SAFETY DATA SHEET

1. IDENTIFICATION OF SUBSTANCES / PREPARATION AND COMPANY

Product Name: Enigma Colour Tone Liquid
Product Code: 0356, 0359, 0673
Application: Liquid carrier medium for acrylic polymer powder
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

Date: 24.11.2015 V3.0

2. HAZARD IDENTIFICATION

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 - Hazard category 3
Single exposure (inhalation)

Label elements
In Accordance with Regulation EC 1272/2008
Signal word Danger

GHS Pictogram

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/sparks/open flames/hot surfaces. No smoking.
P261 Avoid breathing dust/fume/gas/mist/vapours/spray
P280 Wear protective gloves/protective clothing/eye protection/face protection

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

Substances
In accordance with Regulation EC 1272/2008

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

4. FIRST AID MEASURES

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.

Most important symptoms and effects, both acute and delayed
Causes skin and eye irritation. Skin sensitisation.

5. FIRE FIGHTING MEASURES

Extinguishing media
Suitable extinguishing media: Foam, dry powder, carbon dioxide

Unsuitable extinguishing media: Water
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Special hazards arising from the substance or mixture: No

Advice for fire fighters: Wear self-contained breathing apparatus and full protective clothing.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures
Ensure adequate ventilation. Use personal protective clothing. Keep away from sources of ignition. Use breathing apparatus if exposed to vapour/dust/mist/aerosol.

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.

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 (eg. sand, diatomaceous earth, acid absorbent, universal absorbent or sawdust). Dispose of in accordance with local regulations.

Reference to other sections
For personal protection see section 8.
For disposal considerations see section 13.

7. HANDLING AND STORAGE

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.

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.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

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

<table>
<thead>
<tr>
<th>Methyl Methacrylate</th>
<th>CAS No. 80-62-6</th>
</tr>
</thead>
<tbody>
<tr>
<td>WEL (8hrs)</td>
<td>208mg/m³</td>
</tr>
<tr>
<td>WEL (15mins)</td>
<td>416 mg/m³</td>
</tr>
</tbody>
</table>
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Exposure controls: Derived No-Effect Level (DNEL)

<table>
<thead>
<tr>
<th>Critical Component</th>
<th>Routes of Exposure (LONG-TERM)</th>
<th>DNEL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Methyl Methacrylate</td>
<td>Inhalation</td>
<td>210mg/m³</td>
</tr>
<tr>
<td></td>
<td>Dermal</td>
<td>74.3mg/m³</td>
</tr>
<tr>
<td></td>
<td>Oral</td>
<td></td>
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</tbody>
</table>

Predicted No-Effect Concentration (PNEC)

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<tr>
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<th>Routes of Exposure (LONG-TERM)</th>
<th>PNEC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Methyl Methacrylate</td>
<td>Water</td>
<td>0.94mg/l</td>
</tr>
<tr>
<td></td>
<td>Soil</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>Air</td>
<td>-</td>
</tr>
</tbody>
</table>

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

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.

9. PHYSICAL AND CHEMICAL PROPERTIES

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: 109°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
10. STABILITY AND REACTIVITY

Reactivity:
Refer to sections 2.3 and 10.2

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

Possibility of hazardous reactions:
Refer to section 2.3.

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.

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

Hazardous decomposition products:
Oxides of carbon. No decomposition occurs when used as directed.

11. TOXICOLOGY INFORMATION

Information on toxicological effects:

Metabolism: The substance is rapidly metabolised

Acute Oral Toxicity:
- LD₅₀ rat: >5000mg/kg
- LD₅₀ mouse: =5200mg/kg
- LD₅₀ rabbit: >5000mg/kg

Acute Inhalation Toxicity:
- LC₅₀ rat, 4h: 29.8mg/l
- LC₅₀ mouse, 3h: 33mg/l

Acute Dermal Toxicity:
- LD₅₀ rabbit: >5000mg/kg

Caustic Burning/Skin Irritation:
- Rabbit, 24h (OECD 405): Not irritating - slightly irritating
  If skin contact is prolonged and/or frequent, irritations cannot be excluded.
Skin Irritant Category 2 (UN-GHS)

Serious Eye Damage/Irritation: Rabbit, 24h

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)

Aspiration Hazard: No evidence for hazardous properties (structure-activity relationship).

Germ Cell Mutagenicity: +ve as well as –ve results in \textit{in vitro} mutagenicity/genotoxicity tests. No experimental evidence of genotoxicity \textit{in vivo} is available. In general, not mutagenic according to international criteria.

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

Ecotoxicity:

Aquatic Environment Hazardous to the aquatic environment Acute Aquatic Toxicity Category 3

Aquatoxicity, fish
LC$_{50}$ \textit{Onchorhynchus mykiss}, 96h >79mg/l
LC$_{50}$ \textit{Lepomis macrochirus}, 72h 264mg/l
13. **DISPOSAL CONSIDERATIONS**

**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, 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.
### 14. TRANSPORT INFORMATION

<table>
<thead>
<tr>
<th>UN number:</th>
<th>Hazard Class 3, flammable liquids</th>
<th>Packing Group II</th>
</tr>
</thead>
<tbody>
<tr>
<td>UN 1247</td>
<td>Methyl methacrylate monomer, stabilised, Class 3, Group II, Tunnel restriction code D/E</td>
<td>Hazard no. 339</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>UN proper shipping name:</th>
<th>Land Transport ADR/GGVSEB</th>
<th>Land Transport RID/GGVSEB</th>
<th>Inland Waterway Transport ADNR/GGVSEB</th>
<th>Shipment by Sea IMDG/GGVSee</th>
<th>Air Transport ICAO/IATA</th>
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</tr>
</tbody>
</table>

Transport hazard class(es):
- Refer to section 14.2

Packing group:
- Refer to section 14.2

Environmental hazards:
- Refer to section 14.2, not applicable if unmentioned

Special precautions for user:
- Refer to section 14.2

### 15. REGULATORY INFORMATION

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
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

The data given above covers exclusively the safety requirements of the product(s) and is based on our current knowledge and experience. It does not signify any warranty with regards to the products properties. This product is only supplied for specific uses in dentistry and must be used in accordance with the directions for use.