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

- Product identifier
- Trade name: Biophenol/Chloroform/Isoamyl alcohol, 25:24:1, stabilized
- Article number: 1697

Details of the substance / the preparation
Chemical for research, development, manufacturing and analysis

- Application of the substance / the preparation
Chemical for research, development, manufacturing and analysis

Details of the supplier of the safety data sheet
Manufacturer/Supplier:
Biosolve B.V.
Leenderweg 78, 5555 CE Valkenswaard, the Netherlands.
Tel: +31-(0)40-2071300
Fax: +31-(0)40-2048537
Email: info@biosolve-chemicals.com

Biosolve Chimie
20 Rue Roger Husson, 57260 Dieuze, France
info@biosolvechimie.com

Bio-Lab Ltd.
POB 34038, Jerusalem 91340, Israel
Tel: + 972 -2- 584 1111
Fax: + 972 -2- 584 1110
Email: info@biolab-chemicals.com

- Information department: Product safety department
- Emergency telephone number: During normal opening times: +972 2 584 1111

2 Composition/information on ingredients

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

<table>
<thead>
<tr>
<th>Dangerous components:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>108-95-2 phenol</td>
<td>25-50%</td>
</tr>
<tr>
<td>🟢 H301; H311; H331; 🟢 H341; H373; 🟢 H314</td>
<td></td>
</tr>
<tr>
<td>67-66-3 chloroform</td>
<td>25-50%</td>
</tr>
<tr>
<td>🟢 H225; 🟢 H351; H373; 🟢 H302; H315</td>
<td></td>
</tr>
<tr>
<td>123-51-3 3-methylbutan-1-ol</td>
<td>≤ 2.5%</td>
</tr>
<tr>
<td>🟢 H226; 🟢 H332; H335</td>
<td></td>
</tr>
<tr>
<td>91-22-5 quinoline</td>
<td>≤ 2.5%</td>
</tr>
<tr>
<td>🟢 H341; H350; 🟢 H411; 🟢 H302; H312; H315; H319</td>
<td></td>
</tr>
</tbody>
</table>

3 Hazards identification

- Classification of the substance or mixture

GH506 Skull and crossbones

H311 Toxic in contact with skin.
H331 Toxic if inhaled.

GH508 Health hazard

(Contd. on page 2)
Trade name: Biophenol/Chloroform/Isoamyl alcohol, 25 :24:1, stabilized

34.0.2

H341  Suspected of causing genetic defects.
H350  May cause cancer.
H373  May cause damage to organs through prolonged or repeated exposure.

GHS05 Corrosion

H314  Causes severe skin burns and eye damage.

GHS07

H302  Harmful if swallowed.
H227  Combustible liquid.

Classification according to Directive 67/548/EEC or Directive 1999/45/EC

Toxic

May cause cancer. Toxic by inhalation, in contact with skin and if swallowed.

Corrosive

Causes burns.

Harmful

Limited evidence of a carcinogenic effect. Harmful: danger of serious damage to health by prolonged exposure through inhalation, in contact with skin and if swallowed. Possible risk of irreversible effects.

Highly flammable

Highly flammable.

Information concerning particular hazards for human and environment:
The product has to be labelled due to the calculation procedure of international guidelines.

Classification system:
The classification was made according to the latest editions of international substances lists, and expanded upon from company and literature data.

Label elements

Labelling according to EU guidelines:
The product has been classified and marked in accordance with directives on hazardous materials.

Code letter and hazard designation of product:

Toxic

Highly flammable

Hazard-determining components of labelling:
phenol
chloroform
quinoline

Risk phrases:
May cause cancer.
Highly flammable.
Also toxic by inhalation, in contact with skin and if swallowed.
Causes burns.
Limited evidence of a carcinogenic effect.
Also harmful: danger of serious damage to health by prolonged exposure through inhalation, in contact with skin and if swallowed.
Possible risk of irreversible effects.
Trade name: Biophenol/Chloroform/Isoamyl alcohol, 25:24:1, stabilized

- **Safety phrases:**
  - Avoid exposure - obtain special instructions before use.
  - Keep locked up and out of the reach of children.
  - In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
  - Do not empty into drains, dispose of this material and its container at hazardous or special waste collection point.
  - Wear suitable protective clothing, gloves and eyewear protection.
  - In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).
- **Classification system:**
  - **NFPA ratings (scale 0 - 4):**
    - Health = 3
    - Fire = 2
    - Reactivity = 0
  - **HMIS-ratings (scale 0 - 4):**
    - Health = *3
    - Fire = 2
    - Reactivity = 0

### 4 First aid measures

- **General information:**
  - Immediately remove any clothing soiled by the product.
  - Symptoms of poisoning may even occur after several hours; therefore medical observation for at least 48 hours after the accident.
  - Remove breathing apparatus only after contaminated clothing have been completely removed.
  - In case of irregular breathing or respiratory arrest provide artificial respiration.
- **After inhalation:**
  - Supply fresh air or oxygen; call for doctor.
  - In case of unconsciousness place patient stably in side position for transportation.
- **After skin contact:**
  - Immediately wash with water and soap and rinse thoroughly.
- **After eye contact:**
  - Rinse opened eye for several minutes under running water. Then consult a doctor.
- **After swallowing:**
  - Do not induce vomiting; immediately call for medical help.
  - Drink copious amounts of water and provide fresh air. Immediately call a doctor.

### 5 Firefighting measures

- **Suitable extinguishing agents:** CO2, sand, extinguishing powder. Do not use water.
- **For safety reasons unsuitable extinguishing agents:** Water with full jet
- **Special hazards arising from the substance or mixture:** No further relevant information available.
- **Protective equipment:** Mouth respiratory protective device.

### 6 Accidental release measures

- **Personal precautions, protective equipment and emergency procedures**
  - Wear protective equipment. Keep unprotected persons away.
- **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 enter sewers/surface or ground water.
34.0.2

· Methods and material for containment and cleaning up:
  Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).
  Use neutralizing agent.
  Dispose contaminated material as waste according to item 13.
  Ensure adequate ventilation.
  Do not flush with water or aqueous cleansing agents

· Reference to other sections
  See Section 7 for information on safe handling.
  See Section 8 for information on personal protection equipment.
  See Section 13 for disposal information.

7 Handling and storage

· Precautions for safe handling
  Ensure good ventilation/exhaustion at the workplace.
  Open and handle receptacle with care.
  Prevent formation of aerosols.

· Information about protection against explosions and fires:
  Keep ignition sources away - Do not smoke.
  Protect against electrostatic charges.
  Keep respiratory protective device available.

· Storage:
  · Requirements to be met by storerooms and receptacles: Store in a cool location.
  · Information about storage in one common storage facility: Not required.
  · Further information about storage conditions:
    Keep receptacle tightly sealed.
    Store in cool, dry conditions in well sealed receptacles.

· 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.

· Components with limit values that require monitoring at the workplace:

<table>
<thead>
<tr>
<th>Commodity</th>
<th>PEL</th>
<th>REL</th>
<th>TLV</th>
</tr>
</thead>
<tbody>
<tr>
<td>108-95-2 phenol</td>
<td>19 mg/m³, 5 ppm</td>
<td>Short-term value: C60* mg/m³, C 15.6* ppm Long-term value: 19 mg/m³, 5 ppm</td>
<td>19 mg/m³, 5 ppm Skin; BEI</td>
</tr>
<tr>
<td>67-66-3 chloroform</td>
<td>Short-term value: 9.78* mg/m³, 2* ppm *60-min; See Pocket Guide App. A</td>
<td>49 mg/m³, 10 ppm</td>
<td></td>
</tr>
<tr>
<td>123-51-3 3-methylbutan-1-ol</td>
<td>360 mg/m³, 100 ppm primary and secondary</td>
<td>Short-term value: 450 mg/m³, 125 ppm Long-term value: 360 mg/m³, 100 ppm primary and secondary</td>
<td>Short-term value: 452 mg/m³, 125 ppm Long-term value: 361 mg/m³, 100 ppm</td>
</tr>
</tbody>
</table>

(Contd. on page 5)
Trade name: Biophenol/Chloroform/Isoamyl alcohol, 25:24:1, stabilized

91-22-5 quinoline
WEEL 0.001 ppm
Skin

· Additional information: The lists that were valid during the creation were used as basis.
· Personal protective equipment:
  · General protective and hygienic measures:
    Keep away from foodstuffs, beverages and feed.
    Immediately remove all soiled and contaminated clothing.
    Wash hands before breaks and at the end of work.
    Store protective clothing separately.
    Avoid contact with the eyes and skin.
  · Breathing equipment:
    In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use respiratory protective device that is independent of circulating air.
· Protection of hands:
  Protective gloves
  The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.
  Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the chemical mixture.
  Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation
· 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:
  Tightly sealed goggles

9 Physical and chemical properties

· General Information
  · Appearance:
    · Form: Liquid
    · Color: Light orange color
    · Odor: Characteristic
    · Odour threshold: Not determined.
  · pH-value: Not determined.
· Change in condition
  · Melting point/Melting range: Undetermined.
  · Boiling point/Boiling range: Undetermined.
· Flash point: 79°C (174 °F)
· Flammability (solid, gaseous): Not applicable.
## 34.0.2 

- **Ignition temperature:** 595°C (1103 °F)
- **Decomposition temperature:** Not determined.
- **Auto igniting:** Product is not selfigniting.
- **Danger of explosion:** Not determined.
- **Explosion limits:**
  - Lower: 1.3 Vol %
  - Upper: 9.5 Vol %
- **Vapor pressure at 20°C (68 °F):** 210 hPa (158 mm Hg)
- **Density at 20°C (68 °F):** 1.28 g/cm³ (10.682 lbs/gal)
- **Relative density** Not determined.
- **Vapor density** Not determined.
- **Evaporation rate** Not determined.
- **Solubility in / Miscibility with Water:** Not miscible or difficult to mix.
- **Segregation coefficient (n-octanol/water):** Not determined.
- **Viscosity:**
  - Dynamic: Not determined.
  - Kinematic: Not determined.
- **Solvent content:**
  - Organic solvents: 50.1 %
  - VOC content: 50.1 %
  - Total: 665.6 g/l / 5.55 lb/gl
- **Solids content:** 49.9 %
- **Other information** No further relevant information available.

## 10 Stability and reactivity

- **Thermal decomposition / conditions to be avoided:** No decomposition if used according to specifications.
- **Incompatible materials:** No further relevant information available.
- **Hazardous decomposition products:** No dangerous decomposition products known.

## 11 Toxicological information

### 108-95-2 phenol

- **Acute toxicity:**
  - **LD/LC50 values that are relevant for classification:**
    - Oral LD50 317 mg/kg (rat)
    - Dermal LD50 850 mg/kg (rabbit)

### 67-66-3 chloroform

- **Acute toxicity:**
  - Oral LD50 908 mg/kg (rat)
  - Dermal LD50 75 mg/kg (rat)

### 91-22-5 quinoline

- **Acute toxicity:**
  - Oral LD50 331 mg/kg (rat)
  - Dermal LD50 540 mg/kg (rabbit)
- **Primary irritant effect:**
  - **on the skin:** Caustic effect on skin and mucous membranes.
  - **on the eye:** Strong caustic effect.
Trade name: Biophenol/Chloroform/Isoamyl alcohol, 25:24:1, stabilized

- Sensitization: No sensitizing effects known.
- Additional toxicological information:
  The product shows the following dangers according to internally approved calculation methods for preparations:
  Toxic
  Corrosive
  Swallowing will lead to a strong caustic effect on mouth and throat and to the danger of perforation of esophagus and stomach.
  Carcinogenic.

12 Ecological information

- Aquatic toxicity: No further relevant information available.
- Persistence and degradability No further relevant information available.
- Bioaccumulative potential: 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.
  Must not reach bodies of water or drainage ditch undiluted or unneutralized.
  Danger to drinking water if even extremely small quantities leak into the ground.

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
  UN1992
- UN proper shipping name
  DOT, IMDG, IATA
  FLAMMABLE LIQUID, TOXIC, N.O.S. (CHLOROFORM, PHENOL)
- ADR
  1992 FLAMMABLE LIQUID, TOXIC, N.O.S. (CHLOROFORM, PHENOL)
- Transport hazard class(es)
- DOT, IMDG, IATA
  Class 3 Flammable liquids.
  Label 3+6.1

(Contd. on page 8)
### 34.0.2 ADR

#### Class
3 (FT1) Flammable liquids

#### Packing group
3+6.1

#### DOT, ADR, IMDG, IATA
II

#### Environmental hazards:
No

#### Marine pollutant:
No

#### Special precautions for user
Warning: Flammable liquids

#### Danger code (Kemler):
336

#### EMS Number:
F-E,S-D

#### Segregation groups
Liquid halogenated hydrocarbons

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

#### UN "Model Regulation":
UN1992, FLAMMABLE LIQUID, TOXIC, N.O.S. (CHLOROFORM, PHENOL), 3 (6.1), II

### 15 Regulatory information

#### Sara

- **Section 355 (extremely hazardous substances):**
  - 108-95-2 phenol
  - 67-66-3 chloroform

- **Section 313 (Specific toxic chemical listings):**
  - 108-95-2 phenol
  - 67-66-3 chloroform
  - 91-22-5 quinoline

#### TSCA (Toxic Substances Control Act):
All ingredients are listed.

#### Proposition 65

- **Chemicals known to cause cancer:**
  - 67-66-3 chloroform
  - 91-22-5 quinoline

- **Chemicals known to cause reproductive toxicity for females:**
  - None of the ingredients is listed.

- **Chemicals known to cause reproductive toxicity for males:**
  - None of the ingredients is listed.

- **Chemicals known to cause developmental toxicity:**
  - 67-66-3 chloroform

#### Carcinogenic categories

- **EPA (Environmental Protection Agency)**
  - 108-95-2 phenol
  - 67-66-3 chloroform
**Trade name:** Biophenol/Chloroform/Isoamyl alcohol, 25:24:1, stabilized

<table>
<thead>
<tr>
<th>CAS Number</th>
<th>Substance</th>
<th>IARC</th>
<th>NTP</th>
<th>TLV</th>
<th>NIOSH-Ca</th>
<th>OSHA-Ca</th>
</tr>
</thead>
<tbody>
<tr>
<td>91-22-5</td>
<td>quinoline</td>
<td>L</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>108-95-2</td>
<td>phenol</td>
<td>3</td>
<td></td>
<td>A4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>67-66-3</td>
<td>chloroform</td>
<td>2B</td>
<td>R</td>
<td>A3</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Hazard symbols:
- Toxic
- Highly flammable

### Hazard-determining components of labelling:
- phenol
- chloroform
- quinoline

### Risk phrases:
- May cause cancer.
- Highly flammable.
- Also toxic by inhalation, in contact with skin and if swallowed.
- Causes burns.
- Limited evidence of a carcinogenic effect.
- Also harmful: danger of serious damage to health by prolonged exposure through inhalation, in contact with skin and if swallowed.
- Possible risk of irreversible effects.

### Safety phrases:
- Avoid exposure - obtain special instructions before use.
- Keep locked up and out of the reach of children.
- In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
- Do not empty into drains, dispose of this material and its container at hazardous or special waste collection point.
- Wear suitable protective clothing, gloves and eye/face protection.
- In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).
- In case of accident by inhalation: remove casualty to fresh air and keep at rest.

### National regulations:
Workers are not allowed to be exposed to the hazardous carcinogenic materials contained in this preparation. Exceptions can be made by the authorities in certain cases.
16 Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

- **Department issuing MSDS:** Product safety department
- **Contact:** Product safety department
- **Abbreviations and acronyms:**
  - ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)
  - RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)
  - IMDG: International Maritime Code for Dangerous Goods
  - IATA: International Air Transport Association
  - ICAO: International Civil Aviation Organization
  - ACGIH: American Conference of Governmental Industrial Hygienists
  - NFPA: National Fire Protection Association (USA)
  - HMIS: Hazardous Materials Identification System (USA)
  - VOC: Volatile Organic Compounds (USA, EU)
  - LC50: Lethal concentration, 50 percent
  - LD50: Lethal dose, 50 percent

USA