1. IDENTIFICATION

Product Identifier
Product Name JET SET-4 LIQUID / RESINCAP LIQUID

Other means of identification
SDS# 030
UN/ID No UN1993
Product Code 3802X6, 3803, 3804, 3807, 3808, 3812, 3893 / 2302, 2307, 2308, 2312

Recommended use of the chemical and restrictions on use
Recommended Use Self-curing acrylic resin

Details of the supplier of the safety data sheet
Supplier Address Lang Dental Mfg. Co., Inc.
175 Messner Dr.
Wheeling, IL 60090
USA

Emergency telephone number
Company Phone Number 847-215-6622
Emergency Telephone (INFOTRAC) 352-323-3500 (International)
800-535-5053 (North America)

Authorized European Representative MedMark® Europe SARL
11, rue Emile Zola – BP 2332
38033 Grenoble Cedex 2
France
Tel: +33 476 86 43 22
Fax: +33 476 17 19 82
Email: info@medimark-europe.com

2. HAZARDS IDENTIFICATION

Classification

<table>
<thead>
<tr>
<th>Flammable liquids</th>
<th>Category 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Skin Corrosion / Irritation</td>
<td>Category 2</td>
</tr>
<tr>
<td>Skin Sensitization</td>
<td>Category 1</td>
</tr>
<tr>
<td>Specific Target Organ Toxicity - Single Exposure (Respiratory)</td>
<td>Category 3</td>
</tr>
</tbody>
</table>

Signal word Danger

Hazard statements
H225 Highly flammable liquid and vapor.
H315 Causes skin irritation.
H317 May cause an allergic skin reaction.
H335 May cause respiratory irritation.
Appearance: Clear  
Physical state: Liquid  
Odor: Acrid

Precautionary Statements – Prevention
P210  Keep away from heat/sparks/open flames/ hot surfaces. No smoking.
P233  Keep container tightly closed.
P240  Ground/bond container and receiving equipment.
P241  Use explosion-proof electrical/ventilating/lighting/equipment.
P242  Use only non-sparking tools.
P243  Take precautionary measures against static discharge.
P261  Avoid breathing dust/fume/gas/mist/vapors/spray.
P264  Wash hands thoroughly after handling.
P271  Use only outdoors or in a well-ventilated area.
P272  Contaminated work clothing should not be allowed out of the workplace.
P280  Wear protective gloves/protective clothing/eye protection/face protection.

Precautionary Statements – Response
P303+P361+P353  IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.
P304+P340  IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
P312  Call a POISON CENTER or doctor/physician if you feel unwell.
P333+P313  If skin irritation or rash occurs: Get medical advice/attention.
P362  Take off contaminated clothing and wash before use.
P370+P378  In case of fire: Use CO2, for extinction.

Precautionary Statements – Storage
P403+P233  Store in a well-ventilated place. Keep container tightly closed.
P403+P235  Store in a well-ventilated place. Keep cool.

Precautionary Statements – Disposal
P501  Dispose of contents/container in accordance with local regulation.

Hazardous component(s) for labeling:
Contains methyl methacrylate

Hazardous component(s) for labeling:
May be harmful if swallowed.

Other Information:
Harmful to aquatic life.

3. COMPOSITION / INFORMATION ON INGREDIENTS

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>CAS No</th>
<th>Weight - %</th>
<th>Trade Secret</th>
</tr>
</thead>
<tbody>
<tr>
<td>Methyl Methacrylate</td>
<td>80-62-6</td>
<td>&lt;90</td>
<td>*</td>
</tr>
<tr>
<td>2-Hydroxyethyl Methacrylate</td>
<td>868-77-9</td>
<td>&lt;20</td>
<td>*</td>
</tr>
<tr>
<td>N, N-Dimethyl-p-Toluidine</td>
<td>99-97-8</td>
<td>&lt;2</td>
<td>*</td>
</tr>
</tbody>
</table>

*Specific chemical weight has been withheld as a trade secret.
4. FIRST AID MEASURES

First aid measures

Inhalation Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a physician or poison control center immediately.

Eye contact Immediately flush with plenty of water. After initial flushing, remove any contact lenses and continue flushing for at least 15 minutes. Call a physician immediately.

Ingestion Do NOT induce vomiting. Drink plenty of water or milk immediately. Never give anything by mouth to an unconscious person. Provide an estimate of the time at which the material was ingested and the amount of the substance that was swallowed. Call a physician or poison control center immediately.

Skin Contact Wash off immediately with plenty of soap and water. Take off contaminated clothing. Wash contaminated clothing before reuse. If skin irritation or rash occurs, get medical advice/attention.

Most important symptoms and effects, both acute and delayed

Symptoms May cause skin and eye irritation. May cause irritation to the mucous membranes and upper respiratory tract.

Indication of any immediate medical attention and special treatment needed

Note to physicians Treat symptoms conventionally, after thorough decontamination.

5. FIRE-FIGHTING MEASURES

Extinguishing Media

Suitable: Chemical foam, carbon dioxide (CO₂), dry chemical

Unsuitable: Water spray

Specific hazards arising from the chemical

For bulk size >1L – High temperatures, inhibitor depletion, accidental impurities, or exposure to radiation or oxidizers may cause spontaneous polymerizing reaction generating heat/pressure. Closed containers may rupture or explode during a runaway polymerization. Use a water spray or fog to reduce or direct vapors. Extremely flammable. Vapors are heavier than air and may spread along the floors. Vapors may travel to source of ignition and flash back. Heat/impurities may cause pressure to build and/or rupture closed containers, spreading fire, increasing risk or burns/injuries.

| Hazardous Combustion Products: | Carbon oxides |
| Sensitivity to Mechanical Impact: | No |
| Sensitivity to Static Discharge: | Yes |

Protective equipment and precautions for firefighters

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear. Fight fire from a safe location.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Personal precautions ELIMINATE all ignition sources (no smoking, flares, sparks or flames in immediate area). Use personal protective equipment as required. Ensure adequate ventilation. Remove any contaminated clothing and wash thoroughly before reuse.
Environmental precautions
Prevent product from entering drains. Spillages or uncontrolled discharges into watercourses must be alerted to the appropriate regulatory body.

Methods and material for containment and clean-up
Method for containment
Absorb with earth, sand or other non-combustible material and transfer to containers for later disposal. DO NOT use combustible materials such as sawdust.

Method for clean-up
Use only non-sparking tools. Wash all affected areas with plenty of warm water and soap.

7. HANDLING AND STORAGE

Precautions for safe handling
Advice on safe handling
Observe precautions found on the label. Keep containers closed when not in use. All equipment used when handling the product must be grounded. Use spark-proof tools and explosion-proof equipment. Avoid contact with skin, eyes and clothing. Use only in well-ventilated areas. Vapors are heavier than air and may travel along the floor and in the bottom of containers. Take precautionary measures against static discharges. Keep away from heat, sparks, open flames, and hot surfaces. NO SMOKING. Use personal protection recommended in Section 8. Wash thoroughly after handling. Contaminated work clothing should not be allowed out of the workplace. Do not breathe dust, fume, gas, mist, vapor or spray.

Conditions for safe storage, including any incompatibilities
Storage Conditions
Keep containers tightly closed in a dry, cool and well-ventilated place. Keep away from heat, sparks, flame and other sources of ignition (i.e. pilot lights, electric motors and static electricity). Protect from direct sunlight. Keep container closed to prevent water absorption and contamination. Methacrylate stored in bulk must be kept in contact with air (oxygen). Keep at a temperature not exceeding 25°C.

Packaging materials
Keep in original container.

Incompatible materials
Strong oxidizing agents, strong reducing agents, free-radical generators, inert gases, oxygen scavengers
Material has strong solvent properties and can soften paint and rubber.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Exposure guidelines
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.

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>ACGIH TLV</th>
<th>OSHA PEL</th>
<th>NIOSH IDLH</th>
</tr>
</thead>
<tbody>
<tr>
<td>Methyl Methacrylate</td>
<td>STEL: 100 ppm</td>
<td>TWA:100 ppm</td>
<td>IDLH: 1000 ppm</td>
</tr>
<tr>
<td>80-62-6</td>
<td>TWA: 50 ppm</td>
<td>TWA: 410 mg/m³</td>
<td>TWA: 100 ppm</td>
</tr>
<tr>
<td></td>
<td></td>
<td>TWA: 100 ppm (vacated)</td>
<td>TWA: 410 mg/m³ (vacated)</td>
</tr>
</tbody>
</table>

Appropriate engineering controls

Engineering controls
Apply technical measures to comply with the occupational exposure limits.
Eyewash stations
Individual protection measures, such as personal protective equipment

Eye / face protection  Depending on the use of this product, safety glasses or goggles may be worn. If necessary, refer to US OSHA 29CFR SS1910.133, Canadian standards or the European Standard EN 166. Ensure that an eyewash station, sink or washbasin is available in case of exposure to eyes.

Skin and body protection  If anticipated that prolonged and repeated skin contact will occur during use of this product, wear gloves for routine industrial use. If necessary, refer to US OSHA 29CFR SS1910.138 or the appropriate standards of Canada or the EC member states. Wear suitable protective clothing.

Respiratory protection  Wear suitable respiratory equipment if exposure to levels above the occupational exposure limit is likely. A suitable mask with filter type A may be appropriate. In the event of formation of particularly high levels of vapor, a self-contained breathing apparatus may be appropriate.

General hygiene considerations  Handle in accordance with good industrial hygiene and safety practice.

9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Values</th>
<th>Remarks / Method</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical state</td>
<td>Liquid</td>
<td>Odor</td>
</tr>
<tr>
<td>Appearance</td>
<td>Liquid</td>
<td>Odor threshold</td>
</tr>
<tr>
<td>Color</td>
<td>Clear</td>
<td></td>
</tr>
<tr>
<td>pH</td>
<td>Not determined</td>
<td></td>
</tr>
<tr>
<td>Melting point / freezing point</td>
<td>Not determined</td>
<td></td>
</tr>
<tr>
<td>Boiling point / boiling range</td>
<td>101°C / 214°F</td>
<td></td>
</tr>
<tr>
<td>Flash point</td>
<td>11.5°C / 52.7°F</td>
<td></td>
</tr>
<tr>
<td>Evaporation rate</td>
<td>3.1</td>
<td>Butyl acetate = 1</td>
</tr>
<tr>
<td>Flammability (solid, gas)</td>
<td>n/a (liquid)</td>
<td></td>
</tr>
<tr>
<td>Flammability limits in air</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Upper flammability limit</td>
<td>12.5%</td>
<td></td>
</tr>
<tr>
<td>Lower flammability limit</td>
<td>2.12%</td>
<td></td>
</tr>
<tr>
<td>Vapor pressure</td>
<td>28mm Hg</td>
<td>@ 20°C</td>
</tr>
<tr>
<td>Vapor density</td>
<td>3.5</td>
<td>@15.5°C (Air = 1)</td>
</tr>
<tr>
<td>Specific gravity</td>
<td>0.967</td>
<td></td>
</tr>
<tr>
<td>Water solubility</td>
<td>1.6 wt%</td>
<td></td>
</tr>
<tr>
<td>Solubility in other solvents</td>
<td>Not determined</td>
<td></td>
</tr>
<tr>
<td>Partition coefficient</td>
<td>Not determined</td>
<td></td>
</tr>
<tr>
<td>Autoignition temperature</td>
<td>421°C / 790°F</td>
<td></td>
</tr>
<tr>
<td>Decomposition temperature</td>
<td>Not determined</td>
<td></td>
</tr>
<tr>
<td>Kinematic viscosity</td>
<td>Not determined</td>
<td></td>
</tr>
<tr>
<td>Dynamic viscosity</td>
<td>Like water</td>
<td></td>
</tr>
<tr>
<td>Explosive properties</td>
<td>Not determined</td>
<td></td>
</tr>
<tr>
<td>Oxidizing properties</td>
<td>Not determined</td>
<td></td>
</tr>
</tbody>
</table>

Other information

Density  0.967 g/mL

10. STABILITY AND REACTIVITY

Reactivity  Not reactive under normal conditions

Chemical stability  Unstable / reactive upon depletion of inhibitor
Possibility of hazardous reactions
None under normal processing

Hazardous polymerization Hazardous polymerization may occur. Monomer vapors are inhibited and may form polymers in vent or flame arresters, resulting in blockage of vents.

Conditions to avoid
Temperatures above 25°C (77°F), localized heat sources (e.g. drum or band heaters), oxidizing conditions, freezing conditions, direct sunlight, ultraviolet radiation, inert gas blanketing

Incompatible materials
Strong oxidizing agents, strong reducing agents, free-radical generators, inert gases, oxygen scavengers
Material has strong solvent properties and can soften paint and rubber.

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposures

Product information
Inhalation Harmful if inhaled.
Eye contact Causes severe eye irritation.
Skin contact Causes skin irritation. May be harmful in contact with skin.
Ingestion May be harmful if swallowed.

Component information

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>ORAL LD50</th>
<th>DERMAL LD50</th>
<th>INHALATION LC50</th>
</tr>
</thead>
<tbody>
<tr>
<td>Methyl Methacrylate 80-62-6</td>
<td>7872 mg/kg (rat)</td>
<td>&gt;5 g/kg (rabbit)</td>
<td>400 ppm (rat) 1 h</td>
</tr>
<tr>
<td>2-Hydroxyethyl Methacrylate 868-77-9</td>
<td>5050 mg/kg (rat)</td>
<td>&gt;3000 mg/kg (rabbit)</td>
<td>-</td>
</tr>
<tr>
<td>N, N-Dimethyl-p-Toluidine 99-97-8</td>
<td>1650 mg/kg (rat)</td>
<td>-</td>
<td>1400 mg/m³ (rat) 4 h</td>
</tr>
</tbody>
</table>

Information on physical, chemical and toxicological effects

Symptoms Contact may cause skin and eye irritation. May cause irritation to the mucous membranes and upper respiratory tract.

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Sensitization May cause allergic skin reaction.

Carcinogenicity Not classifiable as a human carcinogen

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>ACGIH</th>
<th>IARC</th>
<th>NTP</th>
<th>OSHA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Methyl Methacrylate 80-62-6</td>
<td>-</td>
<td>Group 3</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

IARC (International Agency for Research on Cancer)
Group 3 IARC components are "not classifiable as human carcinogens"

STOT – single exposure May cause respiratory irritation. May cause drowsiness or dizziness.
STOT – repeated exposure May cause damage to organs through prolonged or repeated exposure.
Numerical measures of toxicity – Product
Not determined

The following values are calculated based on chapter 3.1 of the GHS document.

<table>
<thead>
<tr>
<th>Product</th>
<th>Oral</th>
<th>mg/kg</th>
<th>Dermal</th>
<th>mg/kg</th>
<th>Inhalation-Dust/Mist</th>
<th>ppm</th>
</tr>
</thead>
<tbody>
<tr>
<td>ATEmix</td>
<td>2997</td>
<td></td>
<td>4693</td>
<td></td>
<td>6656</td>
<td></td>
</tr>
</tbody>
</table>

12. ECOLOGICAL INFORMATION

Ecotoxicity

Harmful to aquatic life.

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>Algae / aquatic plants</th>
<th>Fish</th>
<th>Toxicity to microorganisms</th>
<th>Crustacea</th>
</tr>
</thead>
<tbody>
<tr>
<td>Methyl Methacrylate 80-62-6</td>
<td>170: 96 h Psuedokirchneriella subcapitata mg/L EC50</td>
<td>125.5-190.7: 96 h Pimephales promelas mg/L LC50 static; 153.9-341.8: 96 h Lepomis macrochirus mg/L LC50 static; 170-206: 96 h Lepomis macrochirus mg/L LC50 flow-through; 243-275: 96 h Pimephales promelas mg/L LC50 flow-through; 326.4-426.9: 96 h Poecilia Telticulae mg/L LC50 static; &gt;79: 96 h Oncorhynchus mykiss mg/L LC50 flow-through; &gt;79: 96 h Oncorhynchus mykiss mg/L LC50 static</td>
<td>-</td>
<td>69: 48 h Daphnia magna mg/L EC50</td>
</tr>
<tr>
<td>2-Hydroxyethyl Methacrylate 868-77-9</td>
<td>-</td>
<td>213-242: 96 Pimphales promelas mg/L LC50 flow-through; 227-96 Pimphales promelas mg/L LC50</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>N,N-Dimethyl-p-Toluidine 99-97-8</td>
<td>-</td>
<td>42-50.5: 96 Pimphales promelas mg/L LC50 flow-through</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

Persistence and degradability
Not readily biodegradable

Bioaccumulation
Not determined

Mobility
Potential for mobility in soil is very high.

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>Partition coefficient</th>
</tr>
</thead>
<tbody>
<tr>
<td>Methyl Methacrylate 80-62-6</td>
<td>0.7</td>
</tr>
<tr>
<td>2-Hydroxyethyl Methacrylate 868-77-9</td>
<td>0.47</td>
</tr>
</tbody>
</table>

Other adverse effects
COD = 88% (28 days), DOC removal > 95% (28 days)

13. DISPOSAL CONSIDERATIONS

Waste treatment methods

Disposal of wastes
Follow all local and national government regulations in disposing material or contaminated packaging.
For U.S. - Dispose of in accordance with federal, state and local regulations. When discarded, it is considered a hazardous waste by the EPA under RCRA. The reportable quantity for methyl methacrylate is 1000 lb. (40 CFR Part 302). Add excess inhibitor before disposing.

**Contaminated Packaging**

Reuse of empty drums or containers is not recommended. Employees should be advised of the potential hazards due to residual material associated with empty containers. Dispose of all empty containers in accordance with local and national government regulations.

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>RCRA</th>
<th>RCRA – Basis for Listing</th>
<th>RCRA – D Series Wastes</th>
<th>RCRA – U Series Wastes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Methyl Methacrylate 80-62-6</td>
<td>U162</td>
<td>Included in waste stream; F039</td>
<td>-</td>
<td>U162</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>California Hazardous Waste Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>Methyl Methacrylate 80-62-6</td>
<td>Toxic Ignitable</td>
</tr>
</tbody>
</table>

**14. TRANSPORTATION INFORMATION**

**DOT**

- **UN / ID No:** UN1993
- **Proper shipping name:** Flammable liquid, n.o.s. (Methyl Methacrylate monomer, stabilized / N,N-Dimethyl-p-Toluidine solution)
- **Hazard Class:** 3
- **Packing Group:** II
- **Reportable Quantity (RQ):** 1000 lb. (methyl methacrylate)

**IATA**

- **UN / ID No:** UN1993
- **Proper shipping name:** Flammable liquid, n.o.s. (Methyl Methacrylate monomer, stabilized / N,N-Dimethyl-p-Toluidine solution)
- **Hazard Class:** 3
- **Packing Group:** II

**IMDG**

- **UN / ID No:** UN1993
- **Proper shipping name:** Flammable liquid, n.o.s. (Methyl Methacrylate monomer, stabilized / N,N-Dimethyl-p-Toluidine solution)
- **Hazard Class:** 3
- **Packing Group:** II

**15. REGULATORY INFORMATION**

**International Inventories**

- **TSCA:** Listed United States Toxic Substances Control Act, Section 8(b) Inventory
- **DSL:** Listed Canadian Domestic Substances List
- **EINECS:** Listed European Inventory of Existing Chemical Substances

**EU Regulations**

- **EC No. 1272/2008 (CLP) Classification, Labeling, Packaging**
- **Medical Devices Directive 93/42/EEC - Class I Medical Devices**

**US Federal Regulations**

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>CAS</th>
<th>Weight %</th>
<th>SARA 313 Threshold Values %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Methyl Methacrylate</td>
<td>80-62-6</td>
<td>&lt;90</td>
<td>1.0</td>
</tr>
</tbody>
</table>
SARA 311 / 312 Hazard Categories

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>CWA – Reportable Quantities</th>
<th>CWA – Toxic Pollutants</th>
<th>CWA – Priority Pollutants</th>
<th>CWA – Hazardous Substances</th>
</tr>
</thead>
<tbody>
<tr>
<td>Methyl Methacrylate 80-62-6</td>
<td>1000 lb.</td>
<td>-</td>
<td>-</td>
<td>X</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>Hazardous Substances RQs</th>
<th>CERCLA / SARA RQ</th>
<th>Reportable Quantity (RQ) Final</th>
</tr>
</thead>
<tbody>
<tr>
<td>Methyl Methacrylate 80-62-6</td>
<td>1000 lb.</td>
<td>-</td>
<td>1000 lb. / 454 kg</td>
</tr>
</tbody>
</table>

US State Right-to-Know Regulations

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>New Jersey</th>
<th>Massachusetts</th>
<th>Pennsylvania</th>
</tr>
</thead>
<tbody>
<tr>
<td>Methyl Methacrylate 80-62-6</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
</tbody>
</table>

16. OTHER INFORMATION

<table>
<thead>
<tr>
<th>NFPA</th>
<th>Health Hazards</th>
<th>Flammability</th>
<th>Instability</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td></td>
<td>3</td>
<td>2</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>HMIS</th>
<th>Health Hazards</th>
<th>Flammability</th>
<th>Physical Hazards</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td></td>
<td>3</td>
<td>2</td>
</tr>
</tbody>
</table>

Issue Date 26-Sept-2014
Revision Date 14-July-2015
Revision Note Section 1 – Rephrase recommended use statement; Section 2 – Revise classification categories, revise some Hazard Statements and Precautionary Statements, add hazardous component for labeling info

Information to be updated in due course Hazard pictograms listed in this SDS to be added to product label.

Disclaimer The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as guidance for safe handling, use, processing, storage, transportation, disposal and release. It is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

End of Safety Data Sheet