225

| | | |
|------------------|------|-------------------------------------|
| Hazard Statement | H225 | Highly flammable liquid or vapour |
| | H315 | Causes skin irritation |
| | H317 | May cause an allergic skin reaction |
| | H335 | May cause respiratory irritation |

Precautionary Statement

| | | |
|--------------|------|---|
| (Prevention) | P210 | Keep away from heat, hot surfaces, sparks, open flames And other ignition sources. No smoking. |
| | P261 | Avoid breathing dust/fume/gas/mist/vapours/spray |
| | P280 | Wear protective gloves/protective clothing/eye |

SAFETY DATA SHEET

(Response) P303+361+353 protection/face protection
IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.

(Disposal) P501 Dispose of contents/container in accordance with local regulation

Hazardous components for labelling: Methyl methacrylate

2.3 Other hazards:

Polymerisation with heat evolution may occur in the presence of radical forming substances (e.g peroxides), reducing substances, and/or heavy metal ions.

3. COMPOSITION / INFORMATION ON INGREDIENTS

3.1 Substances

In accordance with Regulation EC 1272/2008

| Component | CAS No. EC Index No. REACH No. EINECS No. | Content | Hazard/category/statement |
|--------------------------------|--|---------|---|
| Methyl Methacrylate | 80-62-6 607-035-00-6 01-2119452498-28 201-29701 | >98% | Flam. Liq./2/H225 Skin Irrit./2/H315 Skin Sens./1/H317 STOT SE (inhalation)/3/H335 |
| Ethylene Glycol Dimethacrylate | 97-90-5 607-114-00-5 Pre-registered 202-617-2 | 2.5-10% | Skin Sens./1/H317 STOT SE (inhalation)/3/H335 |

4. FIRST AID MEASURES

4.1 Description of first aid measures

General advice Medical treatment is necessary if symptoms occur which are obviously caused by skin or eye contact with the product, or by vapour inhalation. Remove soiled soaked clothing immediately.

Inhalation Move casualty to fresh air and keep them calm. Seek medical attention.

Skin contact Wash off immediately with soap and water. If skin irritation occurs, seek medical attention.

Eye contact Holding eyelids open, immediately rinse thoroughly with plenty of water. Seek medical advice.

Ingestion Do not induce vomiting. Immediately contact a doctor.

4.2 Most important symptoms and effects, both acute and delayed:

Causes skin and eye irritation. Skin sensitisation.

4.3 Indication of any immediate medical attention and special treatment needed:

No

5. FIRE FIGHTING MEASURES**5.1 Extinguishing media**

Suitable extinguishing media: Foam, dry powder, carbon dioxide

Unsuitable extinguishing media: Water

5.2 Special hazards arising from the substance or mixture:

No

5.3 Advice for fire fighters:

Wear self-contained breathing apparatus and full protective clothing.

6. ACCIDENTAL RELEASE MEASURES**6.1 Personal precautions, protective equipment and emergency procedures**

Take care for adequate ventilation. Use personal protective clothing. Keep away from sources of ignition. Use breathing apparatus if exposed to vapour/dust/mist/aerosol.

6.2 Environmental procedures

Do not allow to enter drains/surface water/ground water/sewerage systems. If entry occurs IMMEDIATELY alert The Environment Agency or other equivalent appropriate body.

6.3 Methods and material for containment and cleaning up

Larger volumes: remove mechanically (by pumping). Use explosion-proof equipment.
Smaller volumes and/or residues: contain with absorbent material (e.g. sand, diatomaceous earth, acid absorbent, universal absorbent or sawdust). Dispose of in accordance with local regulations.

6.4 Reference to other sections

For personal protection see section 8.

For disposal considerations see section 13.

7. HANDLING AND STORAGE**7.1 Precautions for safe handling**

Ensure the area is well ventilated. Keep container tightly closed. Keep away from heat, sparks and open flame – no smoking. Take precautionary measures against static discharge. In the event of fire, use explosion-proof equipment only. Cool the endangered containers with water. When heated above the flashpoint and/or during spraying (atomising), ignitable mixtures may form in air.

7.2 Conditions of safe storage, including any incompatibilities

Keep only in the original container and do not allow temperature to exceed 30°C. Protect from light. Fill the container by approx. 90% only as oxygen (air) is required for stabilisation. With large storage containers, ensure oxygen supply is sufficient to allow stability. Can polymerise with intense heat release.

7.3 Specific end use(s)

No

8. EXPOSURE CONTROLS / PERSONAL PROTECTION**8.1 Control parameters:**

Components or products of decomposition according to point 10, with limit values related to the place of work which require monitoring.

Methyl Methacrylate**CAS No. 80-62-6**

WEL (8hrs)

208mg/m³ 50 ppm

WEL (15mins)

416 mg/m³ 100 ppm

8.2 Exposure controls:

Monitoring Data

For monitoring procedures and technical data refer to, for instance, The National Institute for Health & Safety (NIOSH) – Manual of Analytical Methods, method 2537.

Derived No-Effect Level
(DNEL)

| Critical Component | Routes of Exposure (LONG-TERM) | DNEL |
|---------------------|--------------------------------|--|
| Methyl Methacrylate | Inhalation Dermal Oral | 210mg/m ³ 74.3mg/m ³ - |

Predicted No-Effect
Concentration
(PNEC)

| Critical Component | Routes of Exposure (LONG-TERM) | PNEC |
|---------------------|--------------------------------|--------------------|
| Methyl Methacrylate | Water Soil Air | 0.94mg/l - - |

General protective measures: Do not inhale vapours. Avoid contact with eyes and skin.

8.3 Personal Protective Equipment:**Hygiene measures:**

Store work clothes separately. Remove soiled or soaked clothing immediately. Follow the usual good standards of occupational hygiene. Clean skin thoroughly after handling. Apply skin cream.

Respiratory protection:

If ventilation is insufficient, breathing apparatus to be used in case of high concentrations, short term: filter appliance, filter A.

| | |
|-------------------------|--|
| Hand protection: | Butyl rubber gloves (0.7mm), break through time 60 minutes (EN 374:2004). In practice, due to variable exposure conditions, this information can only be used as an aid to selection of a suitable chemical protection glove. This information does not substitute suitability tests by the end user. A suitable glove type should be selected for each work environment. Gloves should be replaced regularly, especially after extended contact with the substance. |
| Eye protection: | Wear approved, tightly fitting safety goggles. |
| Body protection: | On handling larger quantities: face mask, chemical-resistant boots and rubber apron. |

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties:

| | |
|---------------------------|---|
| Form: | Liquid |
| Colour: | Colourless |
| Odour: | Ester-like |
| Melting Temperature: | -48°C |
| Boiling Temperature: | 100.3°C @ 1.013hPa |
| Flashpoint: | 10°C (method DIN 51755 - closed cup) |
| Ignition Temperature: | 430°C (method DIN 51794) |
| Lower Explosion Limit: | 2.1% vol. @ 10.5°C |
| Upper Explosion Limit: | 12.5% vol. |
| Vapour Pressure: | 47hPa @ 20°C |
| Relative Density: | 0.94g/cm ³ @ 20°C |
| Relative Vapour Density: | >1 @ 20°C (related to air) |
| Solubility in Water: | 1.6g/l @ 20°C, difficult to mix |
| Solubility (Qualitative): | Miscible with most organic solvents |
| pH value: | Not applicable |
| Partition Co-efficient: | logPow 1.38 (measured, n-Octanol/water) |
| Viscosity (Dynamic): | 0.6mPa·s @ 20°C (method Brookfield) |

9.2 Other information: None

10. STABILITY AND REACTIVITY

10.1 Reactivity:

Refer to sections 2 and 10

10.2 Chemical stability:

Stable under normal temperature conditions and when used as directed. No decomposition occurs when used as directed.

10.3 Possibility of hazardous reactions:

Refer to section 2.3

10.4 Conditions to avoid:

The substance is normally supplied in a stabilised form. If the permissible storage period/storage temperature is exceeded, the product may polymerise with heat generation. Avoid excessive heat for long periods of time. Avoid heat, flames and other sources of ignition.

10.5 Incompatible materials:

Free radical initiators
 Reducing agents
 Tertiary amines
 Heavy metals
 Peroxides
 Oxidising agents
 Mineral acids
 Strong acids/alkalis

10.6 Hazardous decomposition products:

Oxides of carbon. No decomposition occurs when used as directed.

11. TOXICOLOGY INFORMATION**11.1 Information on toxicological effects:**

| | | |
|----------------------------------|--|--|
| Metabolism: | The substance is rapidly metabolised | |
| Acute Oral Toxicity: | LD ₅₀ rat | >5000mg/kg |
| | LD ₅₀ mouse | =5200mg/kg |
| | LD ₅₀ rabbit | >5000mg/kg |
| Acute Inhalation Toxicity: | LC ₅₀ rat, 4h | 29.8mg/l |
| | LC ₅₀ mouse, 3h | 33mg/l |
| Acute Dermal Toxicity: | LD ₅₀ rabbit | >5000mg/kg |
| Caustic Burning/Skin Irritation: | Rabbit, 24h (OECD 405) If skin contact is prolonged and/or frequent, irritations cannot be excluded. Skin Irritant Category 2 (UN-GHS) | Not irritating- slightly irritating |
| Serious Eye Damage/Irritation: | Rabbit, 24h | Not irritating- slightly irritating |
| Respiratory/Skin Sensitisation: | Guinea pig (OECD 406) Repeated exposure may cause skin dryness or cracking. In humans, various types of allergic reactions have been observed (symptoms: headache, eye irritations, skin affectations). Skin Irritant Category 1B (UN-GHS) | Sensitising |
| Aspiration Hazard: | No evidence for hazardous properties (structure-activity relationship). | |
| Germ Cell Mutagenicity: | +ve as well as –ve results in <i>in vitro</i> mutagenicity /genotoxicity tests. No experimental evidence of genotoxicity <i>in vivo</i> is available. In general, not mutagenic according to international criteria | |

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|---|---|-------------------|
| Carcinogenicity: | Non-carcinogenic in inhalation and feeding studies performed in rats, mice and dogs | |
| Reprotoxicity/Teratogenicity: | No indication of toxic effects in experimental models | |
| Human Health Hazard Assessment: | CMR: No | |
| Specific Target Organ Toxicity - single exposure: | respiratory tract irritation | Hazard Category 3 |
| Specific Target Organ Toxicity - repeated exposure: | no evidence for hazardous properties | |
| | rat, inhalation, 25-400ppm | NOAEL, 25ppm |
| | Findings: damage to nasal mucous membrane | 400ppm |
| | Rat, dilute ingestion, 6-2000ppm | NOAEL, 2000ppm |
| | Findings: no toxic effect | |
| General Information: | Avoid contact with skin and eyes and inhalation of substance vapours. | |

12. ECOLOGICAL INFORMATION

12.1 Ecotoxicity:

| | | |
|------------------------------|---|-----------------------------------|
| Aquatic Environment | Hazardous to the aquatic environment | Acute Aquatic Toxicity Category 3 |
| Aquatoxicity, fish | LC ₅₀ <i>Oncorhynchus mykiss</i> , 96h | >79mg/l |
| | LC ₅₀ <i>Lepomis macrochirus</i> , 72h | 264mg/l |
| | LC ₅₀ <i>Lepomis macrochirus</i> , 96h | 191mg/l |
| Aquatoxicity, invertebrates | EC ₅₀ <i>Daphnia magna</i> , 48h (OECD 202) | 69mg/l |
| | <i>Daphnia magna</i> , 21d flow through (OECD 202) | NOEC, 37mg/l |
| Aquatoxicity, aquatic plants | EC ₅₀ <i>Selenastrum capricornutum</i> , 72hr (OECD 201) | >110mg/l |
| | EC3 <i>Scenedesmus quadricauda</i> , 8d (DIN 38412:9) | 37mg/l |
| Toxicity in Microorganisms | EC3 <i>Pseudomonas putida</i> , 16h | 100mg/l |

12.2 Persistence and degradability:

Persistence and Degradability No evidence for hazardous properties

Biodegradability Readily degradable, 14d, 28d (OECD 301, 301C) 94%
The substance is inherently biodegradable, but not readily biodegradable to OECD criteria

12.3 Bio accumulative potential:

Bioaccumulation No evidence for hazardous properties

12.4 Mobility in soil:

Mobility The substance has poor water solubility.
No evidence for hazardous properties.

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12.5 Results of PBT and vPvB assessment:

Persistent, Bio accumulative or Toxic No (REACH, Annex VIII)
very Persistent, very Bio accumulative No (REACH, Annex VIII)

12.6 Other adverse effects:

General Information Do not allow to enter soil, waterways or waste water.

13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods:

Substance: Waste is hazardous and to be treated as controlled waste. Product must be disposed of as special waste after consultation with local waste authorities and the disposal company in a suitable and licensed facility.

Packaging: Contaminated packaging should be emptied optimally and after appropriate professional cleaning may be taken for re-use. Packaging that cannot be cleaned should be disposed of professionally. Do not puncture or incinerate, even when empty. Contaminated rags and the like must be discarded into designated a fireproof bucket.

List of Waste, Chemicals and gases in containers, 16 05
LOW

| | |
|----------|---|
| 16 05 06 | Laboratory chemicals, consisting of or containing dangerous substances, including mixtures of laboratory chemicals. |
| 16 05 08 | Discarded organic chemicals consisting of or containing dangerous substances. |

Always check the given waste code according to the actual conditions of manufacturing, formulation or use in your facility.

14. TRANSPORT INFORMATION

14.1 UN number: UN 1247 Hazard Class 3, flammable liquids Packing Group II

14.2 UN proper shipping name:

| | | |
|--|--|---|
| Land Transport ADR/GGVSEB | UN/Germany UN 1247 | METHYL METHACRYLATE MONOMER, STABILISED, Class 3, Group II, Tunnel restriction code D/E Hazard no. 339 |
| Land Transport RID/GGVSEB | UN 1247 | METHYL METHACRYLATE MONOMER, STABILISED, Class 3, Group II Hazard no. 339 |
| Inland Waterway Transport ADNR/GGVSEB | UN 1247 | METHYL METHACRYLATE MONOMER, STABILISED, Class 3, Group II |
| Shipment by Sea IMDG/GGVSee | UN 1247 EmS Marine pollutant | METHYL METHACRYLATE MONOMER, STABILISED, Class 3, Group II F-E, S-D No |

SAFETY DATA SHEET

Air Transport ICAO/IATA

UN 1247

METHYL METHACRYLATE MONOMER,
STABILISED, Class 3, Group II

14.3 Transport hazard class(es):

Refer to section 14.2

14.4 Packing group:

Refer to section 14.2

14.5 Environmental hazards:

Refer to section 14.2, not applicable if unmentioned

14.6 Special precautions for user:

Refer to section 14.2

14.7 Transport in bulk according to the IBC code

For transport approval see regulatory information

MARPOL 73/78, Annex II –
Regulations for Control of Pollution
by Noxious Liquid Substance in Bulk.
SOLAS Chapter VII – Carriage of
Dangerous Goods

15. REGULATORY INFORMATION

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

National Legislation

Occupational Restrictions:

Note for juveniles.

Note for pregnant women and nursing mothers

EC Directive 92/85/EEC

| | | |
|-------------------------|------------|---------------------------|
| Status of Registration: | REACH (EU) | registered/pre-registered |
| | TSCA (USA) | listed or exempt |
| | DSL (CDN) | listed or exempt |
| | AICS (AUS) | listed or exempt |
| | METI (J) | listed or exempt |
| | ECL (KOR) | listed or exempt |
| | PICCS (RP) | listed or exempt |
| | IECSC (CN) | listed or exempt |
| | HSNO (NZ) | listed or exempt |

Code: HSR001195

COMMISSION REGULATION (EU) 2015/830 of 28 May 2015 amending Regulation (EC) No 1907/2006 of the European Parliament and of the Council on the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH).

COMMISSION REGULATION (EC) 2018/1480 of 4 October 2018 amending, for the purposes of its adaptation to technical and scientific progress, Regulation (EC) No 1272/2008 of the European Parliament and of the Council on classification, labelling and packaging of substances and mixtures and correcting Commission Regulation (EU) 2017/776.

REGULATION (EC) No 1907/2006 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH), establishing a European Chemicals Agency, amending Directive 1999/45/EC and repealing Council Regulation (EEC) No 793/93 and Commission Regulation (EC) No 1488/94as well as Council Directive 76/769/EEC and Commission Directives 91/155/EEC, 93/67/EEC, 93/105/EC and 2000/21/EC.

15.2 Chemical safety assessment

A Chemical Safety Assessment has not been carried out by the supplier.

16. FURTHER INFORMATION

The substance is normally supplied in a stabilised form.

If the permissible storage period and/or storage temperature is noticeably exceeded, the substance may polymerise with heat evolution.

The instructions given here are valid only for the substance as supplied, not for derivatives resulting from its use.

References: Quoted manuals and standards

IMO

OECD-SIDS

SIAR

NIH

NIOSH

UNECE

Revision

This document differs from the previous version in the following areas:

Title Revised to state in Accordance with Regulation (EU) 2015/830 & Regulation (EC) No. 1272/2008

15 Inclusion of Statements regarding pertinent EU regulations.

16 Addition of detailed revision information.

This datasheet has been re-written and replaces all previous versions. The information and all further technical advice is based on current knowledge and experience. The purpose of this Safety Data Sheet is to describe the substances in terms of their safety and handling requirements. The instructions given here are valid only for the product as supplied, not for derivatives resulting from its use. It implies no liability or other legal responsibility on our part. In particular, no warranty, whether expressed or implied, or guarantee of product properties in the legal sense is intended or implied. We reserve the right to make any changes according to technological progress or further developments. The customer is not released from the obligation to conduct careful inspection of incoming goods.