



# SAFETY DATA SHEET

Issue Date 26-Sept-2014

Revision Date

Version 1

## 1. IDENTIFICATION

### Product Identifier

Product Name ORTHO-JET LIQUID

### Other means of identification

SDS# 039  
UN/ID No UN1993  
Product Code 1303, 1304, 1306, 1307, 1308, 1309, 1323, 1334, 1356

### Recommended use of the chemical and restrictions on use

Recommended Use Fabrication of orthodontic appliances

### 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)

## 2. HAZARDS IDENTIFICATION

### Classification

|  |            |
|--|------------|
| Acute toxicity – Inhalation (Dusts/Mists)          | Category 4 |
| Skin corrosion / irritation                        | Category 2 |
| Serious eye damage / eye irritation                | Category 2 |
| Skin sensitization                                 | Category 1 |
| Specific target organ toxicity (single exposure)   | Category 3 |
| Specific target organ toxicity (repeated exposure) | Category 2 |
| Flammable liquids                                  | Category 2 |

### Signal word

Danger

**Hazard statements** Harmful if inhaled.  
Causes skin irritation.  
Causes severe eye irritation.  
May cause an allergic skin reaction.  
May cause respiratory irritation.  
May cause drowsiness or dizziness.  
May cause damage to organs through prolonged or repeated exposure.

Highly flammable liquid and vapor.



**Appearance** Clear to slightly tinted      **Physical state** Liquid      **Odor** Acrid

**Precautionary Statements – Prevention**

Use only outdoors or in a well-ventilated area.  
Wash face, hands and any exposed skin thoroughly after handling.  
Wear protective gloves and clothing. Wear eye and face protection.  
Contaminated clothing should not be allowed out of the workplace.  
Do not breathe dust, fume, gas, mist, vapors or spray.  
Keep away from heat, spark, open flame and hot surface. NO SMOKING.  
Keep container tightly closed.  
Ground/bond container and receiving equipment.  
Use explosion-proof equipment.  
Use only non-sparking tools.  
Take precautionary measures against static discharge.  
Keep cool.

**Precautionary Statements – Response**

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER or doctor/physician. If skin irritation or rash occurs, get medical advice/attention.  
IF ON SKIN (or hair): Remove/take off immediately all contaminated clothing. Rinse skin with water/shower. Wash contaminated clothing before reuse.  
IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Immediately call a POISON CENTER or doctor/physician.  
IN CASE OF FIRE: Use CO<sub>2</sub>, dry chemical or foam for extinction.

**Precautionary Statements – Storage**      Store in a well-ventilated place.  
Keep container tightly closed.  
Store locked up.

**Precautionary Statements – Disposal**      Dispose of contents/container to an approved waste disposal plant.

**Hazards not otherwise classified (HNOC)** May be harmful if swallowed

**Other Information**      Harmful to aquatic life with long lasting effects  
Harmful to aquatic life

**3. COMPOSITION / INFORMATION ON INGREDIENTS**

| Chemical Name             | CAS No  | Weight - % | Trade Secret |
|---------------------------|---------|------------|--------------|
| Methyl Methacrylate       | 80-62-6 | >95        | *            |
| N, N-Dimethyl-p-Toluidine | 99-97-8 | <2         | *            |

\*Specific chemical weight has been withheld as a trade secret.

**4. FIRST AID MEASURES**

**First aid measures**

|                     |   |
|---------------------|---|
| <b>Inhalation</b>   | Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a physician or poison control center immediately.   |
| <b>Eye contact</b>  | 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.  |
| <b>Ingestion</b>    | 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. |
| <b>Skin Contact</b> | 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** Exposed individuals may experience eye tearing, redness and discomfort. Contact may cause irritation and redness. Prolonged exposure in poorly ventilated area may cause respiratory irritation.

**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 (CO<sub>2</sub>), 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 of burns/injuries.

|  |               |
|--|---------------|
| <b>Hazardous Combustion Products:</b>    | Carbon oxides |
| <b>Sensitivity to Mechanical Impact:</b> | No            |
| <b>Sensitivity to Static Discharge:</b>  | 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.

| Chemical Name                  | ACGIH TLV                    | OSHA PEL   | NIOSH IDLH   |
|--------------------------------|------------------------------|--|--|
| Methyl Methacrylate<br>80-62-6 | STEL: 100 ppm<br>TWA: 50 ppm | TWA: 100 ppm<br>TWA: 410 mg/m <sup>3</sup><br>TWA: 100 ppm (vacated)<br>TWA: 410 mg/m <sup>3</sup> (vacated) | IDLH: 1000 ppm<br>TWA: 100 ppm<br>TWA: 410 mg/m <sup>3</sup> |

**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.

|                                       |  |
|---------------------------------------|--|
| <b>Skin and body protection</b>       | 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.  |
| <b>Respiratory protection</b>         | 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. |
| <b>General hygiene considerations</b> | Handle in accordance with good industrial hygiene and safety practice.   |

## 9. PHYSICAL AND CHEMICAL PROPERTIES

### Information on basic physical and chemical properties

|                       |                          |                       |                |
|-----------------------|--------------------------|-----------------------|----------------|
| <b>Physical state</b> | Liquid                   | <b>Odor</b>           | Acrid          |
| <b>Appearance</b>     | Liquid                   | <b>Odor threshold</b> | Not determined |
| <b>Color</b>          | Clear to slightly tinted |                       |                |

| <u>Property</u>                | <u>Values</u>   | <u>Remarks / Method</u> |
|--------------------------------|-----------------|-------------------------|
| pH                             | Not determined  |                         |
| Melting point / freezing point | Not determined  |                         |
| Boiling point / boiling range  | 101°C / 214°F   |                         |
| Flash point                    | 11.5°C / 52.7°F |                         |
| Evaporation rate               | 3.1             | Butyl acetate = 1       |
| Flammability (solid, gas)      | n/a (liquid)    |                         |
| Flammability limits in air     |                 |                         |
| Upper flammability limit       | 12.5%           |                         |
| Lower flammability limit       | 2.12%           |                         |
| Vapor pressure                 | 28mm Hg         | @ 20°C                  |
| Vapor density                  | 3.5             | @ 15.5°C (Air = 1)      |
| Specific gravity               | 0.949           | Water = 1               |
| Water solubility               | 1.6 wt%         |                         |
| Solubility in other solvents   | Not determined  |                         |
| Partition coefficient          | Not determined  |                         |
| Autoignition temperature       | 421°C / 790°F   |                         |
| Decomposition temperature      | Not determined  |                         |
| Kinematic viscosity            | Not determined  |                         |
| Dynamic viscosity              | Like water      |                         |
| Explosive properties           | Not determined  |                         |
| Oxidizing properties           | Not determined  |                         |

### Other information

|                |            |
|----------------|------------|
| <b>Density</b> | 0.949 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.

**Hazardous decomposition products** Carbon oxides

**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.  
**Ingestion** May be harmful if swallowed.

**Component information**

| Chemical Name                        | ORAL LD50        | DERMAL LD50      | INHALATION LC50                         |
|--------------------------------------|------------------|------------------|---|
| Methyl Methacrylate<br>80-62-6       | 7872 mg/kg (rat) | >5 g/kg (rabbit) | 400 ppm (rat) 1 h<br>4632 ppm (rat) 4 h |
| N, N-Dimethyl-p-Toluidine<br>99-97-8 | 1650 mg/kg (rat) | -                | 1400 mg/m <sup>3</sup> (rat) 4 h        |

**Information on physical, chemical and toxicological effects**

**Symptoms** Contact may cause irritation and redness. Exposed individuals may experience eye tearing, redness and discomfort. Prolonged exposure in poorly ventilated area may cause respiratory irritation.

**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

| Chemical Name                  | ACGIH | IARC    | NTP | OSHA |
|--------------------------------|-------|---------|-----|------|
| Methyl Methacrylate<br>80-62-6 | -     | Group 3 | -   | -    |

**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: liver, kidney, nose.

**Numerical measures of toxicity – Product** Not determined

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

|                               |      |       |
|-------------------------------|------|-------|
| ATEmix (oral)                 | 3082 | mg/kg |
| ATEmix (dermal)               | 5107 | mg/kg |
| ATEmix (inhalation-dust/mist) | 6848 | ppm   |

## 12. ECOLOGICAL INFORMATION

**Ecotoxicity**

Harmful to aquatic life with long-lasting effects

| Chemical Name                       | Algae / aquatic plants                                    | Fish   | Toxicity to microorganisms | Crustacea                           |
|-------------------------------------|---|--|----------------------------|-------------------------------------|
| Methyl Methacrylate<br>80-62-6      | 170: 96 h<br>Pseudokirchneriella<br>subcapitata mg/L EC50 | 125.5-190.7: 96 h Pimephales<br>promelas mg/L LC50 static;<br>153.9-341.8: 96 h Lepomis macrochirus mg/L<br>LC50 static;<br>170-206: 96 h Lepomis macrochirus mg/L<br>LC50 flow-through;<br>243-275: 96 h Pimephales promelas mg/L<br>LC50 flow-through;<br>326.4-426.9 96 h Poecilia reticulata mg/L<br>LC50 static;<br>>79: 96 h Oncorhynchus mykiss mg/L LC50<br>flow-through;<br>>79: 96 h Oncorhynchus mykiss mg/L LC50<br>static | -                          | 69: 48 h Daphnia magna<br>mg/L EC50 |
| N,N-Dimethyl-p-Toluidine<br>99-97-8 | -   | 42-50.5: 96 h Pimphales promelas mg/L<br>LC50 flow-through   | -                          | -                                   |

**Persistence and degradability** Not readily biodegradable

**Bioaccumulation** Not determined

**Mobility** Potential for mobility in soil is very high.

| Chemical Name                  | Partition coefficient |
|--------------------------------|-----------------------|
| Methyl Methacrylate<br>80-62-6 | 0.7                   |

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

## 13. DISPOSAL CONSIDERATIONS

**Waste treatment methods**

**Disposal of wastes** 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 properly in accordance with federal, state and local regulations.

| Chemical Name                  | RCRA | RCRA – Basis for Listing          | RCRA – D Series Wastes | RCRA – U Series Wastes |
|--------------------------------|------|-----------------------------------|------------------------|------------------------|
| Methyl Methacrylate<br>80-62-6 | U162 | Included in waste stream;<br>F039 | -                      | U162                   |

| Chemical Name                  | California Hazardous Waste Status |
|--------------------------------|-----------------------------------|
| Methyl Methacrylate<br>80-62-6 | Toxic Ignitable                   |

## 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   |

|                                   |
|-----------------------------------|
| <b>15. REGULATORY INFORMATION</b> |
|-----------------------------------|

**International Inventories**

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

**US Federal Regulations**

| Chemical Name       | CAS     | Weight % | SARA 313 Threshold Values % |
|---------------------|---------|----------|-----------------------------|
| Methyl Methacrylate | 80-62-6 | >95      | 1.0                         |

**SARA 311 / 312 Hazard Categories**

| Chemical Name                  | CWA – Reportable Quantities | CWA – Toxic Pollutants | CWA – Priority Pollutants | CWA – Hazardous Substances |
|--------------------------------|-----------------------------|------------------------|---------------------------|----------------------------|
| Methyl Methacrylate<br>80-62-6 | 1000 lb.                    | -                      | -                         | X                          |

| Chemical Name                  | Hazardous Substances RQs | CERCLA / SARA RQ | Reportable Quantity (RQ) Final |
|--------------------------------|--------------------------|------------------|--------------------------------|
| Methyl Methacrylate<br>80-62-6 | 1000 lb.                 | -                | 1000 lb. / 454 kg              |

**US State Right-to-Know Regulations**

| Chemical Name                  | New Jersey | Massachusetts | Pennsylvania |
|--------------------------------|------------|---------------|--------------|
| Methyl Methacrylate<br>80-62-6 | X          | X             | X            |

|                              |
|------------------------------|
| <b>16. OTHER INFORMATION</b> |
|------------------------------|

| NFPA | Health Hazards | Flammability | Instability |
|------|----------------|--------------|-------------|
|      | 2              | 3            | 2           |



| HMIS | Health Hazards | Flammability | Physical Hazards |
|------|----------------|--------------|------------------|
|      | 2              | 3            | 2                |

**Issue Date** 26-Sept-2014

**Revision Date**

**Revision Note**

**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 a 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