

# precision.resin (liquid)

## EN MATERIAL SAFETY DATA SHEET

### 1. IDENTIFICATION OF THE PREPARATION AND OF THE COMPANY:

1.1 **Product:** precision.resin (liquid)

1.2 **Use of the preparation:** Monomer for dental prosthesis.

1.3 **Company identification:** Major Prodotti Dentari Spa - **Contact:** Mr. Filippo Berrutti (tel. +390116400211)

- **Address:** via Einaudi 23, 10024 Moncalieri ITALY.

1.4 **Emergency telephone:** +390266101029 Centro Antiveleni Ospedale Niguarda (Cà Granda Piazza Ospedale Maggiore 3 - 20162 Milano). Always contact the nearest hospital or medical center.

### 2. COMPOSITION/INFORMATION ON INGREDIENTS:

2.1 Composition/Concentration:	%	Classification	EC	INDEX	CAS
Methylmethacrylate	>90	F, Xi - R11; R37/38; R43	2012971	607035006	80626
1,4Butanediol dimethacrylate	<3	Xn-R20/21/22;R36/37/38	2182181	-	2082817
Benzophenone-3	<2	Xi - R36/37/38; R41	2050315	-	131577
N,N-Dimethyl-p-toluidine	<1	Xi - R36/37	2028054	-	99978

### 2.2 Exposure Limits:

	USA-ACGIH TLV	USA-OSHA PEL	DE
Methyl methacrylate	TWA:410mg/m <sup>3</sup> (100ppm)	8hTWA:410mg/m <sup>3</sup> (100ppm)	8hTWA:210mg/m <sup>3</sup> (50ppm)

### 3. HAZARDS IDENTIFICATION:

3.1 **Major Hazard:** Highly flammable product, which vapours, mixed with air, can explode. Product irritating to eyes, respiratory system and skin. In some subjects may cause sensitization by skin contact.

#### 4. FIRST AID MEASURES:

It is suggested to consult a doctor showing this material safety data sheet.

4.1 **Inhalation:** Remove to fresh air. If not breathing give artificial respiration. If breathing is difficult, give oxygen.

4.2 **Ingestion:** Wash out mouth with water provided if person is conscious. Do not induce vomit. Immediately consult a doctor.

4.3 **Eye contact:** Wash eyes with copious amount of water. Assure adequate flushing of the eyes (15' at least) by separating the eyelids with fingers.

4.4 **Skin contact:** Remove contaminated cloths. Wash skin with water for 15' at least.

#### 5. FIRE-FIGHTING MEASURES:

5.1 **Suitable extinguishing media:** Chemical foam, CO<sub>2</sub>, dry powders.

5.2 **Extinguishing media not to be used:** Do not use water, it may spread fire.

5.3 **General precautions:** Product heated above the flash point generates flammable vapours, that can explode or burn in contact with air. Vapours could reach an ignition source and start burning. In case of fire, to avoid explosion risks, keep containers cool using water and approach fire from sheltered positions.

5.4 **Extraordinary hazards:** Excessive heating may cause violent polymerization, rapidly releasing energy that can compromise containers integrity.

#### 6. ACCIDENTAL RELEASE MEASURES:

6.1 **Personal precautions:** Switch off engines, lights or any electrical apparatus nearby. Remove any ignition source. Do not smoke. Pay attention to vapours concentration indoors; ventilate interested areas. Eventually wear personal protective equipment (see also following § 8).

6.2 **Environmental precautions:** Do not empty into drains. Avoid disposal to the environment.

6.3 **Methods for cleaning up:** Dry released material using inert absorbents such as sand or sawdust. Collect and dispose into appropriate containers; provide appropriate containers labelling and set for final disposal. Wash and ventilate contaminated areas.

#### 7. HANDLING AND STORAGE:

7.1 **Handling:** Close containers immediately after use. Avoid vapours generation. Do not breathe in vapours. Provide working areas to be well-ventilated. Wash hands after handling if protective gloves are not used. Do not smoke while manipulating; take precautionary measures against fires. If necessary adopt individual protection equipment.

7.2 **Storage:** Keep away from light, heat and ignition sources, in a cool and dry place. Pay attention not to contaminate or heat the product: this can lead to a progressive and instable polymerization. To substitute containers, adopt only glass bottle with polyethylene (PE) cap. Temperature, humidity and pressure recommended for storage: keep at a temperature below 30°C.

7.3 **Shelf life:** Expiry date is indicated on every package.

#### 8. EXPOSURE CONTROLS/PERSONAL PROTECTION:

The following evaluation is intended for Dental Laboratories use.

8.1 **Exposure Limit values:** USA (TWA - 8h TWA): 410 mg/m<sup>3</sup> (100 ppm); DE (8h TWA): 210 mg/m<sup>3</sup> (50 ppm)

8.2 **Exposure controls:** Do not breathe in; avoid eyes and hands contact.

8.2.1 **Occupational exposure controls:** Work in well-ventilated areas; if possible adopt local mechanical subctions to reduce vapours diffusion. In normal using conditions, adopting general precautions (see below), it is difficult to reach a high concentration level of dangerous vapours. Evaluate the possibility of wearing personal protective equipment (gloves) at least to protect hands form direct contact.

8.2.1.1 **Respiratory protection:** If vapours concentration reaches 50ppm, wear an organic vapour respirator (adopting an "A" type filter). Then proceed to local ventilation.

8.2.1.2 **Hand protection:** It is suggested to wear protective rubber gloves, if high quantity is handled.

8.2.1.3 **Eye protection:** It is suggested, in any case, to adopt generic goggles. If high quantity are handled, adopt safety goggles and/or a safety facial shield.

8.2.1.4 **Skin protection:** Generic working clothes are suitable for a normal Laboratory activity. If high quantity are handled, adopt chemical-resistant cloths.

Sanitary recommended measures: Wash hands immediately after use.

Recommended first-aid measures: It is suggested to keep an eye-bath near the working area.

#### 9. PHYSICAL AND CHEMICAL PROPERTIES:

•Form: Liquid	•Dynamic viscosity coefficient: 0,6mPa*s (at 20°C)	•Vapour density: 3,5 at 16°C
•Color: transparent	•Lower explosion limit (vapours): 2,12%	•Vapour pressure: 40mbar at 20°C
•Odour: Intense, acry	•Upper explosion limit (vapours): 12,5%	•Density (at 20°C): 0,95
•pH: not applicable	•Volatle percentage: >90 (W/W%)	•Water solubility: 16 g/l (at 20°C)
•Boiling point: 100,3°C	•Evaporation rate: 3,0 (BuAc=1)	•Liposolubility: not stated
•Melting point: -48°C	•Static discharges sensibility: Yes	•Water reactivity: not reactive
•Flash point: 9°C		•Impact sensibility: No
•Autoflammability: 435°C		•Qualitative/solubility: soluble by most organic solvents.
•n-Octanol/water ripartition coefficient: log POW 0,7		

#### 10. STABILITY AND REACTIVITY:

Even if stabilized with Topanol A, material remains highly unstable and flammable.

10.1 **Conditions to avoid:** Avoid product contamination and contact with flames, sparks and any heat or ignition source. Heat sources may generate undesirable polymerization of material, causing containers implosion. Keep material away from heat and light (UV)sources.

10.2 **Materials to avoid:** Oxidizing agents, peroxides, acids, bases, reducing agents, amines, halogens. In case of contact with peroxides or reducing agents, material can polymerize under heat effect with esotermic reaction. See also § 5.

10.3 **Hazardous decomposition products:** None during normal use. None in case of thermal decomposition. Carbon monoxide if burst.

Other hazards: Product is a good solvent and may corrode enamels, rubbers or plastics.

#### 11. TOXICOLOGICAL INFORMATION:

(referred to the ingredient Methyl methacrylate)

**Acute effects:** The material may result quite toxic if absorbed by skin or eye contact and by vapours inhalation. The material may irritate or cause alterations (corrosion) to tissues of mucous membranes, upper respiratory tract, eyes and skin.

**Exposure effects:** Skin irritation and burning; eyes lacrimation and burning; coughing, laryngitis, respiratory problems, nausea, headache or vomiting.

**Chronic effects:** The material may cause allergic respiratory and skin reactions. Even if, considering the low quantity of material and the consequent exposure during a normal Laboratory activity, skin allergies manifestations are rare. Studies on generated vapours have evidenced not-cumulative exposure effects, even if high concentration level may be irritating. In some subjects the material may be sensitizing by skin contact (about one third of the considered subjects show an irritation only, while the 20% evidences sensitization symptoms).

**Symptoms and effects of prolonged exposure:** These symptoms are mostly behavioral: narcotic effects, somnolence, anorexia, generic depression and, in some case, excitement. The product is supposed to be responsible for permanent alterations to the central nervous system and brain, to eyes and to liver and kidneys functionality. Excessive inhalation may cause spasms, dispnea, coughing, inflammation and edema of the larynx and bronchi.

**Carcinogenicity:** IARC Group 3 "Human inadequate evidence". NTP (inhalation) "No evidence: mouse, rat".

#### 12. ECOLOGICAL INFORMATION:

The material is quite toxic for the environment and hazardous for waters. The material may biodegrade to a moderate extent and it is expected to quickly evaporate. Do not empty into drains or to the environment. The material directly disposed into drains may cause explosion hazards.

#### 13. DISPOSAL CONSIDERATIONS:

This material is a special waste. Do not dispose as a urban waste and do not empty into drains. Collect and dispose into appropriate containers and set for final disposal.

**Disposal procedure:** Burn in a chemical incinerator. Exert extra care (using inhibitors) in igniting as the material is highly flammable.

**European Waste Inventory (2000/532/EC):** 180106 Wastes from maternity, diagnosis and prevention of the illness in the humans - Waste chemicals and medicines.

**Caution!** for using and disposing, observe all federal, state and local environmental regulations.

#### 14. TRANSPORT INFORMATION:

Transport in the original closed containers, at a temperature below 30°C, away from light or heat sources. Keep away from ignition or heat sources. Take precautionary measures against static discharges.

#### Forwarding codes:

Forwarding name: Methyl methacrylate, monomer inhibited solution

<b>By Land:</b>	•UN#: 1247	•GGVE/GGVS#: 3/3b	<b>By Sea:</b>	•UN#: 1247	•PACK GROUP: II
	•RID/ADR#: 3 F 1	•DANGER#: 339		•EmS: T 3-07	•MFAG: 330
	•MATERIAL#: 1247	•PACK GROUP: II		•IMDG/GGVS: Class 3.2	
	•GGVS/ADR classified under Rn 2300(6)		<b>By Air:</b>	•UN-/ID-#: 1247	•PACK GROUP: II
	•GGVE/RID classified under Rn 0300(6)			•ICAO/IATA: Class 3	

**Inland** •ADNR#: 3 (III) / la

**navigation:** •ADNR CATEG: K 1 n

**By Mail:** Prohibited

#### 15. REGULATORY INFORMATION:

**Labelling:** for dangerous substances or preparation. For professional use only.

• Methyl methacrylate



**F**  
Highly flammable

**Risk phrases (R):**  
R11:Highly flammable.  
R37/38:Irritating to respiratory system and skin.  
R43:May cause sensitization by skin contact.



**Xi**  
Irritant

**Safety phrases (S):**  
S2: Keep out of the reach of children.  
S24: Avoid contact with skin.  
S37: Wear suitable gloves.  
S46: If swallowed, seek medical advice immediately and show this container or label.

**Caution!** observe all federal, state and local regulations.

#### 16. OTHER INFORMATION:

This Material Safety Data Sheet has been compiled according to EEC Directives 91/155 and 93/112. This Information is believed to be correct according to the sources available. Please contact the manufacturer for any other information on products safety. In any case, the manufacturer does not grant any explicit or implicit warranty or liability on using the informations given above. Users must control the conformity of these informations for any specific use. This information does not represent a definition of working place hazards falling under local Laws or Directives. All local, federal and state Laws and Directives must be observed to use and dispose the above described product.

**Update: 02-2004**