1 Identification

· Product identifier

· Trade name: OPTIGLAZE color (Shades: Blue, Clear, Grey, Ivory White, Lavender, Olive, Orange, Pink, Pink Orange, Red, Red Brown, White, and Yellow)

· Relevant identified uses of the substance or mixture and uses advised against
  Dental material
  The product is intended for professional use.
  To avoid risks for humans and environment obtain instructions.

· Application of the substance / the mixture
  Dental sealing material

· Details of the supplier of the safety data sheet

· Manufacturer/Supplier:
  GC America Inc.
  3737 W. 127th Street
  Alsip, IL 60803
  USA
  sds@gcamerica.com

· Information department: Regulatory Affairs

· Emergency telephone number:
  During normal opening times (Mon.-Fri. 8:00 AM-5:00 PM CST): +1 (708) 597-0900
  Transportation (CHEMTREC®) Emergency Telephone No. +1 (800) 424-9300

2 Hazard(s) identification

· Classification of the substance or mixture
  Flam. Liq. 2 H225 Highly flammable liquid and vapor.
  Skin Irrit. 2 H315 Causes skin irritation.
  Skin Sens. 1 H317 May cause an allergic skin reaction.
  STOT SE 3 H335 May cause respiratory irritation.

· Additional information:
  The information provided is in regards to the toxicity and hazard rating(s) of the individual component(s) in the formulation. The associated risk(s) depends on the route(s) of exposure. The hazard rating system is based entirely on the existence of the risk(s) and does not take into account the likelihood of reduced risk(s) through proper usage and handling.

· Label elements

· GHS label elements
  The product is classified and labeled according to the Globally Harmonized System (GHS).

· Hazard pictograms

  ![GHS02](images/GHS02.png)  ![GHS07](images/GHS07.png)

· Signal word Danger

· Hazard-determining components of labeling:
  methyl methacrylate (MMA)
titanium dioxide

- **Hazard statements**
  - Highly flammable liquid and vapor.
  - Causes skin irritation.
  - May cause an allergic skin reaction.
  - May cause respiratory irritation.

- **Precautionary statements**
  - Keep away from heat/sparks/open flames/hot surfaces. No smoking.
  - Wear protective gloves / eye protection / face protection.
  - Contaminated work clothing must not be allowed out of the workplace.
  - If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
  - Store locked up.
  - Dispose of contents/container in accordance with local/regional/national/international regulations.

- **Additional information:**
  - 34.3 % of the mixture consists of component(s) of unknown toxicity.

- **Classification system:**
  - **NFPA ratings (scale 0 - 4)**
    - Health = 1
    - Fire = 3
    - Reactivity = 0

  - **HMIS-ratings (scale 0 - 4)**
    - HEALTH
      - Health = *1
    - FIRE
      - Fire = 3
    - REACTIVITY
      - Reactivity = 0

- **Other hazards**
- **Results of PBT and vPvB assessment**
  - PBT: Not applicable.
  - vPvB: Not applicable.

### 3 Composition/information on ingredients

- **Chemical characterization:** Mixtures
- **Description:** Mixture of the substances listed below with nonhazardous additions.

- **Dangerous components:**
  - 80-62-6 methyl methacrylate (MMA) 50-70%
  - photoinitiator** 1-5%

- **Additional information:**
  - If a substance is marked with **, then substance is a trade secret. This is allowed under OSHA’s Hazard Communication Standard (HCS) as a trade secret and under GHS as Confidential Business Information (CBI).

### 4 First-aid measures

- **Description of first aid measures**
- **General information:**
  - Immediately remove any clothing soiled by the product.
Safety Data Sheet
acc. to OSHA HCS 29 CFR 1910.1200

Trade name: OPTIGLAZE color (Shades: Blue, Clear, Grey, Ivory White, Lavender, Olive, Orange, Pink, Pink Orange, Red, Red Brown, White, and Yellow)

If symptoms persist consult doctor.

· **After inhalation:**
  Supply fresh air; consult doctor in case of complaints.
  In case of unconsciousness place patient stably in side position for transportation.

· **After skin contact:**
  Immediately wash with water and soap and rinse thoroughly.
  Seek medical treatment.

· **After eye contact:**
  Rinse opened eye for several minutes under running water.
  If symptoms persist consult doctor.

· **After swallowing:**
  Rinse out mouth and then drink plenty of water.
  If symptoms persist consult doctor.

· **Information for doctor:**
  · Most important symptoms and effects, both acute and delayed: Allergic reactions
  · Indication of any immediate medical attention and special treatment needed
  No further relevant information available.

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**5 Fire-fighting measures**

· **Extinguishing media**
  · Suitable extinguishing agents: CO2, sand, extinguishing powder. Do not use water.

· **For safety reasons unsuitable extinguishing agents:** Water

· **Special hazards arising from the substance or mixture**
  Formation of toxic gases is possible during heating or in case of fire.

· **Advice for firefighters**
  · Protective equipment: Wear self-contained respiratory protective device.

· **Additional information**
  Dispose of fire debris and contaminated fire fighting water in accordance with official regulations.

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**6 Accidental release measures**

· **Personal precautions, protective equipment and emergency procedures**
  Remove persons from danger area.
  Keep away from ignition sources
  Avoid contact with the eyes and skin.
  Wear protective clothing.

· **Environmental precautions:**
  Do not allow product to reach sewage system or any water course.
  Inform respective authorities in case of seepage into water course or sewage system.
  Do not allow to penetrate the ground/soil.
  In case of seepage into the ground inform responsible authorities.

· **Methods and material for containment and cleaning up:**
  Ensure adequate ventilation.
  Absorb liquid components with liquid-binding material.
  Dispose of the collected material according to regulations.

· **Reference to other sections**
  See Section 7 for information on safe handling.
  See Section 8 for information on personal protection equipment.
7 Handling and storage

· Handling:
  · Precautions for safe handling
    Observe instructions for use.
    Ensure good ventilation/exhaustion at the workplace.
    Prevent formation of aerosols.
    Avoid contact with the eyes and skin.
    Open and handle receptacle with care.

· Information about protection against explosions and fires:
  · Keep ignition sources away - Do not smoke.
  · Protect against electrostatic charges.
  · Keep respiratory protective device available.
  · Do not spray on a naked flame or any incandescent material.

· Storage:
  · Requirements to be met by storerooms and receptacles:
    Store in a cool location.
    Store only in unopened original receptacles.

· Information about storage in one common storage facility:
  · Store away from foodstuffs.

· Further information about storage conditions:
  · Observe instructions for use / storage.
  · Keep receptacle tightly sealed.
  · Store in cool, dry conditions in well sealed receptacles.
  · Protect from heat and direct sunlight.
  · Store in a cool place.

· Specific end use(s) No further relevant information available.

8 Exposure controls/personal protection

· Additional information about design of technical systems: No further data; see item 7.

· Control parameters

<table>
<thead>
<tr>
<th>Components with limit values that require monitoring at the workplace:</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>80-62-6 methyl methacrylate (MMA)</strong></td>
</tr>
<tr>
<td>PEL</td>
</tr>
<tr>
<td>REL</td>
</tr>
<tr>
<td>TLV</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>(SEN) NIC-DSEN</td>
</tr>
</tbody>
</table>

· Additional information: The lists that were valid during the creation were used as basis.

· Exposure controls
  · Personal protective equipment:
  · General protective and hygienic measures:
    The usual precautionary measures for handling chemicals should be followed.
    Avoid contact with the eyes and skin.
    Wash hands before breaks and at the end of work.
Trade name: OPTIGLAZE color (Shades: Blue, Clear, Grey, Ivory White, Lavender, Olive, Orange, Pink, Pink Orange, Red, Red Brown, White, and Yellow)

Keep away from foodstuffs, beverages and feed. Immediately remove all soiled and contaminated clothing. Store protective clothing separately.

- **Breathing equipment**: Suitable respiratory protective device recommended.
- **Protection of hands**: Protective gloves

**Material of gloves**

The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. As the product is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.

- **Penetration time of glove material**
  The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.

- **Eye protection**: Safety glasses

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### Physical and chemical properties

- **Information on basic physical and chemical properties**
  - **General Information**
    - **Appearance**:
      - **Form**: Fluid
      - **Color**: According to product specification
      - **Odor**: Pungent
      - **Odor threshold**: Not determined.
    - **pH-value**: Not determined.
    - **Change in condition**
      - **Melting point/Melting range**: Undetermined.
      - **Boiling point/Boiling range**: 101 °C (214 °F)
    - **Flash point**: 10 °C (50 °F)
    - **Flammability (solid, gaseous)**: Not applicable.
    - **Ignition temperature**: Undetermined.
    - **Decomposition temperature**: Not determined.
    - **Auto igniting**: Product is not selfigniting.
    - **Danger of explosion**: Product is not explosive. However, formation of explosive air/vapor mixtures are possible.
  - **Explosion limits**
    - **Lower**: 2.1 Vol %
    - **Upper**: 12.5 Vol %
  - **Vapor pressure**: Not determined.
  - **Density at 20 °C (68 °F)**: 1.06 g/cm³ (8.846 lbs/gal)
  - **Relative density**: Not determined.
  - **Vapour density**: Not determined.
  - **Evaporation rate**: Not determined.
### Trade name: OPTIGLAZE color (Shades: Blue, Clear, Grey, Ivory White, Lavender, Olive, Orange, Pink, Pink Orange, Red, Red Brown, White, and Yellow)

- **Solubility in / Miscibility with Water:** Insoluble.
- **Partition coefficient (n-octanol/water):** Not determined.
- **Viscosity:**
  - Dynamic: Not determined.
  - Kinematic: Not determined.
- **Solvent content:**
  - Organic solvents: 0.0 %
- **Solids content:** 10.0 %
- **Other information:** No further relevant information available.

### 10 Stability and reactivity

- **Reactivity:** No further relevant information available.
- **Chemical stability:** Stable at ambient temperature.
- **Thermal decomposition / conditions to be avoided:**
  - No decomposition if used according to specifications.
- **Possibility of hazardous reactions:** No dangerous reactions known.
- **Conditions to avoid:** No further relevant information available.
- **Incompatible materials:** No further relevant information available.
- **Hazardous decomposition products:** No dangerous decomposition products known.

### 11 Toxicological information

- **Information on toxicological effects**
- **Acute toxicity:**
- **LD/LC50 values that are relevant for classification:** No further relevant information available.
- **Primary irritant effect:**
  - **on the skin:** Irritant to skin and mucous membranes.
  - **on the eye:** No irritating effect.
- **Sensitization:** Sensitization possible through skin contact.
- **Additional toxicological information:**
  - The product shows the following dangers according to internally approved calculation methods for preparations:
    - Irritant
- **Carcinogenic categories**
  - **IARC (International Agency for Research on Cancer)**
    - methyl methacrylate (MMA) 3
    - silicon dioxide 3
    - titanium dioxide 2B
  - **NTP (National Toxicology Program)**
    - None of the ingredients is listed.
Trade name: OPTIGLAZE color (Shades: Blue, Clear, Grey, Ivory White, Lavender, Olive, Orange, Pink, Pink Orange, Red, Red Brown, White, and Yellow)

**OSHA-Ca (Occupational Safety & Health Administration)**
None of the ingredients is listed.

**Carcinogenic categories' legend:**
- IARC Group 1: The agent is carcinogenic to humans.
- IARC Group 2A: The agent is probably carcinogenic to humans.
- IARC Group 2B: The agent is possibly carcinogenic to humans.
- IARC Group 3: The agent is not classifiable as to its carcinogenicity to humans.
- IARC Group 4: The agent is probably not carcinogenic to humans.
- NTP K: Known to be human carcinogen.
- NTP R: Reasonably anticipated to be human carcinogen.

### 12 Ecological information

- **Toxicity**
  - Aquatic toxicity: No further relevant information available.
- **Persistence and degradability** No further relevant information available.
- **Behavior in environmental systems:**
  - Bioaccumulative potential: No further relevant information available.
  - Mobility in soil: No further relevant information available.
- **Additional ecological information:**
  - General notes:
    - Water hazard class 3 (Self-assessment): extremely hazardous for water
    - Do not allow product to reach ground water, water course or sewage system, even in small quantities.
    - Danger to drinking water if even extremely small quantities leak into the ground.
- **Results of PBT and vPvB assessment**
  - PBT: Not applicable.
  - vPvB: Not applicable.
  - Other adverse effects: No further relevant information available.

### 13 Disposal considerations

- **Waste treatment methods**
  - **Recommendation:**
    - Must not be disposed of together with household garbage. Do not allow product to reach sewage system.
- **Uncleaned packagings:**
  - **Recommendation:** Disposal must be made according to official regulations.

### 14 Transport information

- **UN-Number**
  - DOT, ADR, IMDG, IATA: UN1247
- **UN proper shipping name**
  - DOT: Methyl methacrylate monomer, stabilized solution
  - ADR: 1247 Methyl methacrylate monomer, stabilized solution
### Trade name: OPTIGLAZE color (Shades: Blue, Clear, Grey, Ivory White, Lavender, Olive, Orange, Pink, Pink Orange, Red, Red Brown, White, and Yellow)

### IMDG, IATA
- **METHYL METHACRYLATE MONOMER, STABILIZED solution**

### Transport hazard class(es)
- **DOT**
  - **Class**: 3
  - **Label**: 3 Flammable liquids
- **ADR**
  - **Class**: 3 (F1)
  - **Label**: 3 Flammable liquids
- **IMDG, IATA**
  - **Class**: 3
  - **Label**: 3 Flammable liquids

### Packing group
- **DOT, ADR, IMDG, IATA**: II

### Environmental hazards:
- **Marine pollutant**: No

### Special precautions for user
- **Danger code (Kemler)**: 339
- **EMS Number**: F-E-S-D

### Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code
- Not applicable.

### Transport/Additional information:
- **ADR**
  - **Excepted quantities (EQ)**
    - Code: E2
    - Maximum net quantity per inner packaging: 30 ml
    - Maximum net quantity per outer packaging: 500 ml
- **IMDG**
  - **Limited quantities (LQ)**: 1L

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(Contd. on page 9)
Trade name: OPTIGLAZE color (Shades: Blue, Clear, Grey, Ivory White, Lavender, Olive, Orange, Pink, Pink Orange, Red, Red Brown, White, and Yellow)

· Excepted quantities (EQ)  
  Code: E2  
  Maximum net quantity per inner packaging: 30 ml  
  Maximum net quantity per outer packaging: 500 ml

· UN "Model Regulation":  
  UN1247, Methyl methacrylate monomer, stabilized solution, 3, II

15 Regulatory information

· Safety, health and environmental regulations/legislation specific for the substance or mixture
  · SARA (Superfund Amendments and Reauthorization Act)
    · Section 355 (extremely hazardous substances):  
      None of the ingredient is listed.
    · Section 313 (Specific toxic chemical listings):  
      methyl methacrylate (MMA)
    · TSCA (Toxic Substances Control Act):  
      All ingredients are listed.
  · Carcinogenic categories
    · EPA (Environmental Protection Agency)  
      methyl methacrylate (MMA)  
      E, NL
    · TLV (Threshold Limit Value established by ACGIH)  
      methyl methacrylate (MMA)  
      A4
      titanium dioxide  
      A4
  · NIOSH-Ca (National Institute for Occupational Safety and Health)  
    titanium dioxide
  · GHS label elements  
    The product is classified and labeled according to the Globally Harmonized System (GHS).
  · Hazard pictograms
    GHS02  GHS07
  · Signal word Danger
  · Hazard-determining components of labeling:  
    methyl methacrylate (MMA)  
    titanium dioxide
  · Hazard statements  
    Highly flammable liquid and vapor.  
    Causes skin irritation.  
    May cause an allergic skin reaction.  
    May cause respiratory irritation.
  · Precautionary statements  
    Keep away from heat/sparks/open flames/hot surfaces. - No smoking.  
    Wear protective gloves / eye protection / face protection.
Contaminated work clothing must not be allowed out of the workplace.
If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
Store locked up.
Dispose of contents/container in accordance with local/regional/national/international regulations.

Chemical safety assessment: A Chemical Safety Assessment has not been carried out.
**Trade name:** OPTIGLAZE color (Shades: Blue, Clear, Grey, Ivory White, Lavender, Olive, Orange, Pink, Pink Orange, Red, Red Brown, White, and Yellow)

However, nothing in this document excludes or limits our liability for death or personal injury caused by our negligence or for fraudulent misrepresentation.