



AMERICAN TOOTH INDUSTRIES

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SAFETY DATA SHEET

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

PRODUCT NAME	Justi Cold Cure Ortho Resin Liquid
Product Description	Methyl Methacrylate
Manufacturer	American Tooth Industries 1200 Stellar Drive Oxnard, CA 93033 805-487-9868 Emergency Phone Number: Infotrac: 800-352-5053
Recommended use	An autopolymerizing material primarily used in the construction of orthodontic appliances.
Restrictions on use	N/A

2. HAZARDS IDENTIFICATION

Hazard classification	Flammable liquid Category 2. Skin corrosion / irritation Category 2. Skin sensitization Category 1. STOT- single exposure Category 3. Hazardous to the aquatic environment- Acute Hazard Category 3.
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. H402: Harmful to aquatic life.

Symbol



Precautionary statements

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 vapors.
P264: Wash thoroughly after handling.
P271: Use only outdoors or in a well-ventilated area.
P272: Contaminated work clothing should not be allowed.
P273: Avoid release to the environment
P280: Wear protective gloves/protective clothing/eye protection/face protection.
P302+P352: IF ON SKIN: Wash with plenty of soap and water.
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 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 reuse.
P370+P378: In case of fire, use water spray, foam, dry powder or CO2 for extinction.
P403+P233: Store in a well-ventilated place. Keep container tightly closed.
P403+P235: Store in well-ventilated place. Keep cool.
P405: Store locked up.
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.

Other hazards

Prolonged or repeated exposure can cause liver and kidney damage and an allergic reaction to the skin.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Statement for unknown toxicity	N/A
Chemical name	Methacrylate
Common name/synonyms	Stabilized methyl methacrylate monomer, 2-propenoic acid, 2-methyl-, methyl ester; MMA; MMM
Impurities and stabilizing additives	Standard grades contain inhibitors from among the following: 800 ppm Maximum Hydroquinone (CAS No. 123-31-9) p-Methoxyphenol (CAS No. 150-76-5) 2, 4-Dimethyl-6-t-butylphenol (CAS No. 1879-09-0) Octadecyl 3,5-di-tert-butyl-4-hydroxycinnamate (CAS No. 2082-79-3) Phenothiazine (CAS No. 92-84-2)

Chemical Name	Weight - %	CAS Number
Methyl Methacrylate	90-100%	80-62-6
Other Esther Adducts	0.1-0.3%	Not required
Hydroquinone	0.0026-0.0029%	123-31-9

*Specific chemical identity and/or exact percentage (concentration) of composition has been withheld as a trade secret is required.

4. FIRST AID MEASURES

Description of First Aid Measures

Inhalation

Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER or doctor if you feel unwell

Skin Contact

Wash with plenty of soap and water. If skin irritation or rash occurs: Get medical attention. Take off contaminated clothing and wash before re-use.

Eye Contact

Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Obtain immediate medical attention.

Ingestion

Do not induce vomiting. Rinse mouth. Obtain immediate medical attention.

Most important symptoms or effects, both acute and delayed:

Causes skin irritation. May cause respiratory irritation. May cause an allergic skin reaction.

Indication of immediate medical attention and special treatment needed:

None necessary.

5. FIRE-FIGHTING MEASURES

Suitable extinguishing media

In case of fire, use water spray, foam, dry powder or CO2 for extinction. Keep containers cool by spraying with water if exposed to fire.

Unsuitable extinguishing media

Do not use water jet.

Special hazards arising from substance

Highly flammable liquid and vapor. May polymerize on heating. Sealed containers may rupture explosively if hot.

Special protective equipment and

A self-contained breathing apparatus and suitable protective clothing should be worn in fire conditions.

Precautions for fire fighters

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Eliminate source of ignition. Wear protective gloves and eye/face protection. Avoid vapors. See Section. 8.

Environmental precautions

Avoid release to the environment. Spillages or uncontrolled discharges into watercourses must be alerted to the appropriate regulatory body.

Methods and materials for containment and cleaning up

Collect spillage. Do not absorb onto sawdust or other combustible materials. Transfer to a container for disposal or recovery. Use only non-sparking tools.

7. HANDLING AND STORAGE

Handling

Do not eat, drink, or smoke at the work place. Wash thoroughly after handling. Avoid breathing vapors. Use only outdoors or in a well-ventilated area. The vapor is heavier than air; beware of pits and confined spaces.

Storage

Ground container and receiving equipment. Use explosion proof electrical equipment. Use only non-

sparkling tools. Take precautionary measures against static discharge. Keep container tightly closed. Store in well-ventilated place. Keep cool. Store locked up. Keep away from heat, sparks, open flame, hot surfaces- No smoking. Protect from sunlight.

IMPORTANT: Methacrylates stored in bulk must be kept in contact with air (oxygen). Monomer vapors are uninhibited and may form polymers in vent or flame arresters, resulting in blockage of vents. Check inhibitor levels every 6 months and return to original level.

Storage temperature

Store at temperatures not exceeding 77°F (25°C).

Incompatible materials

Polymerization catalysts, such as peroxy or azo compounds, strong acids, alkalis and oxidizing agents, Oxides and salts of transition metals. Organic Nitrogen containing compounds. Cyclohexanone/cyclohexanol tautomer.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

OSHA Permissible Exposure Limits

410 mg/m³ TWA

ACGIH Threshold Limit Values

205 mg/m³ TWA

Other limitations recommended

N/A

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.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance

Liquid

Color

Clear/colorless

Odor

Characteristic strong and acrid.

Odor Threshold (ppm)

0.5-1.0

pH

N/A

Melting Point (°C)

-48

Initial Boiling Point(°C)

100.5

Flash Point

10 [Closed cup]

Evaporation Rate

N/A

Flammability (solid, gas)

N/A

Upper/Lower Flammability limits

12.5/2.1

Vapor Pressure

3600 AT 68°F (20°C)

Vapor Density

3.5

Solubility	Slightly soluble. 1.6% at 68°F(20°C)
Partition Coefficient: n-octano/water	1.38
Auto-ignition Temperature	421
Decomposition Temperature	N/A
Viscosity	N/A
Explosive Properties	N/A
Oxidising Properties	N/A
Density (g/ml)	0.949 at 60°F (15.5°C)
Minimum Ignition Energy (mJ)	0.89-0.97 at 73.5°F (23°C)

10. STABILITY AND REACTIVITY

Reactivity	Will exothermically polymerize in the presence of inhibitors.
Chemical Stability	Stable in the presence of inhibitor.
Hazardous Reactions	Susceptible to polymerization initiated by prolonged heating or at the presence of catalyst.
Conditions to avoid	Heat and direct sunlight.
Materials to avoid	Polymerization catalysts, such as proxy or azo compounds, strong acids, alkalis and oxidizing agents. Oxidize and salts of transition metals. Organic Nitrogen containing compounds. Cyclohexanone/cyclohexanol tautomer
Hazardous Decomposition Products	Does not decompose up to auto-ignition temperature.

11. TOXICOLOGICAL INFORMATION

Acute Toxicity	
Inhalation	May cause respiratory irritation. May cause drowsiness and dizziness.
Inhalation toxicity data	LC50 (vapor) 7093 ppm (29.8 mg/l) (4hr)
Inhalation STOT- single exposure	Exposure to high concentrations may produce adverse effects on the nasal epithelium.
Respiratory sensitization data	Not a respiratory sensitizer. Irritant to the respiratory system and high concentrations may aggravate pre-existing conditions.
Ingestion	Low oral toxicity, but ingestion may cause irritation of the gastrointestinal tract.
Ingestion toxicity date	LD 50 (oral) > 500mg/Kg
Ingestion STOT- single exposure	N/A
Skin contact	May cause an allergic skin reaction. Causes skin irritation. Repeated and/or prolonged contact may cause dermatitis.
Skin contact toxicity data	LD50 (dermal) > 500 mg/Kg
Skin contact STOT- single exposure	N/A
Skin sensitization data	Skin sensitization has been reported in studies with guinea pigs. (OECD 406). Evidence of contact sensitization in man.
Eye contact	High vapor concentration will cause irritation.
Eye contact toxicity data	Slight irritant to rabbit eyes. (OECD 405)

EyeSTOT- single exposure	N/A
Germ cell mutagenicity data`	Salmonella typhimurium (TA1535, 1537, 97, 98, 100) negative (OECD 471)
Repeated exposure toxicity	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 400 ppm) 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	NOEL (oral) (rat) (104 weeks) >2000ppm NOAEC (inhalation) (rat) (104 weeks) 100 ppm (OECD 453) NOAEC (inhalation) (mouse) (14 weeks) 1000 ppm (OECD 412)
Reproductive toxicity	Teratogenic and feotoxiceffects only observed in presence of maternal toxicity. NOAEC (mouse) = 9000 ppm NOAEC (rat) > 2028 ppm
Carcinogenicity data	No evidence of carcinogenicity. (OECD 451)
Other information	None

12. ECOLOGICAL INFORMATION (If available)

Ecotoxicity	Low toxicity to fish. LC50 (fish) (typically) >100 mg/l LC50 (fathead minnow) (96 hour) (static) 130 mg/l Harmful to aquatic invertebrates. EC50 (Daphnia magna) (48 hour) 69 mg/l Low toxicity to algae. EC50 (selenastrum capricornutum) (86 hour) 170mg/l NOEC (zebra fish) (35 day) (flow through) 8.4 mg/l The product is substantially removed in biological treatment processes.
Persistence and degradability	Readily biodegradable. Chemical Oxygen Demand (COD): 88% (28 days) Inherent Biodegradation.

Dissolved Organic Carbon Removal (DOC) removal): >95% (28 days)

Bioaccumulative potential

This product has low potential for bioaccumulation.

Mobility

The product is predicted to have high mobility in soil.

Other adverse effects

None known.

13. DISPOSAL CONSIDERATIONS (If applicable)

Avoid release to the environment. Decontaminate empty drums before recycling.

Disposal 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.

14. TRANSPORT INFORMATION (If applicable)

UN No.

1247

Proper Shipping Name

METHYL METHACRYLATE MONOMER, STABILIZED
If material is shipped in quantities greater than 1000 lb. per container, the Proper Shipping Name is RQ METHYL METHACRYLATE MONOMER, STABILIZED

Class

3

Packing group

II

Special precautions for user

No special requirements

Transport in bulk according to Annex II of MARPOL73/78 and the IBC code

N/A

Reportable Quantity (RQ)

1000 lb

TDG Class

3.2 (9.2)

TMD Packing Group

II

Marine Pollutant

Not classified as a Marine Pollutant.

15. REGULATORY INFORMATION (If available)

US Federal Regulations

Superfund reportable discharge	1000 lb
SARA 302- Extremely Hazardous Substances	Not listed
SARA 311/312 Hazard Categories	
Acute	Yes
Chronic	No
Fire	Yes
Reactivity	Yes
Pressure	No
SARA 313- Toxic Chemicals	Listed.

US State Regulations
California

Proposition 65 (California): Not listed

Canadian Regulations
WHMIS Classification

Class B, Division 2, Flammable Liquid
Class D, Division 2, Subdivision B, Toxic Material
Class F, Dangerously Reactive Material

NFPA Rating

Health	2
Flammability	3
Reactivity	2

NPCA-HMIS Rating

Health	2
Flammability	3
Reactivity	2

16. OTHER INFORMATION

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