MATERIAL SAFETY DATA SHEET

SECTION 1 - IDENTIFICATION

PRODUCT (TRADE) NAME: X60 Liquid: Cold Curing Rapid Adhesive Powder

CHEMICAL FAMILY: Polymethylacrylate

SUPPLIER: OMEGA ENGINEERING INC.
PO BOX 4047
STAMFORD, CT 06907

DATE PREPARED: 5/3/88
SUPERSEDES: 9/84

TELEPHONE: (203) 359-1880

SECTION 1 - CHEMICAL SPECIFICATIONS

1.1 Chemical characterization: Polymethylacrylate-containing mixture
1.2 Form: powder
1.3 Color: white

SECTION 2 - PHYSICAL AND TECHNICAL SAFETY DATA

No data

SECTION 3 - TRANSPORTATION

No data

SECTION 4 - INSTRUCTIONS

No data

SECTION 5 - PROTECTIVE MEASURES FOR STORAGE AND HANDLING

5.1 Technical safety measures: Store in cool and dry location.

5.2 Personal safety equipment: Eye protection: Safety glasses
Hand Protection: Rubber gloves
Respiratory: Coarse dust mask

5.3 Work hygiene: Wash hands after work.
SECTION 6 - WASTE DISPOSAL

6.1 Waste removal: Product must be disposed of at a specific waste disposal facility under the observation of regulations of local authorities.

6.2 Type of waste: Glue and adhesive waste

6.3 Waste designation: Glues: hardened or past shelf life

6.4 Waste Code #: 5 5 9 0 1

SECTION 7 - MEASURES FOR ACCIDENTS AND FIRES

7.1 After leakage/spills: Sweep up

7.2 First aid:
   Eye contact: Rinse well with water.
   Skin contact: Wash off with water.

7.3 Medical help: Medical help is necessary if the powder is swallowed.

SECTION 8 - TOXICOLOGY DATA

No data

SECTION 9 - ECOLOGICAL DATA

No data
SECTION 1 - IDENTIFICATION

PRODUCT (TRADE) NAME: X60 Liquid: Cold Curing Rapid Adhesive Liquid

CHEMICAL FAMILY: Activator-containing mixture of methylmethacrylate and 2-Hydroxy-ethylmethacrylate

SUPPLIER: OMEGA ENGINEERING INC.
PO BOX 4047
STAMFORD, CT 06907

DATE PREPARED: 5/3/88
SUPERSEDES: 9/84

TELEPHONE: (203) 359-1660

SHIPPING NAME (UN NUMBER PER TRANSPORTATION AUTHORITY): also see section 3
DOT: UN 1993 (Flammable Liquid N.O.S.) Hazard Name: Methacrylic Ester
IATA: UN 1866 (Resin Solution)

SECTION 1 - CHEMICAL SPECIFICATIONS

1.1 Chemical characterization: Activator-containing mixture of methylmethacrylate and 2-Hydroxy-ethylmethacrylate
1.2 Form: liquid
1.3 Color: pale yellow to pink
1.4 Odor: Ester-like, stingingly unpleasant

SECTION 2 - PHYSICAL AND TECHNICAL SAFETY DATA

2.1 Change of State: Boiling point: 101°C
Melting point: -48°C

2.2 Density: (20°C) 0.94 g/cm³

2.3 Vapor Pressure: (20°C) approximately 40 mbar

2.4 Viscosity: (20°C) approximately 0.6 mPa.s
(Brookfield, Sp.A / 60 Upm)

2.5 Solubility: In Water: 1.59 g/l
In Acetone: soluble

2.6 pH Value: (20°C) approx. 5 (at 100 g/l water)

2.7 Flash Point: 15°C (DIN 51 755)

2.8 Fire Point: 430°C

2.9 Explosion Limit: Lower: 2.1 Vol% (Methylmethacrylate)
Upper: 12.5 Vol% (vol%)

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SECTION 2 - PHYSICAL AND TECHNICAL SAFETY DATA (CONT'D)

2.10 Thermal Decomposition: In accordance with defined use, none.
2.11 Dangerous Decomposition Products: In accordance with defined use, none.
2.12 Dangerous Reactions: In the presence of radical-forming or reducing substances and/or heavy metals and under the evolution of heat, polymerization is possible.
2.13 CAS - No.: 80-62-6 (Methylmethacrylate)
2.14 EG - No.: 607-035-00-6 (Methylmethacrylate)
2.15 Further Information: Miscible with organic solvents

SECTION 3 - TRANSPORTATION

3.1 UN - No.: 1993
3.2 GGVE / GGVS: Class 3, Number 3b
3.3 GGVS & IDMG Code: Class 3.2
3.4 ICAO / IATA - DGR: Class 3
3.5 RID / ADR: Class 3, Number 3b
3.6 ADNR: Class 3 (IIla), Number 1a

SECTION 4 - INSTRUCTIONS

The product is identified under the regulations concerning dangerous substances (Dangerous substances Regulations - GefStoffV; BGBI. (Code of Civil Law) I, p. 1470), dated August 26, 1986.

4.1 Identification: Under GefStoffV supplement I, No. 2.2
Contains: N,N-Dimethyl-p-toluidine
Xn (slightly poisonous)
F (easily inflammable)

4.2 R - Sediments: R 11 Easily flammable
(Danger Indications) R 20/21/22 Health danger upon inhalation, swallowing, and contact with the skin.
R 36/37/38 Irritates eyes, respiratory tract, and skin.
R 43 Sensitization through skin contact is possible.

4.3 S - Sediments: S 9 Keep container in a well-ventilated place.
(Safety Suggestions) S 16 Keep away from sources of ignition. Do not smoke.
S 29 Prevent passage into sewer system.
S 33 Take steps against electrostatic charge.

4.4 VbF: Danger Class A 1

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SECTION 4 - INSTRUCTIONS (CONT'D)

4.5 MAK - Value:
(Maximum Concentration at the Workplace)

100 ppm/410 mg/m³ (Methylmethacrylate)

SECTION 5 - PROTECTIVE MEASURES FOR STORAGE AND HANDLING

5.1 Technical Safety Measures:
Fill container only to 80% since the oxygen in the air is necessary for stabilization.
Keep container tightly closed to prevent vaporization of monomers.
Do not store at over 30°C.
Keep from sources of ignition.
Protect from photoelectrical action.
Provide for good ventilation and/or exhaust-device at the workplace.

5.2 Personal Safety Equipment:
Respiratory protection: In the event of an accident, use mask with filter-apparatus, filertype A.

Eye protection: Safety goggles

Hand protection: Rubber gloves

5.3 Work Hygiene:
Separate storage of work clothing.
Take off soiled or wet clothing.
Customary occupational hygienic practices are to be followed.

5.4 Fire and Explosion Safety
Keep from sources of ignition.
Take steps against electrostatic charge.
Upon fire, cool endangered containers.

SECTION 6 - WASTE DISPOSAL

6.1 Waste Removal:
Product must be disposed of at a specific waste disposal facility under observation of the regulations of local authorities.

6.2 Type of Waste:
Glue and Adhesive waste

6.3 Waste Designation:
Glues: hardened or past shelf-life.

6.4 Waste Code #:
55901
SECTION 7 - MEASURES FOR ACCIDENTS AND FIRES

7.1 After leakage/spills: Prevent passage into sewer system.

Larger quantities: Remove by mechanical means.
Smaller amounts: Pick up with fluid-binding materials (e.g. Sand, Kieselgur (diatomaceous earth), Saw-dust, or a universal-binder (such as Speedy-dry), etc.
The thus-removed substances are to be stored in separate, closed containers and disposed of as prescribed. Care is to be taken for sufficient room-ventilation or exhausting.

7.2 Extinguishing material: Waterspray, foam carbon-dioxide, Halon, powder-type extinguisher.

DO NOT USE: Direct stream of water

7.3 First aid:

Eye contact: Immediately rinse with running water for approx. 15 minutes with eyelid open.

Skin contact: Immediately rinse affected skin with large quantity of water, followed by ample application of Polyethylene glycol 400 (e.g. Lutrol).

For continuing irritation, a dermatologist is to be consulted.

Other: Saturated items of clothing are to be removed immediately.

7.4 Medical Help

Medical help is necessary with symptoms which can obviously be traced back to a strong reaction of the product on the skin of inhalation of its vapors.

7.5 Further Information: None

7.6 Emergency Response Telephone Numbers: (800) 255-3924 (813) 979-0626

SECTION 8 - TOXICOLOGICAL DATA

8.1 Toxicity Data:

Methylmethacrylate
LD 50 (oral, rat): 7.872 mg/kg
LD 50 (oral, mouse): 5.204 mg/kg

2-Hydroxyethylmethacrylate
LD 50 (oral, rat): 5.560 mg/kg
LD 50 (oral, mouse): 5.588 mg/kg

N,N-Dimethyl-p-toluidine
LD 50 (oral rat): 1.100 mg/kg

8.2 Skin Sensitivity Test on Rabbits:

Duration of Exposure 24 hours

Methylmethacrylate
no irritation

2-Hydroxyethylmethacrylate
slight irritant

N,N-Dimethyl-p-toluidine
mild irritant
SECTION 8 - TOXICOLOGY DATA (CONT'D)

8.3 Eye Sensitivity Test on Rabbits:  
- Methylmethacrylate  
  - no irritation  
- 2-Hydroxyethylmethacrylate  
  - Strong irritant

8.4 Other:  
- The activator contained in a quantity of about 1.5% is poisonous in accordance with Dangerous Materials Regulations (N,N-Dimethyl-p-toluidine)  
- The other monomers contained in the product are less toxic according to the acute toxicity data.  
- With prolonged and/or frequent exposure, skin and eye irritations are possible.

SECTION 9 - ECOLOGICAL DATA

9.1 Danger to Ground Water Supply:  
- The methylmethacrylate contained in the product is classified in the catalog of water-endangering materials with the identification number 154 in the water-endangering Class WGK 1 (given in BMI of March 1, 1985 - U III 6 523 074/3-).

9.2 Other:  
- Values for acute toxicity for:  
  - Mammals: 1  
  - Fish: 3.5  
  - Bacteria: 4.0  
  - (Methylmethacrylate)

SECTION 10 - FURTHER INDICATIONS

10.1 Stability:  
- The adhesive is delivered in stable form.

10.2 Storage Time:  
- After substantially exceeding the allowable storage time and/or storage temperature, and upon exposure to heat, the adhesive can polymerize.

10.3 Other:  
- The information given is based on present knowledge. It serves the description of the product and does not guarantee the characteristics.

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