



S.E.A.  
**OLYMPUS**  
Marketing, Inc.

www.olympus.com.ph

**Poly Klear**  
FIBERGLASS + RESIN

## MATERIAL SAFETY DATA SHEET

### POLYKLEAR R99-500 RESIN-GP CLEAR CAST

#### Section 1: Product Identification

Product Name : POLYKLEAR R99-500 RESIN-GP CLEAR CAST  
Grade : Orthophthalic Laminating Resin  
DOT Shipping Name : Resin solution  
DOT Hazard Class : Flammable Liquid

#### Section 2: Hazards Identification

##### GHS Classification:

FLAMMABLE LIQUIDS, Category 3  
ACUTE TOXICITY - INHALATION, Category 4  
SKIN CORROSION/IRRITATION, Category 2  
SPECIFIC TARGET ORGAN SYSTEMIC TOXICITY (SINGLE EXPOSURE), Category 3  
Respiratory tract irritation  
  
SERIOUS EYE DAMAGE/IRRITATION, Category 2  
ASPIRATION HAZARD, Category 1  
SPECIFIC TARGET ORGAN SYSTEMIC TOXICITY (REPEATED EXPOSURE),  
Category 1  
Auditory system and Central nervous system (CNS)  
  
AQUATIC TOXICITY (ACUTE), Category 2

##### GHS label elements:

Symbol(s)



#### LUZON:

REGIONAL OFFICE  
TAGUIG  
1st Avenue, Sta. Maria Industrial Subd,  
Bagumbayan, Taguig City  
Tel.#: (02) 506-8519 ; 837-0710  
837-0708  
Fax #: (02) 519-1552 ; 553-2551

#### VISAYAS:

HEADQUARTERS  
CEBU  
2F SEA Olympus Building, AC Cortes Ave.  
Trunkline #: (032) 421-7777  
Tel.#: (032) 346-7137 ; 421-7800 to 06  
421-7817 to 18 ; 421-7823  
Fax #: (032) 421-7789 ; 346-1817

#### MINDANAO:

REGIONAL OFFICE  
DAVAO  
Unit A16 J.King Warehouse Complex  
Km.3 Maa Road, Davao City 8000  
Telefax #: (082) 244-1206 ; 302-2711

✉ inquiry@olympus.com.ph



S.E.A.

**OLYMPUS**  
Marketing, Inc.

www.olympus.com.ph

Signal words

GHS Hazard

Statements

: Danger

: PHYSICAL HAZARDS

: H226: Flammable liquid and vapor.

: HEALTH HAZARDS:

: H304: May be fatal if swallowed and enters airways.

: H332: Harmful if inhaled.

: H315: Causes skin irritation.

: H319: Causes serious eye irritation.

: H355: May cause respiratory irritation.

: H372: Causes damage to organs through prolonged or repeated exposure

: ENVIRONMENT HAZARDS:

: H401: Toxic to aquatic life.

GHS Precautionary statements:

Prevention

P210: Keep away from heat/sparks/open flames/hot surfaces. – No smoking.

P233: Keep container tightly closed.

P243: Take precautionary measures against static discharged.

P260: Do not breathe dust/fume/gas/mist/vapours/spray.

P264: Wash hands thoroughly after handling.

P271: Use only outdoors or in a well-ventilated area.

P273: Avoid release to the environment.

P280: Wear protective gloves/protective clothing/eye protection/face protection

P304+P340: IF INHALED: Remove to fresh air and keep at rest in a position comfortable for breathing.

P303+P361+P353: IF ON SKIN (or hair): Remove/take off immediately all contaminated clothing. Rinse skin with water/shower.

P332+P313: If skin irritation occurs: Get medical advice/attention.

P305+P351+P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P337+P313: If eye irritation persist: Get medical advice/attention.

P301+P330+P331: IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.

Response

#### LUZON:

REGIONAL OFFICE  
TAGUIG  
1st Avenue, Sta. Maria Industrial Subd,  
Bagumbayan, Taguig City  
Tel.#: (02) 506-8519 ; 837-0710  
837-0708  
Fax #: (02) 519-1552 ; 553-2551

#### VISAYAS:

HEADQUARTERS  
CEBU  
2F SEA Olympus Building, AC Cortes Ave.  
Trunkline #: (032) 421-7777  
Tel.#: (032) 346-7137 ; 421-7800 to 06  
421-7817 to 18 ; 421-7823  
Fax #: (032) 421-7789 ; 346-1817

#### MINDANAO:

REGIONAL OFFICE  
DAVAO  
Unit A16 J.King Warehouse Complex  
Km.3 Maa Road, Davao City 8000  
Telefax #: (082) 244-1206 ; 302-2711

✉ inquiry@olympus.com.ph

**Poly Klear**  
FIBERGLASS + RESIN

**Poly Klear**  
FIBERGLASS + RESIN

**Poly Klear**  
FIBERGLASS + RESIN

**Poly Klear**  
FIBERGLASS + RESIN

**Poly Klear**  
FIBERGLASS + RESIN

**Poly Klear**  
FIBERGLASS + RESIN

**Poly Klear**  
FIBERGLASS + RESIN

**Poly Klear**  
FIBERGLASS + RESIN

**Poly Klear**  
FIBERGLASS + RESIN

**Poly Klear**  
FIBERGLASS + RESIN

**Poly Klear**  
FIBERGLASS + RESIN

**Poly Klear**  
FIBERGLASS + RESIN

**Poly Klear**  
FIBERGLASS + RESIN



S.E.A.

**OLYMPUS**  
Marketing, Inc.

www.olympus.com.ph

**Poly Klear**  
FIBERGLASS + RESIN**Storage**

P370+P378: In case of fire: Use appropriate media for extinction.

P403+P233: Store in a well-ventilated place. Keep container tightly closed.

P235: Keep cool.

**Disposal**

P501: Dispose of contents and container to appropriate waste site or reclaimer in accordance with local and national regulations.

**Other Hazards  
which do not result  
in classification**

Vapours are heavier than air. Vapours may travel across the ground and reach remote ignition sources causing a flashback fire danger.

May form flammable/explosive vapour-air mixture.

Maintain dissolved oxygen and inhibitor at proper levels to prevent runaway polymerisation.

Repeated exposure may cause skin dryness or cracking.

**Aggravated Medical**

Pre-existing medical conditions of the following organ(s) system(s) may be aggravated by exposure to this material:

Central nervous system (CNS), auditory system, and Respiratory system

**Section 3: Information on Hazardous Components**

| Component | CAS No.  | Percentage | Threshold Limit Value |
|-----------|----------|------------|-----------------------|
| Styrene   | 100-42-5 | 38%        | 50ppm                 |
| Polyester |          | 62%        |                       |

**Section 4: First Aid Measures**

**Ingestion:** Harmful if swallowed. Single dose oral toxicity is low. Do not induce vomiting. Aspiration of material into the lungs could cause pneumonitis which can be fatal. Give milk or water. Seek medical attention.

**Inhalation of Vapour:** Harmful. Effects may include headache, nausea, fatigue, central nervous system depression, pulmonary oedema. May be irritating to nose, throat and respiratory tract. Move victim to fresh air. Apply artificial respiration or give oxygen if necessary. Seek medical attention.

**Eye Contact:** Irritant. Flush with copious amounts of water - lift eyelids repeatedly. Seek medical attention.

**LUZON:**

REGIONAL OFFICE  
TAGUIG  
1st Avenue, Sta. Maria Industrial Subd,  
Bagumbayan, Taguig City  
Tel.#: (02) 506-8519 ; 837-0710  
837-0708  
Fax #: (02) 519-1552 ; 553-2551

**VISAYAS:**

HEADQUARTERS  
CEBU  
2F SEA Olympus Building, AC Cortes Ave.  
Trunkline #: (032) 421-7777  
Tel.#: (032) 346-7137 ; 421-7800 to 06  
421-7817 to 18 ; 421-7823  
Fax #: (032) 421-7789 ; 346-1817

**MINDANAO:**

REGIONAL OFFICE  
DAVAO  
Unit A16 J.King Warehouse Complex  
Km.3 Maa Road, Davao City 8000  
Telefax #: (082) 244-1206 ; 302-2711

✉ inquiry@olympus.com.ph



S.E.A.

**OLYMPUS**  
*Marketing, Inc.*

www.olympus.com.ph

**Poly Klear**  
FIBERGLASS + RESIN

**Skin Contact:** Irritant. Wash thoroughly with soap and water. Remove contaminated clothing and launder before re-use. Seek medical advice if irritation persists. Advice to Doctor: Treat symptomatically.

### Section 5: Firefighting Measures

Flammable Liquid: 31°C

Flammable Limits: LEL 1.1% UEL 6.1%

Flash Point: 31 °C

Hazchem Code: 3[Y]

(Setaflash)

**Extinguishing Media:** Foam, Carbon Dioxide, Dry Powder, Water Fog

#### Unusual Fire and Explosion Hazards:

Styrene will polymerise at elevated temperatures. If this occurs in a closed container, there is a risk of violent rupture.

#### Special Firefighting Procedures:

Fight like a fuel-oil fire. Water used in fire-fighting should not be allowed to enter drainage system or contaminate soil.

### Section 6: Accidental Release Measures

#### Steps to be taken if the material is released or spilled:

Eliminate all sources of ignition (flames, hot surfaces, and electrical, static or frictional sparks). Ventilate area.

Dyke area of spill and pump material into drums for use or disposal. Absorb remainder on sand or perlite and place the saturated absorbent into closed containers for disposal.

Prevent contamination of storm-water drains.

Waste disposal method. Destroy by liquid incineration with off-gas scrubber.

Contaminated absorbent to be incinerated or deposited in secure landfill in accordance with appropriate regulations.

Liquid material mixed with peroxide initiators should be allowed to gel before disposal as solid waste in accordance with appropriate regulations.

### Section 7: Handling and Storage

- Avoid inhalation of vapour and contact with skin, eyes and clothing. Launder contaminated clothing before re-use.
- Wash hands thoroughly before eating.
- Ground (earth) all connections and containers when using above flash point.
- Store in a bonded area or approved flammable goods store away from direct heat (ideally below 27° C to prevent spoilage). Keep containers closed when not in use. Open drums slowly in case of internal pressure.

#### LUZON:

REGIONAL OFFICE  
TAGUIG

1st Avenue, Sta. Maria Industrial Subd,  
Bagumbayan, Taguig City  
Tel.#: (02) 506-8519 ; 837-0710  
837-0708  
Fax #: (02) 519-1552 ; 553-2551

#### VISAYAS:

HEADQUARTERS  
CEBU

2F SEA Olympus Building, AC Cortes Ave.  
Trunkline #: (032) 421-7777  
Tel.#: (032) 346-7137 ; 421-7800 to 06  
421-7817 to 18 ; 421-7823  
Fax #: (032) 421-7789 ; 346-1817

#### MINDANAO:

REGIONAL OFFICE  
DAVAO

Unit A16 J.King Warehouse Complex  
Km.3 Maa Road, Davao City 8000  
Telefax #: (082) 244-1206 ; 302-2711

✉ inquiry@olympus.com.ph





S.E.A.

**OLYMPUS**  
*Marketing, Inc.*

www.olympus.com.ph

**Poly Klear**  
FIBERGLASS + RESIN

- e) Isolate from all potential sources of ignition including flames and electrical sparks.
- f) Store separate from oxidizing materials, peroxides and metal salts.

### Section 8: Exposure Control/Personal Protection

Workplace Exposure Limit: Styrene 50ppm

Use general dilution or local exhaust ventilation to maintain vapour concentration below WES level. If concentrations exceed exposure limit use organic vapour canister mask or approved air-line mask.

Skin Protection: Wear overalls or other work clothing providing arm and leg cover. Use protective gloves (PVC).

Eye Protection: Safety goggles or splash mask.

### Section 9: Physical and Chemical Properties

|                                |  |
|--------------------------------|--|
| Physical State                 | : Liquid                                   |
| Appearance                     | : Clear, cloudy or coloured viscous liquid |
| Boiling Point (760mm HG)       | : 145 °C (Styrene)                         |
| Specific Gravity               | : 1.1 – 1.7                                |
| % Volatiles by Volume          | : 35.0%                                    |
| Solubility in H <sub>2</sub> O | : Insoluble                                |

|                           |                        |
|---------------------------|------------------------|
| Fire and Explosion hazard |                        |
| Flash Point               | : 31 °C                |
| Flammable Limits          | : LEL 1.1%<br>UEL 6.1% |

|  |               |
|--|---------------|
| Flammable limits of volatiles compound |               |
| Volatiles Styrene                      | : 25 – 55 w/w |

### Section 11: Toxicological Information

When used under properly controlled conditions, within workplace exposure limits and with adequate protective equipment, no adverse health effects are to be expected.

Acute effects of over exposure.

**If Swallowed:** Harmful by ingestion. Possible irritation of mucous membranes, nausea, vomiting and gastric disturbance. Possible depression of central nervous system. Aspiration into lungs could cause pneumonitis which may damage lungs or may be fatal.

**Eye Contact:** Mild to moderate irritation. Reddening may occur if exposure is prolonged.

#### LUZON:

REGIONAL OFFICE  
TAGUIG  
1st Avenue, Sta. Maria Industrial Subd,  
Bagumbayan, Taguig City  
Tel. #: (02) 506-8519 ; 837-0710  
837-0708  
Fax #: (02) 519-1552 ; 553-2551

#### VISAYAS:

HEADQUARTERS  
CEBU  
2F SEA Olympus Building, AC Cortes Ave.  
Trunkline #: (032) 421-7777  
Tel. #: (032) 346-7137 ; 421-7800 to 06  
421-7817 to 18 ; 421-7823  
Fax #: (032) 421-7789 ; 346-1817

#### MINDANAO:

REGIONAL OFFICE  
DAVAO  
Unit A16 J.King Warehouse Complex  
Km.3 Maa Road, Davao City 8000  
Telefax #: (082) 244-1206 ; 302-2711

✉ inquiry@olympus.com.ph



S.E.A.

**OLYMPUS**  
Marketing, Inc.

www.olympus.com.ph

**Poly Klear**  
FIBERGLASS + RESIN

**Skin Contact:** Irritant. May cause itching and redness of skin.

**Inhalation of Vapour:** May cause headaches, nausea, irritation of the respiratory tract and depression of the central nervous system.

Chronic effects of overexposure.

Mild dermatitis may result from prolonged or repeated skin contact. Styrene can be absorbed through the skin. Excessive exposure to the liquid material or vapour may affect the central nervous system, the liver, kidneys and respiratory system.

## Section 12: Ecological Information

Prevent these products from entering storm-water drains sewers or waterways.

Styrene is the major contaminant hazard in these formulations and it will undergo slow (but near complete) biodegradation in contact with soil. Styrene vapour degrades rapidly in the atmosphere.

Styrene floats on water and will vaporise and biodegrade.

## Section 13: Disposal Considerations

**Waste Disposal:** Small quantities of these products may be mixed with appropriate amounts of polymerisation initiators and allowed to solidify before disposal as solid waste.

Recover or recycle if possible.

This material and its container must be disposed of as hazardous waste.

Any disposal must comply with applicable local and national government regulations. Ensure that these materials do not enter drains, sewers or waterways.

## Section 14: Transport Information

|                       |                             |
|-----------------------|-----------------------------|
| Identification number | - UN 1866                   |
| Proper shipping name  | - Resin Solution, Flammable |
| Class / Division      | - 3                         |
| Packing group         | - 111                       |
| Hazchem Code          | - 3(Y)                      |
| Marine Pollutant      |                             |

## Section 15: Regulatory Information

These products are hazardous goods approved by the National Environmental Authority (Singapore) under the Group Standard for Additives, Intermediates, Process Chemicals, Raw Materials.

### LUZON:

REGIONAL OFFICE  
TAGUIG  
1st Avenue, Sta. Maria Industrial Subd,  
Bagumbayan, Taguig City  
Tel. #: (02) 506-8519 ; 837-0710  
837-0708  
Fax #: (02) 519-1552 ; 553-2551

### VISAYAS:

HEADQUARTERS  
CEBU  
2F SEA Olympus Building, AC Cortes Ave.  
Trunkline #: (032) 421-7777  
Tel. #: (032) 346-7137 ; 421-7800 to 06  
421-7817 to 18 ; 421-7823  
Fax #: (032) 421-7789 ; 346-1817

### MINDANAO:

REGIONAL OFFICE  
DAVAO  
Unit A16 J.King Warehouse Complex  
Km.3 Maa Road, Davao City 8000  
Telefax #: (082) 244-1206 ; 302-2711

✉ inquiry@olympus.com.ph



S.E.A.

**OLYMPUS**  
*Marketing, Inc.*

www.olympus.com.ph

**Poly Klear®**  
FIBERGLASS + RESIN

## Section 16: Other Information

None

SEA Olympus Marketing, Inc. reserves the right to change the information given herein without prior notice. We believe this information to be reliable, but do not guarantee its applicability to the user's process or assume liability for occurrence arising out of its use. The user, by accepting products described herein agrees to be responsible for thoroughly testing any application before committing to production. ©20

### LUZON:

REGIONAL OFFICE  
TAGUIG  
1st Avenue, Sta. Maria Industrial Subd,  
Bagumbayan, Taguig City  
Tel. #: (02) 506-8519 ; 837-0710  
837-0708  
Fax #: (02) 519-1552 ; 553-2551

### VISAYAS:

HEADQUARTERS  
CEBU  
2F SEA Olympus Building, AC Cortes Ave.  
Trunkline #: (032) 421-7777  
Tel. #: (032) 346-7137 ; 421-7800 to 06  
421-7817 to 18 ; 421-7823  
Fax #: (032) 421-7789 ; 346-1817

### MINDANAO:

REGIONAL OFFICE  
DAVAO  
Unit A16 J.King Warehouse Complex  
Km.3 Maa Road, Davao City 8000  
Telefax #: (082) 244-1206 ; 302-2711

✉ [inquiry@olympus.com.ph](mailto:inquiry@olympus.com.ph)



S.E.A.

**OLYMPUS**  
Marketing, Inc.

www.olympus.com.ph

**Poly Klear**  
FIBERGLASS + RESIN**Poly Klear**  
FIBERGLASS + RESIN**Poly Klear**  
FIBERGLASS + RESIN**Poly Klear**  
FIBERGLASS + RESIN

## TECHNICAL DATA SHEET

### POLYKLEAR R99-500 RESIN-GP CLEAR CAST

#### A. DESCRIPTION

##### POLYKLEAR R99-500 RESIN-GP CLEAR CAST

is a low peak exothermic unsaturated polyester resin of Methyl Methacrylate Monomer (MMA) type for making artificial marble. It is non-waxed and promoted. It exhibits good transparency, light color and high glossiness. This resin is most suitable for use in making high quality artificial marble, onyx marble, clear transparent casting as well as being used as adhesive for solid surfaces.

The viscosity of POLYKLEAR R99-500 is rather low in order to facilitate good wet out, fast bubble release and to accept high filler loading, thus assuring an easy processing. It is ideal for making a variety of casting objects such as flooring, bathroom bowls, table tops, bath units, artificial marble walls, R.T.M. and onyx marble.

Artificial marble made with this resin will have all the beauty of real marble, without the porosity and brittleness. It possesses excellent dimensional stability, good rigidity (scratch resistance), impact resistance, good detergent and mil chemical corrosion resistance.

#### B. SPECIFICATIONS

Liquid POLYKLEAR R99-500 CLEAR CAST polyester has the following characteristics:

|  |               |
|--|---------------|
| Appearance   | Clear         |
| Viscosity at 30°C (Brookfield LVT, spindle 3, 60rpm) | 3– 6 ps       |
| Gel Time at 30°C                                     | 4 – 7 minutes |
| Peak Exothermic Temperature                          | 110°C – 125°C |
| Stability in the Dark below 25°C                     | 6 months      |

Above gelation characteristics determined using 1% v/w of MEKP catalyst (Butanox M-50) on 20g of resin.

#### C. USAGE

POLYKLEAR R99-500 CLEAR CAST polyester laminating resin performs best when it is completely cured. To do so, a proper combination of catalyst and accelerator must be used at room temperature for a sufficient period of time. Generally, 1 percent of catalyst (BUTONOX M-50 MEKP) is used. Generally, 1 to 1.5 percent of catalyst together with 0.5

#### LUZON:

REGIONAL OFFICE  
TAGUIG  
1st Avenue, Sta. Maria Industrial Subd,  
Bagumbayan, Taguig City  
Tel.#: (02) 506-8519 ; 837-0710  
837-0708  
Fax #: (02) 519-1552 ; 553-2551

#### VISAYAS:

HEADQUARTERS  
CEBU  
2F SEA Olympus Building, AC Cortes Ave.  
Trunkline #: (032) 421-7777  
Tel.#: (032) 346-7137 ; 421-7800 to 06  
421-7817 to 18 ; 421-7823  
Fax #: (032) 421-7789 ; 346-1817

#### MINDANAO:

REGIONAL OFFICE  
DAVAO  
Unit A16 J.King Warehouse Complex  
Km.3 Maa Road, Davao City 8000  
Telefax #: (082) 244-1206 ; 302-2711

✉ inquiry@olympus.com.ph





S.E.A.

**OLYMPUS**  
*Marketing, Inc.*

www.olympus.com.ph

**Poly Klear**  
FIBERGLASS + RESIN

percent accelerator is needed.

Both quantities can be adjusted for a shorter or longer gel time by increasing or decreasing catalyst, accelerator, or both. As a rule, however, the amount of catalyst used should not exceed 2% and must not be less than 0.5% while that of accelerator should range between 0.4% and 1%. Be sure to measure accurately.

Accelerator must be completely mixed into the resin before catalyst is added in order to avoid a direct blending which due to a violent reaction may result in an **EXPLOSION**.

Since the viscosity increases as the storage period of resin lengthens, Styrene Monomer can be added to lower it to a desired level. However, excess of Styrene Monomer added will affect the quality of resin.

**However owing to difficulties in presenting information applicable to all situations, no warranty is expressed or implied and users are recommended to carry out their own tests to determine the applicability of the above information and the suitability of POLYKLEAR resin for their particular requirements.**

#### D. Storage

POLYKLEAR R99-500 CLEAR CAST polyester resin will remain stable if stored in the dark and at temperatures below 25°C. Their stability however deteriorates markedly at higher temperatures, especially when they are directly exposed to sunlight. Hence they should be kept in a cool, dark place. It is advisable to finish it within three months.

#### F. PACKING

POLYKLEAR R99-500 CLEAR CAST is packed in liters, gallons and tins.

---

SEA Olympus Marketing, Inc. reserves the right to change the information given herein without prior notice. We believe this information to be reliable, but do not guarantee its applicability to the user's process or assume liability for occurrence arising out of its use. The user, by accepting products described herein agrees to be responsible for thoroughly testing any application before committing to production. ©20

#### LUZON:

REGIONAL OFFICE  
TAGUIG  
1st Avenue, Sta. Maria Industrial Subd,  
Bagumbayan, Taguig City  
Tel. #: (02) 506-8519 ; 837-0710  
837-0708  
Fax #: (02) 519-1552 ; 553-2551

#### VISAYAS:

HEADQUARTERS  
CEBU  
2F SEA Olympus Building, AC Cortes Ave.  
Trunkline #: (032) 421-7777  
Tel. #: (032) 346-7137 ; 421-7800 to 06  
421-7817 to 18 ; 421-7823  
Fax #: (032) 421-7789 ; 346-1817

#### MINDANAO:

REGIONAL OFFICE  
DAVAO  
Unit A16 J. King Warehouse Complex  
Km. 3 Maa Road, Davao City 8000  
Telefax #: (082) 244-1206 ; 302-2711

✉ inquiry@olympus.com.ph