Hygenic® Acrylic Liquid Cold Cure Monomers
Hyflo® Denture Resin, Hygenic® Cold Cure Resin, Perm® Reline / Repair Resin,
Hygenic® Orthodontic Resin, Hygon® Tray Material

Revision Date: October 2014
Internal Document Number: 48290B

Section 1: PRODUCT AND COMPANY IDENTIFICATION

Product Names: Hygenic® Acrylic Liquid Cold Cure Monomers (Hyflo® Denture Resin, Hygenic® Cold Cure Resin, Perm® Reline / Repair Resin, Hygenic® Orthodontic Resin, Hygon® Tray Material)

Product Code(s): See Section 16 for applicable product codes.

Relevant identified uses of the mixture and uses advised against: Acrylic Cold Cure Liquid is intended to be mixed with a powder component and used in the construction of dental and orthodontic prosthetics. Federal law restricts this device to sale by or on the order of a physician. Uses advised against: None noted.

Synonyms: None.

Manufacturer Authorized EC Representative Emergency Contact Number:
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Section 2: HAZARDS IDENTIFICATION

Classifications: Flammable Liquids (Category 2), Skin Irritation (Category 2), Skin Sensitization (Category 1), Specific Target Organ Toxicity - Single Exposure (STOT-SE Category 3) Respiratory System

Appearance: Clear, Lightly Tinted Liquid With a Sharp, Pungent Odor

Contains: Methyl methacrylate, Ethylene Dimethacrylate

Route(s) of Exposure: Dermal (Eye/Skin), Inhalation, Ingestion

Hazard Category Signal Word: Hazard Statements:
Flammable Liquids (Category 2) DANGER H225 Highly flammable liquid and vapor.
Skin Irritation (Category 2) H315 Causes skin irritation.
Skin Sensitization (Category 1) H317 May cause an allergic skin reaction.
Specific Target Organ Toxicity - Single Exposure (STOT-SE Category 3) Respiratory System H335 May cause respiratory irritation.


Response: P303 + P361 + P353 IF ON SKIN (or hair): Remove/ Take off immediately all contaminated clothing. Rinse skin with water/ shower. P304 + P340 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. P312 Call a POISON CENTER or doctor/ physician if you feel unwell. P321 Specific treatment (see supplemental first aid instructions on this label). P333 + P313 If skin irritation or rash occurs: Get medical advice/ attention. P362 Take off contaminated clothing and wash before reuse. P370 + P378 In case of fire: Use dry sand, dry chemical or alcohol-resistant foam for extinction.


Disposal: P501 Dispose of contents/ container to an approved waste disposal plant.
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Classification in accordance with Directives 67/548/EEC and 1999/45/EC: F; R11 Xi; R37/38 R43 (see Section 15 for full text)

Other hazards which do not result in classification: None.

PBT/vPvB Assessment: This product does not contain persistent, bioaccumulative and toxic chemicals (PBT’s) nor does this product contain any very persistent and very bioaccumulative chemicals (vPvB’s).

Section 3: COMPOSITION / INFORMATION ON INGREDIENTS

<table>
<thead>
<tr>
<th>Substance</th>
<th>CAS</th>
<th>EC number</th>
<th>Index Number</th>
<th>Percent (w/w%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Methyl Methacrylate</td>
<td>80-62-6</td>
<td>201-297-1</td>
<td>607-035-00-6</td>
<td>85 – 95</td>
</tr>
<tr>
<td>Ethylene Dimethacrylate</td>
<td>97-90-5</td>
<td>202-617-2</td>
<td>607-114-00-5</td>
<td>2.0 – 5.0</td>
</tr>
</tbody>
</table>

Section 4: FIRST AID MEASURES

General Advice: Consult a physician. Show this safety data sheet to the doctor in attendance. Move out of dangerous area.

If Inhaled: If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

Skin Contact: Wash off with soap and plenty of water. Consult a physician if a reaction occurs.

Eye Contact: Flush eyes with water as a precaution.

If Swallowed: Do not induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

Section 5: FIRE FIGHTING MEASURES

Vapors are flammable at ambient temperatures and atmospheric pressure. Containers may rupture or explode under fire conditions.

Extinguishing Media: Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

Specific Hazards Arising from the Chemical: Carbon oxides, Flash back possible over considerable distance., Container explosion may occur under fire conditions.

Protective Equipment and Precautions for Firefighters: standard protection for all firefighters stated in this subsection of the SDS text should include self-contained breathing apparatus (SCBA) and full firefighting turn-out gear (Bunker gear).

Section 6: ACCIDENTAL RELEASE MEASURES

Personal Precautions, Protective Equipment, and Emergency Procedures: Use personal protective equipment. Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Remove all sources of ignition. Evacuate personnel to safe areas. Beware of vapors accumulating to form explosive concentrations. Vapors can accumulate in low areas. For personal protection see section 8.

Methods for Containment and Clean-up: Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Contain spillage, and then collect with an electrically protected vacuum cleaner or by wet-brushing and place in container for disposal according to local regulations (see section 13).

Other Information: See Section 13 for disposal methods.
Section 7: HANDLING AND STORAGE

May cause sensitization of susceptible persons by skin contact. For personal protection see section 8. Ground all metal containers during storage and handling.

Storage Conditions: Minor deviations (7C/13F) above the recommended temperature (see below) are acceptable for short periods of time (one week) for material in transit. Store in cool place. Keep away from direct sunlight. Material can burn; limit indoor storage to approved areas equipped with automatic sprinklers. Ground all metal containers during storage and handling. This product contains inhibitor to stabilize it during shipment and storage. The effectiveness of the inhibitor is dependent on the presence of dissolved oxygen. In order to maintain sufficient dissolved oxygen in the liquid to avoid polymerization, the monomer must always be stored with a vapor space oxygen concentration of 5% to 21%(air). Store material in containers made of the following: Stainless steel glass Aluminum steel Keep container tightly closed. Storage temperature: <= 38 °C (<= 100 °F) Storage period: 12 Month.

Other data: Use monomer within the recommended storage period from date of manufacture to avoid loss of stability or risk of polymerization.

Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

Component Exposure Limits:

<table>
<thead>
<tr>
<th>Component</th>
<th>Concentration:</th>
<th>NIOSH REL:</th>
<th>OSHA PEL:</th>
<th>IDLH:</th>
<th>AIHA WEEL</th>
<th>STEL's</th>
<th>Notation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Methyl Methacrylate</td>
<td>85-95</td>
<td>100 ppm</td>
<td>410 mg/m³</td>
<td>100 ppm</td>
<td>410 mg/m³</td>
<td>None</td>
<td>None</td>
</tr>
<tr>
<td>Ethylene Dimethacrylate</td>
<td>2-5</td>
<td>200 ppm</td>
<td>None</td>
<td>None</td>
<td>None</td>
<td>None</td>
<td>None</td>
</tr>
</tbody>
</table>

Appropriate Engineering Controls: Mechanical vapor capture enclosure and local ventilation should be used.

Personal Protective Equipment (Eyes and Face): wear safety goggles or face shield.

Personal Protective Equipment (Skin): Wear Protective Gloves

Personal Protective Equipment (Respiratory): If exposure is above OSHA PEL, wear a NIOSH approved respirator.

Section 9: PHYSICAL AND CHEMICAL PROPERTIES

Appearance: Clear, Lightly Tinted Liquid
Odor: Sharp, Pungent Odor
pH: No Data
Melting Point: No data
Specific Gravity: No data
Octanol / H₂O Coefficient: No data
Molecular Weight: No data
Auto Ignition: No data
Flash Point: 11°C (52°F)
Vapor Density: No data
VOC: No data
Explosive Limits in Air: l=1.8%, u=8.2%

Viscosity: 10 cps
Odor Threshold: No data
Boiling Point: 101 °C (>212 °F)
Solubility (H₂O): 1.6 g/ 100 g water @ 20°C
Density: 8.0 lb/gal
Evaporation Rate: No data
Decomposition Temp: No data
LFL: 2.1 %
UFL: 12.5 %
Vapor Pressure: 29 mmHg @ 20°C
Flammability Class: No data
Section 10: STABILITY AND REACTIVITY

**Chemical Stability:** Stable in presence of inhibitor.

**Materials to Avoid:** Reducing and strong oxidizing agents. Material has strong solvent qualities and can soften paint or rubber.

**Hazardous decomposition products:** Oxides of Carbon.

**Materials to Avoid:** Excessive heat, storage without inhibitor, and inadvertent addition of catalyst.

**Reactivity:** Reactive with oxidizing agents and acids.

Section 11: TOXICOLOGICAL INFORMATION

**Likely Routes of Exposure:** Dermal (Eye/Skin), Ingestion, Inhalation

**Acute Toxicity:** Acute Oral Rat LD50 – 7990 mg/kg, Acute Dermal Rabbit LD50 – 35,500 mg/kg, Acute Inhalation Rat 12, 500 – 16, 500 ppm for ½ hour

- **Primary Effects to Skin:** Allergic reaction can occur by repeated direct contact.
- **Primary Effects to Eyes:** Irritation can occur by repeated direct contact.
- **Primary Effects to Respiratory System:** Overexposure to vapors may cause respiratory tract irritation and central nervous system depression.
- **Ingestion:** No data available.

**Sensitization:** Human allergic responses have been observed.

**Carcinogenicity:** Methyl Methacrylate is listed by IARC as Group 3 “not classifiable as human carcinogens”. Product does not contain carcinogens listed with NTP or ACGIH.

**Teratogenicity:** MMA did not cause birth defects, malformations, or fetal toxicity in pregnant rats inhaling concentrations up to 2028 ppm.

**Additional Toxicological Info:** In a retrospective study of the effects of exposure to ethyl acrylate and methyl methacrylate on workers hired in one plant between 1933 and 1945, a higher-than-expected incidence of colorectal cancer mortality was observed. However, there was no association of risk in similarly exposed populations from other locations or in subsequent evaluations of the same location.

The National Toxicology Program used rats with chronic inhalation at concentration up to 1000 ppm which caused nasal irritation, inflammation of the nasal cavity and degeneration of the olfactory epithelium.

Section 12: ECOLOGICAL INFORMATION

**Ecotoxicity:**

<table>
<thead>
<tr>
<th>Toxicity to Fish</th>
<th>LC50 - Pimephales promelas (fathead minnow) - 125.5 - 275.0 mg/l - 96 h</th>
</tr>
</thead>
<tbody>
<tr>
<td>Toxicity to Daphnia and Other Aquatic Invertebrates</td>
<td>EC50 - Daphnia magna (Water flea) - 720 mg/l</td>
</tr>
<tr>
<td>Toxicity to Algae</td>
<td>EC50 - Pseudokirchneriella subcapitata (green algae) - 170 mg/l - 96 h</td>
</tr>
</tbody>
</table>

**Persistence / Degradability:** No data available.

**Bioaccumulative Potential:** The product has low potential for bioaccumulation.

**Mobility in Soil:** No data available.

**Other Adverse Effects:** No data available.

This product does not contain persistent, bioaccumulative and toxic chemicals (PBT’s) nor does this product contain any very persistent and very bioaccumulative chemicals (vPvB’s).
Section 13: DISPOSAL CONSIDERATIONS

Disposal: CAUTION - Keep spills and cleaning runoff out of municipal sewers and open bodies of water. Do not allow material to contaminate ground water system.

May be disposed of as household waste after polymerization, if the necessary technical regulations are observed and after consulting the disposer and the responsible authority.

EWC: European Waste catalogue(EWC) 07 02 99: Waste not otherwise specified.

RCRA: Characteristic Waste D001 - When a decision is made to discard this material as supplied, it is classified as a RCRA hazardous waste with the characteristic of ignitability. After the addition of excess inhibitor, incinerate liquid and contaminated diking material in accordance with local, state, and federal regulations.

Contaminated packaging: Dispose of as unused product. CONTAINERS MAY BE HAZARDOUS WHEN EMPTY. Since emptied containers retain product residue follow all SDS and label warnings even after container is emptied. Do not burn, or use a cutting torch on, the empty drum. Improper disposal or re-use of this container may be dangerous and illegal. Refer to applicable local, state and federal regulations.

Additional Disposal Considerations: Dispose if shelf-life has been exceeded.

Section 14: TRANSPORT INFORMATION

Emergency Response Guide Number: 129

<table>
<thead>
<tr>
<th>Agency</th>
<th>Proper Shipping name</th>
<th>UN-No.</th>
<th>Hazard Class</th>
<th>Label</th>
</tr>
</thead>
<tbody>
<tr>
<td>DOT</td>
<td>Methyl methacrylate monomer, stabilized</td>
<td>UN1247</td>
<td>3 PG II RQ 1000 lbs</td>
<td></td>
</tr>
<tr>
<td>Sea Transport IMDG/GGV</td>
<td>Methyl methacrylate monomer, stabilized</td>
<td>UN1247</td>
<td>3 PG II EmS F-E S-D</td>
<td></td>
</tr>
<tr>
<td>Air Transport ICAO-Ti and</td>
<td>Methyl methacrylate monomer, stabilized</td>
<td>UN1247</td>
<td>3 PG II</td>
<td></td>
</tr>
<tr>
<td>IATA-DGR</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

For shipments where the containers do not exceed 5L (5 Liter = 1.3 Gallons):

<table>
<thead>
<tr>
<th>Agency</th>
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<th>Hazard Class</th>
<th>Label</th>
</tr>
</thead>
<tbody>
<tr>
<td>DOT / International Ground</td>
<td>Consumer Commodity</td>
<td>ID8000</td>
<td>Consumer Commodity</td>
<td>ORM-D</td>
</tr>
<tr>
<td>Sea Transport IMDG/GGV Sea</td>
<td>Methyl methacrylate monomer, stabilized</td>
<td>ID8000</td>
<td>Consumer Commodity</td>
<td></td>
</tr>
<tr>
<td>Air Transport ICAO-Ti and IATA-DGR</td>
<td>Methyl methacrylate monomer, stabilized</td>
<td>ID8000</td>
<td>Consumer Commodity</td>
<td></td>
</tr>
</tbody>
</table>

Section 15: REGULATORY INFORMATION

SARA Sections 302 and 304: This product does not contain Extremely Hazardous Substances (EHS) and is not subject to emergency planning requirements.

SARA Sections 311 and 312: Acute Health Hazard, Chronic Health Hazard, Fire Hazard, Reactivity Hazard.

CERCLA: This material is regulated under the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) and the Superfund Amendments and Reauthorization Act (SARA) Title III Section 304. This material is or contains chemical(s) listed in 40 CFR Table 302.4 or nondesignated RCRA ICR substance(s). (Nondesignated ICR substances apply to materials that will not be reused.) The Reportable Quantity(s) (RQ) are listed below. Releases in
excess of its reportable quantity must be reported to the National Response Center (1-800-424-8802) and to the appropriate state and local emergency response organizations.

### SARA Section 313: Substance CAS Percent (w/w%)

<table>
<thead>
<tr>
<th>Substance</th>
<th>CAS</th>
<th>Percent (w/w%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Methyl Methacrylate</td>
<td>80-62-6</td>
<td>85-95</td>
</tr>
<tr>
<td>Ethylene Glycol Dimethacrylate</td>
<td>97-90-5</td>
<td>2-5</td>
</tr>
</tbody>
</table>

### Inventories:

- **US (TSCA):** The components within this product are included on the TSCA Inventory of Chemical Substances
- **Canada (DSL):** All ingredients are on the inventory or exempt from listing.
- **Europe (EINECS):** All ingredients conform to the EU requirements.
- **Japan (ENCS):** All other ingredients are on the inventory or exempt from listing.
- **Philippines (PICCS):** All other ingredients are on the inventory or exempt from listing.
- **South Korea (KECL):** All ingredients are on the Inventory or exempt from listing.
- **Australia (AICS):** All ingredients are on the Inventory or exempt from listing.
- **New Zealand (NZIoC):** All ingredients are on the Inventory or exempt from listing.
- **China (IECSC):** All ingredients are on the Inventory or exempt from listing.

### California Proposition 65:

This Product Contains Chemicals Known To The State of California To Cause Cancer: N,N-Dimethyl-p-toluidine / CAS# 99-97-8 (< 1%w/w).

### Canadian Regulations:

Regulatory Information: This product has been classified in accordance with the hazard criteria of the controlled Products Regulations and the MSDS contains all the information required by the Controlled Products Regulations.

### Classification:

**Classification in accordance with Directives 67/548/EEC and 1999/45/EC (full text):** F – Flammable, R11 - Highly flammable, Xi – Irritant, R37/38 - Irritating to respiratory system and skin, R43 - May cause sensitization by skin contact

### Section 16: OTHER INFORMATION

**NFPA Ratings:**

- Health: 2
- Fire: 3
- Reactivity: 2

**HMIS Ratings:**

- Health: 2
- Fire: 3
- Reactivity: 2

(NFPA and HMIS Hazard Scale: 0 = Minimal 1 = Slight 2 = Moderate 3 = Serious 4 = Severe).

**Product Codes:**

Hygenic® Acrylic Liquid Cold Cure Monomers

Hyflo® Denture Resin, Hygenic® Cold Cure Resin, Perm® Reline / Repair Resin, Hygenic® Orthodontic Resin, Hygon® Tray Material

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REVISION HISTORY

<table>
<thead>
<tr>
<th>REVISION</th>
<th>DATE</th>
<th>ECN#</th>
<th>CHG BY</th>
<th>APPR BY</th>
<th>DESC. OF CHANGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>09/30/2014</td>
<td>14410</td>
<td>TG</td>
<td>SBL</td>
<td>Updated MSDS to GHS/SDS Format. 48290 Revision A supersedes 48135 revision A.</td>
</tr>
<tr>
<td>B</td>
<td>10/09/2014</td>
<td>14435</td>
<td>SBL</td>
<td>SBL</td>
<td>Added Hygon Tray Material in Section 1 and title. Also added corresponding Product Codes. Added Limited quantity ground symbol to Section 14.</td>
</tr>
</tbody>
</table>

The information and recommendations set forth herein are presented in good faith and are believed to be correct as of the date hereof. Coltène/Whaledent Inc., however, makes no representations as to the completeness of this information and supplies it on the condition that the persons receiving same will make their own determination as to its suitability of their purposes prior to use. In no event will Coltène/Whaledent Inc. be responsible for damages of any nature whatsoever resulting from use of or reliance upon information.