SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1 Product identifier
Trade name : POLCOB®1

1.2 Relevant identified uses of the substance or mixture and uses advised against
Use of the Substance/Mixture : Catalyst

1.3 Details of the supplier of the safety data sheet
Company : United Initiators GmbH
Dr.-Gustav-Adolph-Str. 3
82049 Pullach

E-mail address of person responsible for the SDS : contact@united-in.com

1.4 Emergency telephone number
+49 / 89 / 74422 – 0 (24 h)

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture
Classification (REGULATION (EC) No 1272/2008)
Serious eye damage, Category 1 : H318: Causes serious eye damage.
Specific target organ toxicity - single exposure, Category 3, Respiratory system : H335: May cause respiratory irritation.

2.2 Label elements
Labelling (REGULATION (EC) No 1272/2008)
Hazard pictograms : 

Signal word : Danger
Hazard statements : H226 Flammable liquid and vapour.
H318  Causes serious eye damage.
H335  May cause respiratory irritation.

Precautionary statements :

**Prevention:**
- P210  Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
- P262  Do not get in eyes, on skin, or on clothing.
- P280  Wear protective gloves/ protective clothing/ eye protection/ face protection.

**Response:**
- P305 + P351 + P338  IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
- P315  Get immediate medical advice/ attention.
- P370 + P378  In case of fire: Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide to extinguish.

**Storage:**
- P403 + P235  Store in a well-ventilated place. Keep cool.

**Disposal:**
- P501  Dispose of contents/ container to an approved waste disposal plant.

Hazardous components which must be listed on the label:
ethyl-(S)-2-hydroxypropionate (CAS-No. 687-47-8)

**2.3 Other hazards**
This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

**SECTION 3: Composition/information on ingredients**

**3.2 Mixtures**

Chemical nature :  Mixture contains polymer bound cobalt

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>CAS-No.</th>
<th>EC-No.</th>
<th>Index-No.</th>
<th>Classification</th>
<th>Concentration (%) w/w</th>
</tr>
</thead>
<tbody>
<tr>
<td>ethyl-(S)-2-hydroxypropionate</td>
<td>687-47-8</td>
<td>211-694-1</td>
<td>607-129-00-7</td>
<td>Flam. Liq. 3; H226 Eye Dam. 1; H318 STOT SE 3; H335</td>
<td>&gt;= 85 - &lt; 90</td>
</tr>
</tbody>
</table>
SECTION 4: First aid measures

4.1 Description of first aid measures

General advice: Move out of dangerous area.
  - Show this safety data sheet to the doctor in attendance.
  - Do not leave the victim unattended.
  - Call a physician immediately.

Protection of first-aiders: First Aid responders should pay attention to self-protection and use the recommended protective clothing.

If inhaled: If unconscious, place in recovery position and seek medical advice.
  - Keep respiratory tract clear.
  - If symptoms persist, call a physician.
  - If breathed in, move person into fresh air.

In case of skin contact: In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes.
  - Wash contaminated clothing before re-use.
  - If on skin, rinse well with water.
  - If on clothes, remove clothes.
  - If symptoms persist, call a physician.

In case of eye contact: Small amounts splashed into eyes can cause irreversible tissue damage and blindness.
  - In the case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
  - Continue rinsing eyes during transport to hospital.
  - Remove contact lenses.
  - Protect unharmed eye.
  - Keep eye wide open while rinsing.
  - If eye irritation persists, consult a specialist.

If swallowed: Keep respiratory tract clear.
  - Do NOT induce vomiting.
  - Call a physician immediately.
  - Rinse mouth thoroughly with water.

4.2 Most important symptoms and effects, both acute and delayed

Risks: Causes serious eye damage.
  - May cause respiratory irritation.
4.3 Indication of any immediate medical attention and special treatment needed
   Treatment : Treat symptomatically and supportively.

SECTION 5: Firefighting measures

5.1 Extinguishing media
   Suitable extinguishing media : Water spray jet
                                 Alcohol-resistant foam
                                 Carbon dioxide (CO2)
                                 Dry chemical
   Unsuitable extinguishing media : High volume water jet

5.2 Special hazards arising from the substance or mixture
   Specific hazards during firefighting : Vapours may form explosive mixtures with air.
                                        The product will float on water and can be reignited on surface water.
                                        Cool closed containers exposed to fire with water spray.

5.3 Advice for firefighters
   Special protective equipment for firefighters : Wear self-contained breathing apparatus for firefighting if necessary. Use personal protective equipment.
   Specific extinguishing methods : Do not use a solid water stream as it may scatter and spread fire.
                                      Remove undamaged containers from fire area if it is safe to do so.
                                      Use water spray to cool unopened containers.
   Further information : Collect contaminated fire extinguishing water separately. This must not be discharged into drains.
                         Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.
                         Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures
   Personal precautions : Use personal protective equipment.
                           Remove all sources of ignition.
                           Evacuate personnel to safe areas.
                           Follow safe handling advice and personal protective equipment recommendations.
Beware of vapours accumulating to form explosive concentrations. Vapours can accumulate in low areas. Treat recovered material as described in the section "Disposal considerations".

6.2 Environmental precautions
Environmental precautions:
- Prevent product from entering drains.
- Prevent further leakage or spillage if safe to do so.
- If the product contaminates rivers and lakes or drains inform respective authorities.

6.3 Methods and material for containment and cleaning up
Methods for cleaning up:
- Clear spills immediately.
- Suppress (knock down) gases/vapours/mists with a water spray jet.
- To clean the floor and all objects contaminated by this material, use plenty of water.
- Soak up with inert absorbent material.
- Isolate waste and do not reuse.
- Non-sparking tools should be used.
- Local or national regulations may apply to releases and disposal of this material, as well as those materials and items employed in the cleanup of releases. You will need to determine which regulations are applicable.

6.4 Reference to other sections
For personal protection see section 8.

SECTION 7: Handling and storage

7.1 Precautions for safe handling
Technical measures:
- See Engineering measures under EXPOSURE CONTROLS/PERSONAL PROTECTION section.

Advice on safe handling:
- Do not breathe vapours/dust.
- Avoid exposure - obtain special instructions before use.
- Avoid contact with skin and eyes.
- Avoid formation of aerosol.
- Take precautionary measures against static discharges.
- Provide sufficient air exchange and/or exhaust in work rooms.
- Avoid confinement.
- Smoking, eating and drinking should be prohibited in the application area.
- Wash thoroughly after handling.
- For personal protection see section 8.

Advice on protection against fire and explosion:
- Take necessary action to avoid static electricity discharge (which might cause ignition of organic vapours). Keep away
from heat and sources of ignition. Use only explosion-proof equipment.

**Hygiene measures**: Keep away from food and drink. When using do not eat or drink. When using do not smoke. Wash hands before breaks and immediately after handling the product.

### 7.2 Conditions for safe storage, including any incompatibilities

**Requirements for storage areas and containers**: Electrical installations / working materials must comply with the technological safety standards. Containers which are opened must be carefully resealed and kept upright to prevent leakage. Store in accordance with the particular national regulations.

**Recommended storage temperature**: 5 - 30 °C

### 7.3 Specific end use(s)

**Specific use(s)**: No data available

## SECTION 8: Exposure controls/personal protection

### 8.1 Control parameters

Contains no substances with occupational exposure limit values.

### 8.2 Exposure controls

**Engineering measures**

Minimize workplace exposure concentrations.

**Personal protective equipment**

**Eye protection**: Tightly fitting safety goggles

Please wear suitable protective goggles. Also wear face protection if there is a splash hazard.

Ensure that eyewash stations and safety showers are close to the workstation location.

**Hand protection**

- **Material**: butyl-rubber
- **Break through time**: >= 480 min
- **Glove thickness**: 0.5 mm

**Remarks**: Choose gloves to protect hands against chemicals depending on the concentration and quantity of the hazardous substance and specific to place of work. For special applications, we recommend clarifying the resistance to chemicals of the aforementioned protective gloves with the glove manufactur-
Wash hands before breaks and at the end of workday.

Skin and body protection: Select appropriate protective clothing based on chemical resistance data and an assessment of the local exposure potential.

Respiratory protection: In the case of dust or aerosol formation use respirator with an approved filter.

Filter type: ABEK-filter

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Appearance: viscous liquid

Colour: violet

Odour: characteristic

Melting point/range: not determined

Boiling point/boiling range: 153 °C

Flash point: 54 °C
   Method: closed cup

Upper explosion limit / Upper flammability limit: 11.4 % (V)

Lower explosion limit / Lower flammability limit: 1.5 % (V)

Vapour pressure: ca. 1.8 hPa (20 °C)

Density: ca. 1 g/cm3 (20 °C)

Solubility(ies)
   Water solubility: insoluble

Explosive properties: Not explosive

9.2 Other information

No data available
SECTION 10: Stability and reactivity

10.1 Reactivity
Stable under recommended storage conditions.

10.2 Chemical stability
Stable under recommended storage conditions.

10.3 Possibility of hazardous reactions
Hazardous reactions : None known.

10.4 Conditions to avoid
Conditions to avoid : Heat, flames and sparks.

10.5 Incompatible materials
Materials to avoid : No data available

10.6 Hazardous decomposition products
Irritant, caustic, flammable, noxious/toxic gases and vapours can develop in the case of fire and decomposition

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute toxicity
Not classified based on available information.

Components:

ethyl-(S)-2-hydroxypropionate:

Acute oral toxicity : LD50 Oral (Rat): > 2,000 mg/kg
Assessment: The substance or mixture has no acute oral toxicity
Remarks: No mortality observed at this dose.

Acute inhalation toxicity : LC50 (Rat): > 5,400 mg/l
Exposure time: 4 h
Test atmosphere: dust/mist
Assessment: The substance or mixture has no acute inhalation toxicity
Remarks: No mortality observed at this dose.

Acute dermal toxicity : Remarks: No data available

Skin corrosion/irritation
Not classified based on available information.
Components:

ethyl-(S)-2-hydroxypropionate:
Remarks : Based on available data, the classification criteria are not met.

Serious eye damage/eye irritation
Causes serious eye damage.

Product:
Remarks : May cause irreversible eye damage.

Components:

ethyl-(S)-2-hydroxypropionate:
Result : Corrosive
Remarks : May cause irreversible eye damage.

Respiratory or skin sensitisation

Skin sensitisation
Not classified based on available information.

Respiratory sensitisation
Not classified based on available information.

Components:

ethyl-(S)-2-hydroxypropionate:
Remarks : Based on available data, the classification criteria are not met.

Germ cell mutagenicity
Not classified based on available information.

Carcinogenicity
Not classified based on available information.

Reproductive toxicity
Not classified based on available information.

STOT - single exposure
May cause respiratory irritation.

Components:

ethyl-(S)-2-hydroxypropionate:
Assessment : May cause respiratory irritation.
STOT - repeated exposure
Not classified based on available information.

Aspiration toxicity
Not classified based on available information.

Components:
ethyl-(S)-2-hydroxypropionate:
No aspiration toxicity classification

Further information
Product:
Remarks : Solvents may degrease the skin.

Components:
ethyl-(S)-2-hydroxypropionate:
Remarks : Solvents may degrease the skin.

SECTION 12: Ecological information

12.1 Toxicity

Components:
ethyl-(S)-2-hydroxypropionate:
Toxicity to fish : LC50 (Fish): 320 mg/l
Exposure time: 96 h

12.2 Persistence and degradability
No data available

12.3 Bioaccumulative potential
No data available

12.4 Mobility in soil
No data available

12.5 Results of PBT and vPvB assessment

Product:
Assessment : This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.
12.6 Other adverse effects

**Product:**
Additional ecological information: No data available

**Components:**
ethyl-(S)-2-hydroxypropionate:
Additional ecological information: No data available

SECTION 13: Disposal considerations

13.1 Waste treatment methods

**Product:**
The product should not be allowed to enter drains, water courses or the soil.
Do not contaminate ponds, waterways or ditches with chemical or used container.
Dispose of wastes in an approved waste disposal facility.

**Contaminated packaging:**
Empty remaining contents.
Dispose of as unused product.
Do not re-use empty containers.
Do not burn, or use a cutting torch on, the empty drum.
Dispose of in accordance with local regulations.

SECTION 14: Transport information

14.1 UN number

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<tr>
<th>ADR</th>
<th>UN 1993</th>
</tr>
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<tbody>
<tr>
<td>RID</td>
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<tr>
<td>IMDG</td>
<td>UN 1993</td>
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<tr>
<td>IATA</td>
<td>UN 1993</td>
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</tbody>
</table>

14.2 UN proper shipping name

<table>
<thead>
<tr>
<th>ADR</th>
<th>FLAMMABLE LIQUID, N.O.S. (ethyl (S)-2-hydroxypropionate)</th>
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<tr>
<td>RID</td>
<td>FLAMMABLE LIQUID, N.O.S. (ethyl (S)-2-hydroxypropionate)</td>
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<td>FLAMMABLE LIQUID, N.O.S. (ethyl (S)-2-hydroxypropionate)</td>
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<tr>
<td>IATA</td>
<td>Flammable liquid, n.o.s.</td>
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14.3 Transport hazard class(es)

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<td>IMDG</td>
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</tr>
<tr>
<td>IATA</td>
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</table>

14.4 Packing group

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<td>IATA (Cargo)</td>
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<tr>
<td>IATA (Passenger)</td>
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<tr>
<td>Labels</td>
<td>: Flammable Liquids</td>
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14.5 Environmental hazards

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<th></th>
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<tbody>
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<td>ADR</td>
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<tr>
<td>RID</td>
<td>Environmentally hazardous : no</td>
</tr>
<tr>
<td>IMDG</td>
<td>Marine pollutant : no</td>
</tr>
</tbody>
</table>

14.6 Special precautions for user

The transport classification(s) provided herein are for informational purposes only, and solely based upon the properties of the unpackaged material as it is described within this Safety Data Sheet. Transportation classifications may vary by mode of transportation, package sizes, and variations in regional or country regulations.
SAFETY DATA SHEET  
according to Regulation (EC) No. 1907/2006

POLCOB®  

14.7 Transport in bulk according to Annex II of Marpol and the IBC Code  
Not applicable for product as supplied.

SECTION 15: Regulatory information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

REACH - Candidate List of Substances of Very High Concern for Authorisation (Article 59): Not applicable

REACH - List of substances subject to authorisation (Annex XIV): Not applicable

Regulation (EC) No 1005/2009 on substances that deplete the ozone layer: Not applicable

Regulation (EC) No 850/2004 on persistent organic pollutants: Not applicable


REACH - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, preparations and articles (Annex XVII): Conditions of restriction for the following entries should be considered: Number on list 3 ethyl-(S)-2-hydroxypropionate (Number on list 3)


<table>
<thead>
<tr>
<th>P5c</th>
<th>FLAMMABLE LIQUIDS</th>
</tr>
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<tbody>
<tr>
<td>Quantity 1</td>
<td>5,000 t</td>
</tr>
<tr>
<td>Quantity 2</td>
<td>50,000 t</td>
</tr>
</tbody>
</table>

The components of this product are reported in the following inventories:

DSL (CA): All components of this product are on the Canadian DSL

ENCS (JP): On the inventory, or in compliance with the inventory

ISHL (JP): On the inventory, or in compliance with the inventory

PICCS (PH): On the inventory, or in compliance with the inventory

TCSI (TW): On the inventory, or in compliance with the inventory
15.2 Chemical safety assessment
This information is not available.

SECTION 16: Other information

Full text of H-statements
H226 : Flammable liquid and vapour.
H318 : Causes serious eye damage.
H335 : May cause respiratory irritation.

Full text of other abbreviations
Eye Dam. : Serious eye damage
Flam. Liq. : Flammable liquids
STOT SE : Specific target organ toxicity - single exposure

ADN - European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways; ADR - European Agreement concerning the International Carriage of Dangerous Goods by Road; AICS - Australian Inventory of Chemical Substances; ASTM - American Society for the Testing of Materials; bw - Body weight; CLP - Classification Labelling Packaging Regulation; Regulation (EC) No 1272/2008; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DSL - Domestic Substances List (Canada); ECHA - European Chemicals Agency; EC-Number - European Community number; ECx - Concentration associated with x% response; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50% of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; n.o.s. - Not Otherwise Specified; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RID - Regulations concerning the International Carriage of Dangerous Goods by Rail; SADT - Self-Accelerating Decomposition Temperature; SDS - Safety Data Sheet; SVHC - Substance of Very High Concern; TCSI - Taiwan Chemical Substance Inventory; TRGS - Technical Rule for Hazardous Substances; TSCA - Toxic Substances Control Act (United States); UN - United Nations; vPvB - Very Persistent and Very Bioaccumulative
Further information

Other information: This safety datasheet only contains information relating to safety and does not replace any product information or product specification. These safety instructions also apply to empty packaging which may still contain product residues.


Classification of the mixture:

<table>
<thead>
<tr>
<th>Property</th>
<th>Classification Code</th>
<th>Calculation Method</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flam. Liq. 3</td>
<td>H226</td>
<td>Based on product data or assessment</td>
</tr>
<tr>
<td>Eye Dam. 1</td>
<td>H318</td>
<td>Calculation method</td>
</tr>
<tr>
<td>STOT SE 3</td>
<td>H335</td>
<td>Calculation method</td>
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</tbody>
</table>

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

GB / EN