



SAFETY DATA SHEET (SDS)
DP-ORTHO LIQUID (Clear, Pink, Crystal)

1. IDENTIFICATION

Product Name: DP-Ortho liquid (clear, pink or crystal)
for DP-Ortho-C and DP-Ortho-F resins
Other Name or Code: 1082100 or 1082200 (clear)
1082122 or 1082222 (pink)
1082121 or 1082221 (crystal)
Use: Orthodontic appliances
Supplier Name: DenPlus Inc.
Address: 333-M Chemin du Tremblay
Boucherville, QC, Canada, J4B 7M1
Phone Number for Information: 450.641.1330
Emergency Phone Number: 613.996.6666
Anti-Poison Center of Quebec 1.800.463.5060

2. HAZARDS IDENTIFICATION

2.1 Classification

Flammable liquid - Category 2	H225	Highly flammable liquid and vapor
Skin corrosion/irritation - Category 2	H315	Causes skin irritation
Skin sensitization – Category 1	H317	May cause an allergic skin reaction
Serious eye damage/eye irritation - Category 2B	H320	Cause eye irritation
Specific target organ toxicity (STOT) - single exposure - Category 3	H335	May cause respiratory irritation

2.2 Label elements



Signal word: Danger

Hazard statements: H225 Highly flammable liquid and vapor
H315 Causes skin irritation
H317 May cause an allergic skin reaction
H320 Cause eye irritation
H335 May cause respiratory irritation

Precautionary statements:	P210	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No Smoking.
	P261	Avoid breathing vapors.
	P280	wear protective gloves/protective clothing/eye protection/face protection.
	P302+P352	IF ON SKIN: Wash with plenty of water.
	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.

3. INFORMATION ON INGREDIENTS

Hazardous ingredients	CAS	Concentration range
Methyl Methacrylate Monomer Inhibited	80-62-6	80 to 100 %
Ethylene Glycol Dimethacrylate	97-90-5	3 to 7 %
N,N-Dimethyl-p-toluidine	99-97-8	1 to 5 %

4. FIRST-AID MEASURES

4.1 Description of first aid measures

Information	Methyl methacrylate is absorbed into the body by inhalation, swallowing and through the skin.
Inhalation	IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a poison center or doctor if you feel unwell.
Skin Contact	IF ON SKIN (or hair): Wash with plenty of water. If skin irritation or rash occurs, get medical attention. Take off contaminated clothing.
Eye Contact	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Obtain immediate medical attention.
Ingestion	IF SWALLOWED: rinse mouth. Do NOT induce vomiting. Obtain immediate medical attention.

4.2 Most important symptoms and effects, both acute and delayed

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

4.3 Indication of any immediate medical attention and special treatment needed

None necessary.

5. FIREFIGHTING MEASURES

5.1 Extinguishing media

In case of fire, use water spray, carbon dioxide (CO₂), spray foam, dry powder. Keep containers cool by spraying water if exposed to fire. Do not use water jet.

5.2 Special hazards arising from the substance or mixture

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

5.3 Advice for firefighters

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

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

Eliminate sources of ignition. Wear protective gloves and eye/face protection. Avoid breathing vapors. See section 8.

6.2 Environmental precautions

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

6.3 Methods and material for containment and cleaning up

Collect spillage. Adsorb spillages onto sand, earth or any suitable adsorbent material. Do not adsorb onto sawdust or other combustible materials. Transfer to a lidded container for disposal or recovery. Use only non-sparking tools.

6.4 Reference to other sections

See section: 8, 13

7. HANDLING AND STORAGE

7.1 Precautions for safe 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. Ground container and receiving equipment. Use explosion proof electrical equipment. Use only non-sparking tools. Take precautionary measures against static discharge.

7.2 Conditions for safe storage, including any incompatibilities

Keep container tightly closed. Store in a well-ventilated place. Keep cool. Store locked up. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Protect from sunlight.

Storage temperature (°C): Preferably not exceeding 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/Cyclohexenol tautomer.

7.3 Specific end use(s)

Production of dentures.

8. EXPOSURE CONTROLS AND PERSONAL PROTECTION

8.1 Control parameters:

Substance	LTEL	LTEL	STEL	STEL
Methyl Methacrylate	205 mg/m ³	50 ppm	416 mg/m ³	100 ppm

LTEL: Long-term exposure limit

STEL: Short-term exposure limit

8.2 Exposure controls

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. The following information is given as general guidance.

Eye/face protection	Wear eye/face protection. Safety spectacles/goggles/full face shield.
Skin protection	Wear suitable gloves. For splash protection: Butyl; EN 374. For immersion protection: Butyl; 0.7 mm or greater; EN 374. Suitability of gloves should be confirmed with glove manufacturer. Change gloves, if contamination occurs or duration of activity exceeds breakthrough time. Breakthrough time of the glove material: refer to the information provided by the gloves' producer.
Respiratory protection	Wear suitable respiratory protective equipment if exposure to levels above the occupational exposure limit is likely. A dust mask is not acceptable. A suitable mask with filter type A (EN141 or EN405) may be appropriate. In the event of formation of particularly high levels of vapor a self contained breathing apparatus may be appropriate.

Environmental exposure controls

Ensure proper process control to ensure releases to air are within local permits. Monitor and regularly maintain ventilation equipment to ensure performance. Do not empty into drains. Contain and collect spillages for incineration. Fully polymerize before landfill. Only dispose of polymerized material with household waste.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	Clear, Crystal or Pink liquid
Odor	Characteristic strong and acrid
pH (Value)	Not applicable
Boiling Point (°C)	100.5
Flash Point (°C)	10 [Closed cup]
Flammability (solid, gas)	Not applicable
Flammable Limits (Lower) (%v/v)	2.1
Flammable Limits (Upper) (%v/v)	12.5
Flammable Limits	Methyl methacrylate
Vapor pressure (Pascal)	3600 at 20°C
Vapor Density (Air=1)	3.5
Solubility (Water)	Slightly soluble 1.6% at 20°C
Solubility (Other)	Miscible with most organic solvents
Partition Coefficient (n-Octanol/water)	1.38
Auto Ignition Temperature (°C)	421
Viscosity (mPa. s)	Not available
Explosive properties	Not applicable
Oxidizing properties	Not applicable
Density (g/ml)	0.949 at 15.5°C

10. STABILITY AND REACTIVITY

10.1 Reactivity

Will exothermically polymerize in the presence of initiators.

10.2 Chemical stability

Stable in the presence of inhibitor.

10.3 Possibility of hazardous reactions

Susceptible to polymerization initiated by prolonged storage or the presence of catalyst.

10.4 Conditions to avoid

Heat and direct sunlight.

10.5 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/Cyclohexenol tautomer.

10.6 Hazardous decomposition products

Does not decompose up to auto-ignition temperature.

11. TOXICOLOGICAL INFORMATION

The following information is based on the principal component: methyl methacrylate

Acute toxicity	
Ingestion	Low oral toxicity, but ingestion may cause irritation of the gastrointestinal tract.
Inhalation	May cause drowsiness and dizziness.
Skin corrosion/irritation	Causes skin irritation. Repeated and/or prolonged contact may cause dermatitis.
Serious eye damage/irritation	High vapor concentration will cause irritation.
Sensitization	Methyl methacrylate, Ethylene glycol dimethacrylate : May cause an allergic skin reaction.
Germ cell mutagenicity	Salmonella typhimurium (TA1535, 1537, 97, 98, 100) negative (OECD 471)
Carcinogenicity	No evidence of carcinogenicity. (OECD 451)
Reproductive toxicity	NOAEC (mouse) = 9000 ppm NOAEC (rat) > 2028 ppm
STOT - single exposure	May cause respiratory irritation.
STOT - repeated exposure	None.
Aspiration hazard	Not an aspiration hazard.
Chronic exposure	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 400ppm). 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 foeto toxic nor teratogenic effects in the presence of maternal toxicity. NOEL (oral) (rat) (104 weeks) >2000 ppm NOAEC (inhalation) (rat) (104 weeks) 100 ppm (OECD 453) NOAEC (inhalation) (mouse) (14 weeks) 1000 ppm (OECD 412)

12. ECOLOGICAL INFORMATION

The following information is based on the principal component: methyl methacrylate

12.1 Toxicity

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) (96 hour) 170 mg/l

NOEC (zebra fish) (35 days) (flow through) 8.4 mg/l

12.2 Persistence and degradability

Readily biodegradable.

Chemical Oxygen Demand (COD): 88% (28 days)

Inherent Biodegradation:

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

12.3 Bioaccumulative potential

The product has low potential for bioaccumulation.

12.4 Mobility in soil

The product is predicted to have high mobility in soil.

12.5 Results of PBT and vPvB assessment

Not classified as PBT or vPvB.

12.6 Other adverse effects

None known.

13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment 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. The packaging should be disposed of with due care, ensuring that the package is completely emptied. In some cases the packaging itself may be regarded as a waste requiring special treatment. If in any doubt please seek specialist advice from a competent authority.

14. TRANSPORTATION CONSIDERATIONS

14.1 UN number

1247

14.2 UN Proper Shipping Name

METHYL METHACRYLATE MONOMER, STABILIZED, MIXTURE

14.3 Transport hazard class(es)

Class	3
IMDG Class	3
IMDG EMS	F-E, S-D
IATA	3
ADR Classification Code	F1
ADR HIN	339
ADR Transport Category	2
Tunnel Restriction Code	D/E
RID	3

14.4 Packing group

II

14.5 Environmental hazards

Environmentally hazardous substance
Marine Pollutant

No.
Not classified as a Marine Pollutant.

14.6 Special precautions for user

No special requirements.

14.7 Transport in bulk according to Annex II of MARPOL and the IBC Code

Not applicable.

15. REGULATORY INFORMATION

WHMIS 2015

Canadian Hazardous Products Regulations (SORS2015-17)

Canadian Hazardous Products Act (R.S.C., 1985, c. H-3)

Hazardous Products Information Regulation (Quebec S-2.1, r. 8.1)

16. OTHER INFORMATION

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