# Bill of materials

<table>
<thead>
<tr>
<th>Name of substance</th>
<th>Identifier</th>
<th>Classification acc. to GHS</th>
<th>Pictograms</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>MP Conjugate RP System Insert</td>
<td>Internal code ASY2040</td>
<td></td>
<td></td>
<td>2 – 14</td>
</tr>
<tr>
<td>MP Substrate RP System Insert</td>
<td>Internal code ASY2042</td>
<td>Eye Irrit. 2 / H319</td>
<td></td>
<td>15 – 26</td>
</tr>
<tr>
<td>DNA Prep Pack Riboprinter System</td>
<td>Internal code ASY2028</td>
<td></td>
<td></td>
<td>27 – 38</td>
</tr>
<tr>
<td>MP PROBE, FILLED INSERT (RIBOPRINTER SYSTEM)</td>
<td>Internal code ASY2041</td>
<td></td>
<td></td>
<td>39 – 49</td>
</tr>
</tbody>
</table>
SECTION 1: Identification

1.1 Product identifier
   Trade name                  MP Conjugate RP System Insert
   Product code(s)             ASY2040

1.2 Relevant identified uses of the substance or mixture and uses advised against
   Relevant identified uses   Laboratory and analytical use

1.3 Details of the supplier of the safety data sheet
   Hygiena USA
   941 Avenida Acaso
   Camarillo California 93012
   United States
   Telephone: +1 (805) 388-8007
   Telefax: +1 (805) 388-5531
   e-mail: info@hygiena.com
   e-mail (competent person)   info@hygiena.com

1.4 Emergency telephone number
   Emergency information service 1-888-494-4362
   This number is only available during the following office hours: Mon-Fri 08:00 AM - 05:00 PM

SECTION 2: Hazard(s) identification

2.1 Classification of the substance or mixture
   Classification acc. to OSHA "Hazard Communication Standard" (29 CFR 1910.1200)
   This mixture does not meet the criteria for classification.

2.2 Label elements
   Labelling acc. to OSHA "Hazard Communication Standard" (29 CFR 1910.1200)
   not required

2.3 Other hazards
   of no significance

SECTION 3: Composition/information on ingredients

3.1 Substances
   Not relevant (mixture)

3.2 Mixtures
### Description of the mixture

<table>
<thead>
<tr>
<th>Name of substance</th>
<th>Identifier</th>
<th>Wt%</th>
<th>Classification acc. to GHS</th>
<th>Pictograms</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pyrogen Free Water</td>
<td>CAS No 7732-18-5</td>
<td>10 - &lt;25</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sodium phosphate dibasic</td>
<td>CAS No 7758-79-4</td>
<td>5 - &lt;10</td>
<td></td>
<td></td>
</tr>
<tr>
<td>I Block</td>
<td></td>
<td>3 - &lt;5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sodium Chloride</td>
<td>CAS No 7647-14-5</td>
<td>3 - &lt;5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tween 20</td>
<td>CAS No 9005-64-5</td>
<td>3 - &lt;5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sodium phosphate monobasic</td>
<td>CAS No 7758-80-7</td>
<td>1 - &lt;3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Trehalose Dihydrate</td>
<td>CAS No 6138-23-4</td>
<td>&lt; 0.1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tris</td>
<td>CAS No 77-86-1</td>
<td>&lt; 0.1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bovine Serum Albumin</td>
<td>CAS No 9048-46-8</td>
<td>&lt; 0.1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Magnesium Chloride (Anhydrous)</td>
<td>CAS No 7786-30-3</td>
<td>&lt; 0.1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Magnesium Chloride Hexahydrate</td>
<td>CAS No 7791-18-6</td>
<td>&lt; 0.1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Alkaline Phosphatase</td>
<td>CAS No 9001-78-9</td>
<td>&lt; 0.1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>zinc chloride</td>
<td>CAS No 7646-85-7</td>
<td>&lt; 0.1</td>
<td>Acute Tox. 4 / H302</td>
<td>STOT SE 3 / H335</td>
</tr>
<tr>
<td>Anti DNA Antibody</td>
<td></td>
<td>&lt; 0.1</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

For full text of abbreviations: see SECTION 16.

### SECTION 4: First-aid measures

#### 4.1 Description of first-aid measures

**General notes**

Do not leave affected person unattended. Remove victim out of the danger area. Keep affected person warm, still and covered. Take off immediately all contaminated clothing. In all cases of doubt, or when symptoms persist, seek medical advice. In case of unconsciousness place person in the recovery position. Never give anything by mouth.

**Following inhalation**

If breathing is irregular or stopped, immediately seek medical assistance and start first aid actions. Provide fresh air.

**Following skin contact**

Wash with plenty of soap and water.
Following eye contact
   Remove contact lenses, if present and easy to do. Continue rinsing. Irrigate copiously with clean, fresh water for at least 10 minutes, holding the eyelids apart.

Following ingestion
   Rinse mouth with water (only if the person is conscious). Do NOT induce vomiting.

4.2 Most important symptoms and effects, both acute and delayed
   Symptoms and effects are not known to date.

4.3 Indication of any immediate medical attention and special treatment needed
   none

SECTION 5: Fire-fighting measures

5.1 Extinguishing media
   Suitable extinguishing media
   Water spray, BC-powder, Carbon dioxide (CO2)
   Unsuitable extinguishing media
   Water jet

5.2 Special hazards arising from the substance or mixture
   Hazardous combustion products
   Carbon monoxide (CO), Carbon dioxide (CO2)

5.3 Advice for firefighters
   In case of fire and/or explosion do not breathe fumes. Coordinate firefighting measures to the fire surroundings. Do not allow firefighting water to enter drains or water courses. Collect contaminated firefighting water separately. Fight fire with normal precautions from a reasonable distance.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures
   For non-emergency personnel
   Remove persons to safety.
   For emergency responders
   Wear breathing apparatus if exposed to vapors/dust/aerosols/gases.

6.2 Environmental precautions
   Keep away from drains, surface and ground water. Retain contaminated washing water and dispose of it.

6.3 Methods and material for containment and cleaning up
   Advice on how to contain a spill
   Covering of drains
   Advice on how to clean up a spill
   Wipe up with absorbent material (e.g. cloth, fleece). Collect spillage: sawdust, kieselgur (diatomite), sand, universal binder.
Appropriate containment techniques
- Use of adsorbent materials.

Other information relating to spills and releases
- Place in appropriate containers for disposal. Ventilate affected area.

6.4 Reference to other sections
- Hazardous combustion products: see section 5.
- Personal protective equipment: see section 8.
- Incompatible materials: see section 10.
- Disposal considerations: see section 13.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Recommendations
- Measures to prevent fire as well as aerosol and dust generation
  - Use local and general ventilation. Use only in well-ventilated areas.

Advice on general occupational hygiene
- Wash hands after use. Do not eat, drink and smoke in work areas. Remove contaminated clothing and protective equipment before entering eating areas. Never keep food or drink in the vicinity of chemicals. Never place chemicals in containers that are normally used for food or drink. Keep away from food, drink and animal feedingstuffs.

7.2 Conditions for safe storage, including any incompatibilities

Control of the effects
- Protect against external exposure, such as frost

7.3 Specific end use(s)

See section 16 for a general overview.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

<table>
<thead>
<tr>
<th>Country</th>
<th>Name of agent</th>
<th>CAS No</th>
<th>Identifier</th>
<th>TWA [ppm]</th>
<th>TWA [mg/m³]</th>
<th>STEL [ppm]</th>
<th>STEL [mg/m³]</th>
<th>Ceiling-C [ppm]</th>
<th>Ceiling-C [mg/m³]</th>
<th>Notation</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>US</td>
<td>zinc chloride 7646-85-7</td>
<td>PEL (CA)</td>
<td>1</td>
<td>1</td>
<td>2</td>
<td>2</td>
<td>fume</td>
<td></td>
<td></td>
<td>Cal/OSHA PEL</td>
<td></td>
</tr>
<tr>
<td>US</td>
<td>zinc chloride 7646-85-7</td>
<td>REL</td>
<td>1 (10 h)</td>
<td>2</td>
<td>fume</td>
<td></td>
<td>NIOSH REL</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>US</td>
<td>zinc chloride 7646-85-7</td>
<td>TLV®</td>
<td>1</td>
<td>2</td>
<td>fume</td>
<td></td>
<td>ACGIH® 2021</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>US</td>
<td>zinc chloride 7646-85-7</td>
<td>PEL</td>
<td>1</td>
<td></td>
<td>fume</td>
<td></td>
<td>29 CFR 1910.100</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Notation
- Ceiling-C: ceiling value is a limit value above which exposure should not occur
### Relevant DNELs of components of the mixture

<table>
<thead>
<tr>
<th>Name of substance</th>
<th>CAS No</th>
<th>Endpoint</th>
<th>Threshold level</th>
<th>Protection goal, route of exposure</th>
<th>Used in</th>
<th>Exposure time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Zinc chloride</td>
<td>7646-85-7</td>
<td>DNEL</td>
<td>1 mg/m³</td>
<td>Human, inhalatory</td>
<td>Worker (industry)</td>
<td>Chronic - systemic effects</td>
</tr>
<tr>
<td>Zinc chloride</td>
<td>7646-85-7</td>
<td>DNEL</td>
<td>8.3 mg/kg bw/day</td>
<td>Human, dermal</td>
<td>Worker (industry)</td>
<td>Chronic - systemic effects</td>
</tr>
</tbody>
</table>

### Relevant PNECs of components of the mixture

<table>
<thead>
<tr>
<th>Name of substance</th>
<th>CAS No</th>
<th>Endpoint</th>
<th>Threshold level</th>
<th>Organism</th>
<th>Environmental compartment</th>
<th>Exposure time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tween 20</td>
<td>9005-64-5</td>
<td>PNEC</td>
<td>0.2 mg/l</td>
<td>Aquatic organisms</td>
<td>Freshwater</td>
<td>Short-term (single instance)</td>
</tr>
<tr>
<td>Tween 20</td>
<td>9005-64-5</td>
<td>PNEC</td>
<td>0.02 mg/l</td>
<td>Aquatic organisms</td>
<td>Marine water</td>
<td>Short-term (single instance)</td>
</tr>
<tr>
<td>Tween 20</td>
<td>9005-64-5</td>
<td>PNEC</td>
<td>1.141 mg/kg</td>
<td>Aquatic organisms</td>
<td>Freshwater sediment</td>
<td>Short-term (single instance)</td>
</tr>
<tr>
<td>Tween 20</td>
<td>9005-64-5</td>
<td>PNEC</td>
<td>1,000 mg/kg</td>
<td>Aquatic organisms</td>
<td>Marine sediment</td>
<td>Short-term (single instance)</td>
</tr>
<tr>
<td>Magnesium Chloride</td>
<td>7786-30-3</td>
<td>PNEC</td>
<td>3.21 mg/l</td>
<td>Aquatic organisms</td>
<td>Freshwater</td>
<td>Short-term (single instance)</td>
</tr>
<tr>
<td>Magnesium Chloride</td>
<td>7786-30-3</td>
<td>PNEC</td>
<td>0.32 mg/l</td>
<td>Aquatic organisms</td>
<td>Marine water</td>
<td>Short-term (single instance)</td>
</tr>
<tr>
<td>Magnesium Chloride</td>
<td>7786-30-3</td>
<td>PNEC</td>
<td>90 mg/l</td>
<td>Aquatic organisms</td>
<td>Sewage treatment plant (STP)</td>
<td>Short-term (single instance)</td>
</tr>
<tr>
<td>Magnesium Chloride</td>
<td>7786-30-3</td>
<td>PNEC</td>
<td>288.9 mg/kg</td>
<td>Aquatic organisms</td>
<td>Freshwater sediment</td>
<td>Short-term (single instance)</td>
</tr>
<tr>
<td>Magnesium Chloride</td>
<td>7786-30-3</td>
<td>PNEC</td>
<td>28.89 mg/kg</td>
<td>Aquatic organisms</td>
<td>Marine sediment</td>
<td>Short-term (single instance)</td>
</tr>
<tr>
<td>Magnesium Chloride</td>
<td>7786-30-3</td>
<td>PNEC</td>
<td>662.8 mg/kg</td>
<td>Terrestrial organisms</td>
<td>Soil</td>
<td>Short-term (single instance)</td>
</tr>
<tr>
<td>Magnesium Chloride Hexahydrate</td>
<td>7791-18-6</td>
<td>PNEC</td>
<td>3.21 mg/l</td>
<td>Aquatic organisms</td>
<td>Freshwater</td>
<td>Short-term (single instance)</td>
</tr>
<tr>
<td>Magnesium Chloride Hexahydrate</td>
<td>7791-18-6</td>
<td>PNEC</td>
<td>0.32 mg/l</td>
<td>Aquatic organisms</td>
<td>Marine water</td>
<td>Short-term (single instance)</td>
</tr>
<tr>
<td>Magnesium Chloride Hexahydrate</td>
<td>7791-18-6</td>
<td>PNEC</td>
<td>90 mg/l</td>
<td>Aquatic organisms</td>
<td>Sewage treatment plant (STP)</td>
<td>Short-term (single instance)</td>
</tr>
</tbody>
</table>
### Relevant PNECs of components of the mixture

<table>
<thead>
<tr>
<th>Name of substance</th>
<th>CAS No</th>
<th>Endpoint</th>
<th>Threshold level</th>
<th>Organism</th>
<th>Environmental compartment</th>
<th>Exposure time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Magnesium Chloride Hexahydrate</td>
<td>7791-18-6</td>
<td>PNEC</td>
<td>288.9 mg/kg</td>
<td>aquatic organisms</td>
<td>freshwater sediment</td>
<td>short-term (single instance)</td>
</tr>
<tr>
<td>Magnesium Chloride Hexahydrate</td>
<td>7791-18-6</td>
<td>PNEC</td>
<td>28.89 mg/kg</td>
<td>aquatic organisms</td>
<td>marine sediment</td>
<td>short-term (single instance)</td>
</tr>
<tr>
<td>Magnesium Chloride Hexahydrate</td>
<td>7791-18-6</td>
<td>PNEC</td>
<td>662.8 mg/kg</td>
<td>terrestrial organisms</td>
<td>soil</td>
<td>short-term (single instance)</td>
</tr>
<tr>
<td>Zinc chloride</td>
<td>7646-85-7</td>
<td>PNEC</td>
<td>20.6 µg/l</td>
<td>aquatic organisms</td>
<td>freshwater</td>
<td>short-term (single instance)</td>
</tr>
<tr>
<td>Zinc chloride</td>
<td>7646-85-7</td>
<td>PNEC</td>
<td>6.1 µg/l</td>
<td>aquatic organisms</td>
<td>marine water</td>
<td>short-term (single instance)</td>
</tr>
<tr>
<td>Zinc chloride</td>
<td>7646-85-7</td>
<td>PNEC</td>
<td>100 µg/l</td>
<td>aquatic organisms</td>
<td>sewage treatment plant (STP)</td>
<td>short-term (single instance)</td>
</tr>
<tr>
<td>Zinc chloride</td>
<td>7646-85-7</td>
<td>PNEC</td>
<td>117.8 mg/kg</td>
<td>aquatic organisms</td>
<td>freshwater sediment</td>
<td>short-term (single instance)</td>
</tr>
<tr>
<td>Zinc chloride</td>
<td>7646-85-7</td>
<td>PNEC</td>
<td>56.5 mg/kg</td>
<td>aquatic organisms</td>
<td>marine sediment</td>
<td>short-term (single instance)</td>
</tr>
<tr>
<td>Zinc chloride</td>
<td>7646-85-7</td>
<td>PNEC</td>
<td>35.6 mg/kg</td>
<td>terrestrial organisms</td>
<td>soil</td>
<td>short-term (single instance)</td>
</tr>
</tbody>
</table>

### 8.2 Exposure controls

**Exposure controls**

**Appropriate engineering controls**

General ventilation.

**Individual protection measures (personal protective equipment)**

**Eye/face protection**

- Wear eye/face protection.

**Skin protection**

- **Hand protection**
  
  Wear suitable gloves. Chemical protection gloves are suitable, which are tested according to EN 374. Check leak-tightness/impermeability prior to use. In the case of wanting to use the gloves again, clean them before taking off and air them well. For special purposes, it is recommended to check the resistance to chemicals of the protective gloves mentioned above together with the supplier of these gloves.

- **Other protection measures**
  
  Take recovery periods for skin regeneration. Preventive skin protection (barrier creams/ointments) is recommended. Wash hands thoroughly after handling.

**Respiratory protection**

- In case of inadequate ventilation wear respiratory protection.

**Environmental exposure controls**

- Use appropriate container to avoid environmental contamination. Keep away from drains, surface and ground water.
### SECTION 9: Physical and chemical properties

#### 9.1 Information on basic physical and chemical properties

**Appearance**

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical state</td>
<td>liquid</td>
</tr>
<tr>
<td>Color</td>
<td>not determined</td>
</tr>
<tr>
<td>Particle</td>
<td>not relevant (liquid)</td>
</tr>
<tr>
<td>Odor</td>
<td>characteristic</td>
</tr>
</tbody>
</table>

**Other safety parameters**

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>pH (value)</td>
<td>not determined</td>
</tr>
<tr>
<td>Melting point/freezing point</td>
<td>not determined</td>
</tr>
<tr>
<td>Initial boiling point and boiling range</td>
<td>not determined</td>
</tr>
<tr>
<td>Flash point</td>
<td>not determined</td>
</tr>
<tr>
<td>Evaporation rate</td>
<td>Not determined</td>
</tr>
<tr>
<td>Flammability (solid, gas)</td>
<td>not relevant, (fluid)</td>
</tr>
<tr>
<td>Vapor pressure</td>
<td>not determined</td>
</tr>
<tr>
<td>Density</td>
<td>not determined</td>
</tr>
<tr>
<td>Vapor density</td>
<td>this information is not available</td>
</tr>
<tr>
<td>Relative density</td>
<td>Information on this property is not available</td>
</tr>
<tr>
<td>Solubility(ies)</td>
<td>not determined</td>
</tr>
<tr>
<td>Partition coefficient</td>
<td></td>
</tr>
<tr>
<td>- n-octanol/water (log KOW)</td>
<td>this information is not available</td>
</tr>
<tr>
<td>Auto-ignition temperature</td>
<td>not determined</td>
</tr>
<tr>
<td>Viscosity</td>
<td>not determined</td>
</tr>
<tr>
<td>Explosive properties</td>
<td>none</td>
</tr>
<tr>
<td>Oxidizing properties</td>
<td>none</td>
</tr>
</tbody>
</table>
9.2 Other information

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Solvent content</td>
<td>36.47 %</td>
</tr>
<tr>
<td>Solid content</td>
<td>3.532 %</td>
</tr>
</tbody>
</table>

SECTION 10: Stability and reactivity

10.1 Reactivity

Concerning incompatibility: see below “Conditions to avoid” and “Incompatible materials”.

10.2 Chemical stability

The material is stable under normal ambient and anticipated storage and handling conditions of temperature and pressure.

10.3 Possibility of hazardous reactions

No known hazardous reactions.

10.4 Conditions to avoid

There are no specific conditions known which have to be avoided.

10.5 Incompatible materials

Oxidizers

10.6 Hazardous decomposition products

Reasonably anticipated hazardous decomposition products produced as a result of use, storage, spill and heating are not known. Hazardous combustion products: see section 5.

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Test data are not available for the complete mixture.

Classification procedure

The method for classification of the mixture is based on ingredients of the mixture (additivity formula).

Classification acc. to OSHA "Hazard Communication Standard" (29 CFR 1910.1200)

This mixture does not meet the criteria for classification.

Acute toxicity

Shall not be classified as acutely toxic.

<table>
<thead>
<tr>
<th>Acute toxicity estimate (ATE) of components of the mixture</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name of substance</td>
</tr>
<tr>
<td>-------------------</td>
</tr>
<tr>
<td>zinc chloride</td>
</tr>
</tbody>
</table>

Skin corrosion/irritation

Shall not be classified as corrosive/irritant to skin.
Serious eye damage/eye irritation
   Shall not be classified as seriously damaging to the eye or eye irritant.

Respiratory or skin sensitization
   Shall not be classified as a respiratory or skin sensitizer.

Germ cell mutagenicity
   Shall not be classified as germ cell mutagenic.

Carcinogenicity
   Shall not be classified as carcinogenic.

Reproductive toxicity
   Shall not be classified as a reproductive toxicant.

Specific target organ toxicity - single exposure
   Shall not be classified as a specific target organ toxicant (single exposure).

Specific target organ toxicity - repeated exposure
   Shall not be classified as a specific target organ toxicant (repeated exposure).

Aspiration hazard
   Shall not be classified as presenting an aspiration hazard.

SECTION 12: Ecological information

12.1 Toxicity
   Shall not be classified as hazardous to the aquatic environment.

12.2 Persistence and degradability
   Data are not available.

12.3 Bioaccumulative potential
   Data are not available.

12.4 Mobility in soil
   Data are not available.

12.5 Results of PBT and vPvB assessment
   Data are not available.

12.6 Endocrine disrupting properties
   None of the ingredients are listed.

12.7 Other adverse effects
   Data are not available.
SECTION 13: Disposal considerations

13.1 Waste treatment methods

Sewage disposal-relevant information
Do not empty into drains. Avoid release to the environment. Refer to special instructions/safety data sheets.

Waste treatment of containers/packages
Completely emptied packages can be recycled. Handle contaminated packages in the same way as the substance itself.

Remarks
Please consider the relevant national or regional provisions. Waste shall be separated into the categories that can be handled separately by the local or national waste management facilities.

SECTION 14: Transport information

14.1 UN number
not subject to transport regulations

14.2 UN proper shipping name
not relevant

14.3 Transport hazard class(es)
not assigned

14.4 Packing group
not assigned

14.5 Environmental hazards
non-environmentally hazardous acc. to the dangerous goods regulations

14.6 Special precautions for user
There is no additional information.

14.7 Transport in bulk according to Annex II of MARPOL and the IBC Code
The cargo is not intended to be carried in bulk.

Information for each of the UN Model Regulations

Transport of dangerous goods by road or rail (49 CFR US DOT) - Additional information
Not subject to transport regulations.

International Maritime Dangerous Goods Code (IMDG) - Additional information
Not subject to IMDG.

International Civil Aviation Organization (ICAO-IATA/DGR) - Additional information
Not subject to ICAO-IATA.

SECTION 15: Regulatory information

15.1 Safety, health and environmental regulations specific for the product in question
National regulations (United States)

Superfund Amendment and Reauthorization Act (SARA TITLE III)
- The List of Extremely Hazardous Substances and Their Threshold Planning Quantities (EPCRA Section 302, 304)
  none of the ingredients are listed
- Specific Toxic Chemical Listings (EPCRA Section 313)
  none of the ingredients are listed

**Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA)**
- List of Hazardous Substances and Reportable Quantities (CERCLA section 102a) (40 CFR 302.4)

<table>
<thead>
<tr>
<th>Name of substance</th>
<th>CAS No</th>
<th>Remarks</th>
<th>Statutory code</th>
<th>Final RQ pounds (Kg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>zinc chloride</td>
<td>7646-85-7</td>
<td></td>
<td>1</td>
<td>1000 (454)</td>
</tr>
</tbody>
</table>

**Legend**
T  "1" indicates that the statutory source is section 311(b)(2) of the Clean Water Act

**Clean Air Act**
none of the ingredients are listed

**Right to Know Hazardous Substance List**
- Hazardous Substance List (NJ-RTK)

<table>
<thead>
<tr>
<th>Name of substance</th>
<th>CAS No</th>
<th>Remarks</th>
<th>Classifications</th>
</tr>
</thead>
<tbody>
<tr>
<td>zinc chloride</td>
<td>7646-85-7</td>
<td></td>
<td>CO</td>
</tr>
</tbody>
</table>

**Legend**
CO  Corrosive

**California Environmental Protection Agency (Cal/EPA): Proposition 65 - Safe Drinking Water and Toxic Enforcement Act of 1987**
none of the ingredients are listed

**Industry or sector specific available guidance(s)**

**NPCA-HMIS® III**

<table>
<thead>
<tr>
<th>Category</th>
<th>Rating</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chronic</td>
<td>/</td>
<td>none</td>
</tr>
<tr>
<td>Health</td>
<td>0</td>
<td>no significant risk to health</td>
</tr>
<tr>
<td>Flammability</td>
<td>1</td>
<td>material that must be preheated before ignition can occur</td>
</tr>
<tr>
<td>Physical hazard</td>
<td>0</td>
<td>material that is normally stable, even under fire conditions, and will not react with water, polymerize, decompose, condense, or self-react. Non-explosive</td>
</tr>
<tr>
<td>Personal protection</td>
<td>-</td>
<td></td>
</tr>
</tbody>
</table>

**NFPA® 704**
### Category

<table>
<thead>
<tr>
<th>Category</th>
<th>Degree of hazard</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flammability</td>
<td>1</td>
<td>material that must be preheated before ignition can occur</td>
</tr>
<tr>
<td>Health</td>
<td>0</td>
<td>material that, under emergency conditions, would offer no hazard beyond that of ordinary combustible material</td>
</tr>
<tr>
<td>Instability</td>
<td>0</td>
<td>material that is normally stable, even under fire conditions</td>
</tr>
</tbody>
</table>

### Special hazard

#### 15.2 Chemical Safety Assessment

Chemical safety assessments for substances in this mixture were not carried out.

### SECTION 16: Other information, including date of preparation or last revision

#### Abbreviations and acronyms

<table>
<thead>
<tr>
<th>Abbr.</th>
<th>Descriptions of used abbreviations</th>
</tr>
</thead>
<tbody>
<tr>
<td>49 CFR US DOT</td>
<td>49 CFR U.S. Department of Transportation</td>
</tr>
<tr>
<td>Acute Tox.</td>
<td>Acute toxicity</td>
</tr>
<tr>
<td>ATE</td>
<td>Acute Toxicity Estimate</td>
</tr>
<tr>
<td>Cal/OSHA PEL</td>
<td>California Division of Occupational Safety and Health (Cal/OSHA): Permissible Exposure Limits (PELs)</td>
</tr>
<tr>
<td>CAS</td>
<td>Chemical Abstracts Service (service that maintains the most comprehensive list of chemical substances)</td>
</tr>
<tr>
<td>Ceiling-C</td>
<td>Ceiling value</td>
</tr>
<tr>
<td>DGR</td>
<td>Dangerous Goods Regulations (see IATA/DGR)</td>
</tr>
<tr>
<td>DNEL</td>
<td>Derived No-Effect Level</td>
</tr>
<tr>
<td>GHS</td>
<td>“Globally Harmonized System of Classification and Labelling of Chemicals” developed by the United Nations</td>
</tr>
<tr>
<td>IATA</td>
<td>International Air Transport Association</td>
</tr>
<tr>
<td>IATA/DGR</td>
<td>Dangerous Goods Regulations (DGR) for the air transport (IATA)</td>
</tr>
<tr>
<td>ICAO</td>
<td>International Civil Aviation Organization</td>
</tr>
<tr>
<td>IMDG</td>
<td>International Maritime Dangerous Goods Code</td>
</tr>
<tr>
<td>MARPOL</td>
<td>International Convention for the Prevention of Pollution from Ships (abbr. of &quot;Marine Pollutant&quot;)</td>
</tr>
<tr>
<td>NIOSH REL</td>
<td>National Institute for Occupational Safety and Health (NIOSH): Recommended Exposure Limits (RELS)</td>
</tr>
<tr>
<td>OSHA</td>
<td>Occupational Safety and Health Administration (United States)</td>
</tr>
</tbody>
</table>
Abbr. | Descriptions of used abbreviations
--- | ---
PBT | Persistent, Bioaccumulative and Toxic
PEL | Permissible exposure limit
PNEC | Predicted No-Effect Concentration
ppm | Parts per million
RTECS | Registry of Toxic Effects of Chemical Substances (database of NIOSH with toxicological information)
Skin Corr. | Corrosive to skin
Skin Irrit. | Irritant to skin
STEL | Short-term exposure limit
STOT SE | Specific target organ toxicity - single exposure
TLV® | Threshold Limit Values
TWA | Time-weighted average
vPvB | Very Persistent and very Bioaccumulative

Key literature references and sources for data
Dangerous Goods Regulations (DGR) for the air transport (IATA).

Classification procedure
Physical and chemical properties: The classification is based on tested mixture.
Health hazards, Environmental hazards: The method for classification of the mixture is based on ingredients of the mixture (additivity formula).

List of relevant phrases (code and full text as stated in section 2 and 3)

| Code | Text |
--- | ---|
H302 | Harmful if swallowed. |
H314 | Causes severe skin burns and eye damage. |
H335 | May cause respiratory irritation. |

Disclaimer
This information is based upon the present state of our knowledge. This SDS has been compiled and is solely intended for this product.
SECTION 1: Identification

1.1 Product identifier
- Trade name: MP Substrate RP System Insert
- Product code(s): ASY2042

1.2 Relevant identified uses of the substance or mixture and uses advised against
- Relevant identified uses: Laboratory and analytical use

1.3 Details of the supplier of the safety data sheet
- Hygiena USA
- 941 Avenida Acaso
- Camarillo California 93012
- United States
- Telephone: +1 (805) 388-8007
- Telefax: +1 (805) 388-5531
- e-mail: info@hygiena.com
- e-mail (competent person): info@hygiena.com

1.4 Emergency telephone number
- Emergency information service: 1-888-494-4362
  This number is only available during the following office hours: Mon-Fri 08:00 AM - 05:00 PM

SECTION 2: Hazard(s) identification

2.1 Classification of the substance or mixture
- Classification acc. to OSHA "Hazard Communication Standard" (29 CFR 1910.1200)

<table>
<thead>
<tr>
<th>Section</th>
<th>Hazard class</th>
<th>Category</th>
<th>Hazard class and category</th>
<th>Hazard statement</th>
</tr>
</thead>
<tbody>
<tr>
<td>A.3</td>
<td>serious eye damage/eye irritation</td>
<td>2</td>
<td>Eye Irr. 2</td>
<td>H319</td>
</tr>
</tbody>
</table>

For full text of abbreviations: see SECTION 16.

2.2 Label elements
  - Signal word: warning
  - Pictograms: GHS07
    ![Exclamation Mark]
  - Hazard statements: H319 Causes serious eye irritation.
Precautionary statements

P280 Wear eye protection/face protection.
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 persists: Get medical advice/attention.

2.3 Other hazards

Hazards not otherwise classified
May be harmful if swallowed (GHS category 5: acutely toxic - oral).

SECTION 3: Composition/information on ingredients

3.1 Substances
Not relevant (mixture)

3.2 Mixtures

Description of the mixture

<table>
<thead>
<tr>
<th>Name of substance</th>
<th>Identifier</th>
<th>Wt%</th>
<th>Classification acc. to GHS</th>
<th>Pictograms</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sodium bicarbonate</td>
<td>CAS No 144-55-8</td>
<td>50 – &lt;75</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sodium Carbonate, Anhydrous</td>
<td>CAS No 497-19-8</td>
<td>10 – &lt;25</td>
<td>Eye Irrit. 2 / H319</td>
<td><img src="image" alt="Eye Irrit. 2 / H319" /></td>
</tr>
<tr>
<td>Magnesium Acetate Tetrahydrate</td>
<td>CAS No 16674-78-5</td>
<td>3 – &lt;5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PPD</td>
<td>CAS No 122341-56-4</td>
<td>1 – &lt;3</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

For full text of abbreviations: see SECTION 16.

SECTION 4: First-aid measures

4.1 Description of first-aid measures

General notes
Do not leave affected person unattended. Remove victim out of the danger area. Keep affected person warm, still and covered. Take off immediately all contaminated clothing. In all cases of doubt, or when symptoms persist, seek medical advice. In case of unconsciousness place person in the recovery position. Never give anything by mouth.

Following inhalation
If breathing is irregular or stopped, immediately seek medical assistance and start first aid actions. Provide fresh air.

Following skin contact
Rinse skin with water/shower.

Following eye contact
Remove contact lenses, if present and easy to do. Continue rinsing. Irrigate copiously with clean, fresh water for at least 10 minutes, holding the eyelids apart.

Following ingestion
Rinse mouth with water (only if the person is conscious). Do NOT induce vomiting.
4.2 **Most important symptoms and effects, both acute and delayed**

Symptoms and effects are not known to date.

4.3 **Indication of any immediate medical attention and special treatment needed**

none

### SECTION 5: Fire-fighting measures

5.1 **Extinguishing media**

Suitable extinguishing media

- Water, Foam, ABC-powder

Unsuitable extinguishing media

- Water jet

5.2 **Special hazards arising from the substance or mixture**

Deposited combustible dust has considerable explosion potential.

Hazardous combustion products

- Carbon monoxide (CO), Carbon dioxide (CO2)

5.3 **Advice for firefighters**

In case of fire and/or explosion do not breathe fumes. Coordinate firefighting measures to the fire surroundings. Do not allow firefighting water to enter drains or water courses. Collect contaminated firefighting water separately. Fight fire with normal precautions from a reasonable distance.

### SECTION 6: Accidental release measures

6.1 **Personal precautions, protective equipment and emergency procedures**

For non-emergency personnel

- Remove persons to safety.

For emergency responders

- Wear breathing apparatus if exposed to vapors/dust/aerosols/gases.

6.2 **Environmental precautions**

- Keep away from drains, surface and ground water. Retain contaminated washing water and dispose of it.

6.3 **Methods and material for containment and cleaning up**

Advice on how to contain a spill

- Covering of drains, Take up mechanically

Advice on how to clean up a spill

- Take up mechanically.

Other information relating to spills and releases

- Place in appropriate containers for disposal. Ventilate affected area.

6.4 **Reference to other sections**

- Hazardous combustion products: see section 5.
- Personal protective equipment: see section 8.
- Incompatible materials: see section 10.
- Disposal considerations: see section 13.
SECTION 7: Handling and storage

7.1 Precautions for safe handling

**Recommendations**

- Measures to prevent fire as well as aerosol and dust generation
  
  Use local and general ventilation. Take precautionary measures against static discharge. Use only in well-ventilated areas. Ground/bond container and receiving equipment.

- Specific notes/details
  
  Dust deposits may accumulate on all deposition surfaces in a technical room. The product in the delivered form is not dust explosion capable; the enrichment of fine dust however leads to the danger of dust explosion.

**Advice on general occupational hygiene**

Wash hands after use. Do not eat, drink and smoke in work areas. Remove contaminated clothing and protective equipment before entering eating areas. Never keep food or drink in the vicinity of chemicals. Never place chemicals in containers that are normally used for food or drink. Keep away from food, drink and animal feedingstuffs.

7.2 Conditions for safe storage, including any incompatibilities

**Managing of associated risks**

- Explosive atmospheres
  
  Removal of dust deposits.

- Ventilation requirements
  
  Use local and general ventilation.

7.3 Specific end use(s)

See section 16 for a general overview.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

**Occupational exposure limit values (Workplace Exposure Limits)**

<table>
<thead>
<tr>
<th>Country</th>
<th>Name of agent</th>
<th>CAS No</th>
<th>Identifier</th>
<th>TWA [ppm]</th>
<th>TWA [mg/m³]</th>
<th>STEL [ppm]</th>
<th>STEL [mg/m³]</th>
<th>Ceiling-C [ppm]</th>
<th>Ceiling-C [mg/m³]</th>
<th>Notation</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>US</td>
<td>particulates not otherwise classified</td>
<td>REL</td>
<td>REL</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>appx-D</td>
</tr>
<tr>
<td>US</td>
<td>particulates not otherwise classified (PNOC)</td>
<td>PEL</td>
<td>1,766</td>
<td>15</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>9, dust</td>
<td>29 CFR 1910.1000</td>
</tr>
<tr>
<td>US</td>
<td>particulates not otherwise classified (PNOC)</td>
<td>PEL</td>
<td>529.5</td>
<td>5</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>partml, r, dust</td>
<td>29 CFR 1910.1000</td>
</tr>
<tr>
<td>US</td>
<td>Particulates not otherwise regulated</td>
<td>PEL (CA)</td>
<td></td>
<td>10</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>dust</td>
<td>Cal/ OSHA PEL</td>
</tr>
<tr>
<td>US</td>
<td>Particulates not otherwise regulated</td>
<td>PEL (CA)</td>
<td></td>
<td>5</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>r</td>
<td>Cal/ OSHA PEL</td>
</tr>
</tbody>
</table>
8.2 Exposure controls

Appropriate engineering controls

- General ventilation.

Individual protection measures (personal protective equipment)

Eye/face protection

- Wear eye/face protection.

Skin protection

- Hand protection
  - Wear protective gloves.

- Other protection measures
  - Take recovery periods for skin regeneration. Preventive skin protection (barrier creams/ointments) is recommended. Wash hands thoroughly after handling.

Respiratory protection

- Particulate filter device (EN 143).

Environmental exposure controls

- Use appropriate container to avoid environmental contamination. Keep away from drains, surface and ground water.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Appearance

<table>
<thead>
<tr>
<th>Physical state</th>
<th>solid</th>
</tr>
</thead>
<tbody>
<tr>
<td>Color</td>
<td>not determined</td>
</tr>
<tr>
<td>Odor</td>
<td>characteristic</td>
</tr>
</tbody>
</table>

Other safety parameters
<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>pH (value)</td>
<td>not applicable</td>
</tr>
<tr>
<td>Melting point/freezing point</td>
<td>not determined</td>
</tr>
<tr>
<td>Initial boiling point and boiling range</td>
<td>not determined</td>
</tr>
<tr>
<td>Flash point</td>
<td>not applicable</td>
</tr>
<tr>
<td>Evaporation rate</td>
<td>Not determined</td>
</tr>
<tr>
<td>Flammability (solid, gas)</td>
<td>this material is combustible, but will not ignite readily</td>
</tr>
<tr>
<td>Vapor pressure</td>
<td>66.9 Pa at 20 °C</td>
</tr>
<tr>
<td>Density</td>
<td>not determined</td>
</tr>
<tr>
<td>Vapor density</td>
<td>this information is not available</td>
</tr>
<tr>
<td>Relative density</td>
<td>Information on this property is not available</td>
</tr>
<tr>
<td>Solubility(ies)</td>
<td>not determined</td>
</tr>
<tr>
<td>Partition coefficient</td>
<td></td>
</tr>
<tr>
<td>- n-octanol/water (log KOW)</td>
<td>this information is not available</td>
</tr>
<tr>
<td>Auto-ignition temperature</td>
<td>not determined</td>
</tr>
<tr>
<td>Viscosity</td>
<td>not relevant (solid matter)</td>
</tr>
<tr>
<td>Explosive properties</td>
<td>none</td>
</tr>
<tr>
<td>Oxidizing properties</td>
<td>none</td>
</tr>
</tbody>
</table>

9.2 **Other information**

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Solvent content</td>
<td>7.4 %</td>
</tr>
<tr>
<td>Solid content</td>
<td>92.6 %</td>
</tr>
</tbody>
</table>
SECTION 10: Stability and reactivity

10.1 Reactivity
Concerning incompatibility: see below "Conditions to avoid" and "Incompatible materials".

10.2 Chemical stability
See below "Conditions to avoid".

10.3 Possibility of hazardous reactions
No known hazardous reactions.

10.4 Conditions to avoid
There are no specific conditions known which have to be avoided.

Hints to prevent fire or explosion
The product in the delivered form is not dust explosion capable; the enrichment of fine dust however leads to the danger of dust explosion.

10.5 Incompatible materials
Oxidizers

10.6 Hazardous decomposition products
Reasonably anticipated hazardous decomposition products produced as a result of use, storage, spill and heating are not known. Hazardous combustion products: see section 5.

SECTION 11: Toxicological information

11.1 Information on toxicological effects
Test data are not available for the complete mixture.

Classification procedure
The method for classification of the mixture is based on ingredients of the mixture (additivity formula).

Classification acc. to OSHA "Hazard Communication Standard" (29 CFR 1910.1200)

Acute toxicity
Shall not be classified as acutely toxic.

GHS of the United Nations, annex 4: May be harmful if swallowed.

Skin corrosion/irritation
Shall not be classified as corrosive/irritant to skin.

Serious eye damage/eye irritation
Causes serious eye irritation.

Respiratory or skin sensitization
Shall not be classified as a respiratory or skin sensitizer.

Germ cell mutagenicity
Shall not be classified as germ cell mutagenic.

Carcinogenicity
Shall not be classified as carcinogenic.
Reproductive toxicity  
Shall not be classified as a reproductive toxicant.

Specific target organ toxicity - single exposure  
Shall not be classified as a specific target organ toxicant (single exposure).

Specific target organ toxicity - repeated exposure  
Shall not be classified as a specific target organ toxicant (repeated exposure).

Aspiration hazard  
Shall not be classified as presenting an aspiration hazard.

SECTION 12: Ecological information

12.1 Toxicity  
Shall not be classified as hazardous to the aquatic environment.

12.2 Persistence and degradability  
Data are not available.

12.3 Bioaccumulative potential  
Data are not available.

12.4 Mobility in soil  
Data are not available.

12.5 Results of PBT and vPvB assessment  
Data are not available.

12.6 Endocrine disrupting properties  
None of the ingredients are listed.

12.7 Other adverse effects  
Data are not available.

SECTION 13: Disposal considerations

13.1 Waste treatment methods  
Sewage disposal-relevant information  
Do not empty into drains. Avoid release to the environment. Refer to special instructions/safety data sheets.

Waste treatment of containers/packages  
Completely emptied packages can be recycled. Handle contaminated packages in the same way as the substance itself.

Remarks  
Please consider the relevant national or regional provisions. Waste shall be separated into the categories that can be handled separately by the local or national waste management facilities.
SECTION 14: Transport information

14.1 UN number
not subject to transport regulations

14.2 UN proper shipping name
not relevant

14.3 Transport hazard class(es)
not assigned

14.4 Packing group
not assigned

14.5 Environmental hazards
non-environmentally hazardous acc. to the dangerous goods regulations

14.6 Special precautions for user
There is no additional information.

14.7 Transport in bulk according to Annex II of MARPOL and the IBC Code
The cargo is not intended to be carried in bulk.

Information for each of the UN Model Regulations

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SECTION 15: Regulatory information

15.1 Safety, health and environmental regulations specific for the product in question

National regulations (United States)

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Clean Air Act
  none of the ingredients are listed

Right to Know Hazardous Substance List
- Hazardous Substance List (NJ-RTK)
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Industry or sector specific available guidance(s)

NPCA-HMIS® III

<table>
<thead>
<tr>
<th>Category</th>
<th>Rating</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chronic</td>
<td>/</td>
<td>none</td>
</tr>
<tr>
<td>Health</td>
<td>2</td>
<td>temporary or minor injury may occur</td>
</tr>
<tr>
<td>Flammability</td>
<td>2</td>
<td>material that must be moderately heated or exposed to relatively high ambient temperatures before ignition can occur</td>
</tr>
<tr>
<td>Physical hazard</td>
<td>0</td>
<td>material that is normally stable, even under fire conditions, and will not react with water, polymerize, decompose, condense, or self-react. Non-explosive</td>
</tr>
<tr>
<td>Personal protection</td>
<td>-</td>
<td></td>
</tr>
</tbody>
</table>

NFPA® 704

<table>
<thead>
<tr>
<th>Category</th>
<th>Degree of hazard</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flammability</td>
<td>2</td>
<td>material that must be moderately heated or exposed to relatively high ambient temperatures before ignition can occur</td>
</tr>
<tr>
<td>Health</td>
<td>0</td>
<td>material that, under emergency conditions, would offer no hazard beyond that of ordinary combustible material</td>
</tr>
<tr>
<td>Instability</td>
<td>0</td>
<td>material that is normally stable, even under fire conditions</td>
</tr>
<tr>
<td>Special hazard</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

National inventories

<table>
<thead>
<tr>
<th>Country</th>
<th>Inventory</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>AU</td>
<td>AICS</td>
<td>not all ingredients are listed</td>
</tr>
<tr>
<td>CA</td>
<td>DSL</td>
<td>not all ingredients are listed</td>
</tr>
<tr>
<td>CN</td>
<td>IECSC</td>
<td>not all ingredients are listed</td>
</tr>
<tr>
<td>EU</td>
<td>ECSI</td>
<td>not all ingredients are listed</td>
</tr>
<tr>
<td>EU</td>
<td>REACH Reg.</td>
<td>not all ingredients are listed</td>
</tr>
<tr>
<td>JP</td>
<td>CSCL-ENCS</td>
<td>not all ingredients are listed</td>
</tr>
</tbody>
</table>
### Country Inventory Status

<table>
<thead>
<tr>
<th>Country</th>
<th>Inventory</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>JP</td>
<td>ISHA-ENCS</td>
<td>not all ingredients are listed</td>
</tr>
<tr>
<td>KR</td>
<td>KECI</td>
<td>not all ingredients are listed</td>
</tr>
<tr>
<td>MX</td>
<td>INSQ</td>
<td>not all ingredients are listed</td>
</tr>
<tr>
<td>NZ</td>
<td>NZIoC</td>
<td>not all ingredients are listed</td>
</tr>
<tr>
<td>PH</td>
<td>PICCS</td>
<td>not all ingredients are listed</td>
</tr>
<tr>
<td>TR</td>
<td>CICR</td>
<td>not all ingredients are listed</td>
</tr>
<tr>
<td>TW</td>
<td>TCSI</td>
<td>not all ingredients are listed</td>
</tr>
<tr>
<td>US</td>
<td>TSCA</td>
<td>not all ingredients are listed</td>
</tr>
</tbody>
</table>

**Legend**

- AICS: Australian Inventory of Chemical Substances
- CICR: Chemical Inventory and Control Regulation
- CSCL-ENCS: List of Existing and New Chemical Substances (CSCL-ENCS)
- DSL: Domestic Substances List (DSL)
- ECSI: EC Substance Inventory (EINECS, ELINCS, NLP)
- IECS: Inventory of Existing Chemical Substances Produced or Imported in China
- INSQ: National Inventory of Chemical Substances
- ISHA-ENCS: Inventory of Existing and New Chemical Substances (ISHA-ENCS)
- KECI: Korea Existing Chemicals Inventory
- NZIoC: New Zealand Inventory of Chemicals
- PICCS: Philippine Inventory of Chemicals and Chemical Substances (PICCS)
- REACH Reg.: REACH registered substances
- TCSI: Taiwan Chemical Substance Inventory
- TSCA: Toxic Substance Control Act

### 15.2 Chemical Safety Assessment

Chemical safety assessments for substances in this mixture were not carried out.

### SECTION 16: Other information, including date of preparation or last revision

#### Abbreviations and acronyms

<table>
<thead>
<tr>
<th>Abbr.</th>
<th>Descriptions of used abbreviations</th>
</tr>
</thead>
<tbody>
<tr>
<td>49 CFR US DOT</td>
<td>49 CFR U.S. Department of Transportation</td>
</tr>
<tr>
<td>Cal/OSHA PEL</td>
<td>California Division of Occupational Safety and Health (Cal/OSHA): Permissible Exposure Limits (PELs)</td>
</tr>
<tr>
<td>CAS</td>
<td>Chemical Abstracts Service (service that maintains the most comprehensive list of chemical substances)</td>
</tr>
<tr>
<td>Ceiling-C</td>
<td>Ceiling value</td>
</tr>
<tr>
<td>DGR</td>
<td>Dangerous Goods Regulations (see IATA/DGR)</td>
</tr>
<tr>
<td>EINECS</td>
<td>European Inventory of Existing Commercial Chemical Substances</td>
</tr>
<tr>
<td>ELINCS</td>
<td>European List of Notified Chemical Substances</td>
</tr>
<tr>
<td>Eye Dam.</td>
<td>Seriously damaging to the eye</td>
</tr>
<tr>
<td>Eye Irrit.</td>
<td>Irritant to the eye</td>
</tr>
</tbody>
</table>
Abbr. | Descriptions of used abbreviations
--- | ---
GHS | "Globally Harmonized System of Classification and Labelling of Chemicals" developed by the United Nations
IATA | International Air Transport Association
IATA/DGR | Dangerous Goods Regulations (DGR) for the air transport (IATA)
ICAO | International Civil Aviation Organization
IMDG | International Maritime Dangerous Goods Code
MARPOL | International Convention for the Prevention of Pollution from Ships (abbr. of "Marine Pollutant")
NIOSH REL | National Institute for Occupational Safety and Health (NIOSH): Recommended Exposure Limits (RELs)
NLP | No-Longer Polymer
OSHA | Occupational Safety and Health Administration (United States)
PBT | Persistent, Bioaccumulative and Toxic
PEL | Permissible exposure limit
ppm | Parts per million
RTECS | Registry of Toxic Effects of Chemical Substances (database of NIOSH with toxicological information)
STEL | Short-term exposure limit
TWA | Time-weighted average
vPvB | Very Persistent and very Bioaccumulative

**Key literature references and sources for data**

**Classification procedure**
Physical and chemical properties: The classification is based on tested mixture.
Health hazards, Environmental hazards: The method for classification of the mixture is based on ingredients of the mixture (additivity formula).

**List of relevant phrases (code and full text as stated in section 2 and 3)**

<table>
<thead>
<tr>
<th>Code</th>
<th>Text</th>
</tr>
</thead>
<tbody>
<tr>
<td>H319</td>
<td>Causes serious eye irritation.</td>
</tr>
</tbody>
</table>

**Disclaimer**
This information is based upon the present state of our knowledge. This SDS has been compiled and is solely intended for this product.
SECTION 1: Identification

1.1 Product identifier
   Trade name: DNA Prep Pack Riboprinter System
   Product code(s): ASY2028

1.2 Relevant identified uses of the substance or mixture and uses advised against
   Relevant identified uses: Laboratory and analytical use

1.3 Details of the supplier of the safety data sheet
   Hygiena USA
   941 Avenida Acaso
   Camarillo California 93012
   United States
   Telephone: +1 (805) 388-8007
   Telefax: +1 (805) 388-5531
   e-mail: info@hygiena.com
   e-mail (competent person): info@hygiena.com

1.4 Emergency telephone number
   Emergency information service: 1-888-494-4362
   This number is only available during the following office hours: Mon-Fri 08:00 AM - 05:00 PM

SECTION 2: Hazard(s) identification

2.1 Classification of the substance or mixture
   Classification acc. to OSHA "Hazard Communication Standard" (29 CFR 1910.1200)
   This mixture does not meet the criteria for classification.

2.2 Label elements
   Labelling acc. to OSHA "Hazard Communication Standard" (29 CFR 1910.1200)
   not required

2.3 Other hazards
   of no significance

SECTION 3: Composition/information on ingredients

3.1 Substances
   Not relevant (mixture)

3.2 Mixtures
### Description of the mixture

<table>
<thead>
<tr>
<th>Name of substance</th>
<th>Identifier</th>
<th>Wt%</th>
<th>Classification acc. to GHS</th>
<th>Pictograms</th>
</tr>
</thead>
<tbody>
<tr>
<td>Polyvinylpyrrolidone</td>
<td>CAS No 9003-39-8</td>
<td>3 - &lt; 5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Carbowax</td>
<td>CAS No 25322-68-3</td>
<td>3 - &lt; 5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Achromopeptidase</td>
<td>CAS No 78642-25-8</td>
<td>1 - &lt; 3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Loading Dye Solution</td>
<td></td>
<td>1 - &lt; 3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dithioerythritol</td>
<td>CAS No 6892-68-8</td>
<td>1 - &lt; 3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pyrogen Free Water</td>
<td>CAS No 7732-18-5</td>
<td>0.1 - &lt; 1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ribonuclease A</td>
<td>CAS No 9001-99-4</td>
<td>0.1 - &lt; 1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ficoll 400 DL</td>
<td>CAS No 26873-85-8</td>
<td>0.1 - &lt; 1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tris</td>
<td>CAS No 77-86-1</td>
<td>&lt; 0.1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sodium Chloride</td>
<td>CAS No 7647-14-5</td>
<td>&lt; 0.1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>EDTA disodium dihydrate</td>
<td>CAS No 6381-92-6</td>
<td>&lt; 0.1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Magnesium Chloride Hexahydrate</td>
<td>CAS No 7791-18-6</td>
<td>&lt; 0.1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bromophenol Blue</td>
<td>CAS No 34725-61-6</td>
<td>&lt; 0.1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Xylene Cyanol</td>
<td>CAS No 2650-17-1</td>
<td>&lt; 0.1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>dNTP Mix</td>
<td></td>
<td>&lt; 0.1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lambda Phage DNA</td>
<td>CAS No 91080-14-7</td>
<td>&lt; 0.1</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

For full text of abbreviations: see SECTION 16.

### SECTION 4: First-aid measures

#### 4.1 Description of first-aid measures

**General notes**

Do not leave affected person unattended. Remove victim out of the danger area. Keep affected person warm, still and covered. Take off immediately all contaminated clothing. In all cases of doubt, or when symptoms persist, seek medical advice. In case of unconsciousness place person in the recovery position. Never give anything by mouth.

**Following inhalation**

If breathing is irregular or stopped, immediately seek medical assistance and start first aid actions. Provide fresh air.
Following skin contact
    Wash with plenty of soap and water.

Following eye contact
    Remove contact lenses, if present and easy to do. Continue rinsing. Irrigate copiously with clean, fresh water for at least 10 minutes, holding the eyelids apart.

Following ingestion
    Rinse mouth with water (only if the person is conscious). Do NOT induce vomiting.

4.2 Most important symptoms and effects, both acute and delayed
    Symptoms and effects are not known to date.

4.3 Indication of any immediate medical attention and special treatment needed
    none

SECTION 5: Fire-fighting measures

5.1 Extinguishing media
    Suitable extinguishing media
        Water spray, BC-powder, Carbon dioxide (CO2)
    Unsuitable extinguishing media
        Water jet

5.2 Special hazards arising from the substance or mixture
    Hazardous combustion products
        Nitrogen oxides (NOx), Carbon monoxide (CO), Carbon dioxide (CO2)

5.3 Advice for firefighters
    In case of fire and/or explosion do not breathe fumes. Coordinate firefighting measures to the fire surroundings. Do not allow firefighting water to enter drains or water courses. Collect contaminated firefighting water separately. Fight fire with normal precautions from a reasonable distance.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures
    For non-emergency personnel
        Remove persons to safety.
    For emergency responders
        Wear breathing apparatus if exposed to vapors/dust/aerosols/gases.

6.2 Environmental precautions
    Keep away from drains, surface and ground water. Retain contaminated washing water and dispose of it.

6.3 Methods and material for containment and cleaning up
    Advice on how to contain a spill
        Covering of drains
Advice on how to clean up a spill
  Wipe up with absorbent material (e.g. cloth, fleece). Collect spillage: sawdust, kieselgur (diatomite), sand, universal binder

Appropriate containment techniques
  Use of adsorbent materials.

Other information relating to spills and releases
  Place in appropriate containers for disposal. Ventilate affected area.

6.4 Reference to other sections

SECTION 7: Handling and storage

7.1 Precautions for safe handling
  Recommendations
  - Measures to prevent fire as well as aerosol and dust generation
    Use local and general ventilation. Use only in well-ventilated areas.

  Advice on general occupational hygiene
  Wash hands after use. Do not eat, drink and smoke in work areas. Remove contaminated clothing and protective equipment before entering eating areas. Never keep food or drink in the vicinity of chemicals. Never place chemicals in containers that are normally used for food or drink. Keep away from food, drink and animal feedingstuffs.

7.2 Conditions for safe storage, including any incompatibilities

7.3 Specific end use(s)
  See section 16 for a general overview.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters
  This information is not available.

<table>
<thead>
<tr>
<th>Name of substance</th>
<th>CAS No</th>
<th>Endpoint</th>
<th>Threshold level</th>
<th>Protection goal, route of exposure</th>
<th>Used in</th>
<th>Exposure time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Carbowax</td>
<td>25322-68-3</td>
<td>DNEL</td>
<td>40.2 mg/m³</td>
<td>human, inhalatory</td>
<td>worker (industry)</td>
<td>chronic - systemic effects</td>
</tr>
<tr>
<td>Carbowax</td>
<td>25322-68-3</td>
<td>DNEL</td>
<td>112 mg/kg bw/day</td>
<td>human, dermal</td>
<td>worker (industry)</td>
<td>chronic - systemic effects</td>
</tr>
<tr>
<td>EDTA disodium dihydrate</td>
<td>6381-92-6</td>
<td>DNEL</td>
<td>1.5 mg/m³</td>
<td>human, inhalatory</td>
<td>worker (industry)</td>
<td>chronic - systemic effects</td>
</tr>
<tr>
<td>EDTA disodium dihydrate</td>
<td>6381-92-6</td>
<td>DNEL</td>
<td>3 mg/m³</td>
<td>human, inhalatory</td>
<td>worker (industry)</td>
<td>acute - systemic effects</td>
</tr>
<tr>
<td>EDTA disodium dihydrate</td>
<td>6381-92-6</td>
<td>DNEL</td>
<td>1.5 mg/m³</td>
<td>human, inhalatory</td>
<td>worker (industry)</td>
<td>chronic - local effects</td>
</tr>
</tbody>
</table>
### Relevant DNELs of components of the mixture

<table>
<thead>
<tr>
<th>Name of substance</th>
<th>CAS No</th>
<th>Endpoint</th>
<th>Threshold level</th>
<th>Protection goal, route of exposure</th>
<th>Used in</th>
<th>Exposure time</th>
</tr>
</thead>
<tbody>
<tr>
<td>EDTA disodium dihydinate</td>
<td>6381-92-6</td>
<td>DNEL</td>
<td>3 mg/m³</td>
<td>human, inhalatory</td>
<td>worker (industry)</td>
<td>acute - local effects</td>
</tr>
</tbody>
</table>

### Relevant PNECs of components of the mixture

<table>
<thead>
<tr>
<th>Name of substance</th>
<th>CAS No</th>
<th>Endpoint</th>
<th>Threshold level</th>
<th>Organism</th>
<th>Environmental compartment</th>
<th>Exposure time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Carbowax</td>
<td>25322-68-3</td>
<td>PNEC</td>
<td>0.273 g/l</td>
<td>aquatic organisms</td>
<td>freshwater</td>
<td>short-term (single instance)</td>
</tr>
<tr>
<td>Carbowax</td>
<td>25322-68-3</td>
<td>PNEC</td>
<td>27.3 mg/l</td>
<td>aquatic organisms</td>
<td>marine water</td>
<td>short-term (single instance)</td>
</tr>
<tr>
<td>Carbowax</td>
<td>25322-68-3</td>
<td>PNEC</td>
<td>1,030 mg/kg</td>
<td>aquatic organisms</td>
<td>freshwater sediment</td>
<td>short-term (single instance)</td>
</tr>
<tr>
<td>Carbowax</td>
<td>25322-68-3</td>
<td>PNEC</td>
<td>103 mg/kg</td>
<td>aquatic organisms</td>
<td>marine sediment</td>
<td>short-term (single instance)</td>
</tr>
<tr>
<td>Carbowax</td>
<td>25322-68-3</td>
<td>PNEC</td>
<td>46.4 mg/kg</td>
<td>terrestrial organisms</td>
<td>soil</td>
<td>short-term (single instance)</td>
</tr>
<tr>
<td>EDTA disodium dihydinate</td>
<td>6381-92-6</td>
<td>PNEC</td>
<td>2.5 mg/l</td>
<td>aquatic organisms</td>
<td>freshwater</td>
<td>short-term (single instance)</td>
</tr>
<tr>
<td>EDTA disodium dihydinate</td>
<td>6381-92-6</td>
<td>PNEC</td>
<td>0.25 mg/l</td>
<td>aquatic organisms</td>
<td>marine water</td>
<td>short-term (single instance)</td>
</tr>
<tr>
<td>EDTA disodium dihydinate</td>
<td>6381-92-6</td>
<td>PNEC</td>
<td>50 mg/l</td>
<td>aquatic organisms</td>
<td>sewage treatment plant (STP)</td>
<td>short-term (single instance)</td>
</tr>
<tr>
<td>EDTA disodium dihydinate</td>
<td>6381-92-6</td>
<td>PNEC</td>
<td>1.1 mg/kg</td>
<td>terrestrial organisms</td>
<td>soil</td>
<td>short-term (single instance)</td>
</tr>
<tr>
<td>Magnesium Chloride Hexahydrate</td>
<td>7791-18-6</td>
<td>PNEC</td>
<td>3.21 mg/l</td>
<td>aquatic organisms</td>
<td>freshwater</td>
<td>short-term (single instance)</td>
</tr>
<tr>
<td>Magnesium Chloride Hexahydrate</td>
<td>7791-18-6</td>
<td>PNEC</td>
<td>0.32 mg/l</td>
<td>aquatic organisms</td>
<td>marine water</td>
<td>short-term (single instance)</td>
</tr>
<tr>
<td>Magnesium Chloride Hexahydrate</td>
<td>7791-18-6</td>
<td>PNEC</td>
<td>90 mg/l</td>
<td>aquatic organisms</td>
<td>sewage treatment plant (STP)</td>
<td>short-term (single instance)</td>
</tr>
<tr>
<td>Magnesium Chloride Hexahydrate</td>
<td>7791-18-6</td>
<td>PNEC</td>
<td>288.9 mg/kg</td>
<td>aquatic organisms</td>
<td>freshwater sediment</td>
<td>short-term (single instance)</td>
</tr>
<tr>
<td>Magnesium Chloride Hexahydrate</td>
<td>7791-18-6</td>
<td>PNEC</td>
<td>28.89 mg/kg</td>
<td>aquatic organisms</td>
<td>marine sediment</td>
<td>short-term (single instance)</td>
</tr>
<tr>
<td>Magnesium Chloride Hexahydrate</td>
<td>7791-18-6</td>
<td>PNEC</td>
<td>662.8 mg/kg</td>
<td>terrestrial organisms</td>
<td>soil</td>
<td>short-term (single instance)</td>
</tr>
</tbody>
</table>

### 8.2 Exposure controls

Appropriate engineering controls
General ventilation.
Individual protection measures (personal protective equipment)

Eye/face protection
Wear eye/face protection.

Skin protection
- Hand protection
Wear suitable gloves. Chemical protection gloves are suitable, which are tested according to EN 374. Check leak-tightness/impermeability prior to use. In the case of wanting to use the gloves again, clean them before taking off and air them well. For special purposes, it is recommended to check the resistance to chemicals of the protective gloves mentioned above together with the supplier of these gloves.

- Other protection measures
Take recovery periods for skin regeneration. Preventive skin protection (barrier creams/ointments) is recommended. Wash hands thoroughly after handling.

Respiratory protection
In case of inadequate ventilation wear respiratory protection.

Environmental exposure controls
Use appropriate container to avoid environmental contamination. Keep away from drains, surface and ground water.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

<table>
<thead>
<tr>
<th>Appearance</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical state</td>
<td>liquid</td>
</tr>
<tr>
<td>Color</td>
<td>not determined</td>
</tr>
<tr>
<td>Particle</td>
<td>not relevant (liquid)</td>
</tr>
<tr>
<td>Odor</td>
<td>characteristic</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Other safety parameters</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>pH (value)</td>
<td>not determined</td>
</tr>
<tr>
<td>Melting point/freezing point</td>
<td>not determined</td>
</tr>
<tr>
<td>Initial boiling point and boiling range</td>
<td>205.7 °C at 977.6 hPa</td>
</tr>
<tr>
<td>Flash point</td>
<td>not determined</td>
</tr>
<tr>
<td>Evaporation rate</td>
<td>Not determined</td>
</tr>
<tr>
<td>Flammability (solid, gas)</td>
<td>not relevant, (fluid)</td>
</tr>
<tr>
<td>Vapor pressure</td>
<td>&lt;0.1 Pa at 20 °C</td>
</tr>
</tbody>
</table>
DNA Prep Pack Riboprinter System

### Density
- not determined

### Vapor density
- this information is not available

### Relative density
- Information on this property is not available

### Solubility(ies)
- not determined

### Partition coefficient
- n-octanol/water (log KOW)
- this information is not available

### Auto-ignition temperature
- 360 °C

### Viscosity
- not determined

### Explosive properties
- none

### Oxidizing properties
- none

### Other information

#### Solvent content
- 9.921 %

#### Solid content
- 4.661 %

#### Temperature class (USA, acc. to NEC 500)
- T2 (maximum permissible surface temperature on the equipment: 300°C)

### SECTION 10: Stability and reactivity

#### Reactivity
Concerning incompatibility: see below "Conditions to avoid" and "Incompatible materials".

#### Chemical stability
The material is stable under normal ambient and anticipated storage and handling conditions of temperature and pressure.

#### Possibility of hazardous reactions
No known hazardous reactions.

#### Conditions to avoid
There are no specific conditions known which have to be avoided.

#### Incompatible materials
- Oxidizers

#### Hazardous decomposition products
Reasonably anticipated hazardous decomposition products produced as a result of use, storage, spill and heating are not known. Hazardous combustion products: see section 5.
SECTION 11: Toxicological information

11.1 Information on toxicological effects

Test data are not available for the complete mixture.

Classification procedure
The method for classification of the mixture is based on ingredients of the mixture (additivity formula).

Classification acc. to OSHA "Hazard Communication Standard" (29 CFR 1910.1200)
This mixture does not meet the criteria for classification.

Acute toxicity
Shall not be classified as acutely toxic.

Skin corrosion/irritation
Shall not be classified as corrosive/irritant to skin.

Serious eye damage/eye irritation
Shall not be classified as seriously damaging to the eye or eye irritant.

Respiratory or skin sensitization
Shall not be classified as a respiratory or skin sensitizer.

Germ cell mutagenicity
Shall not be classified as germ cell mutagenic.

Carcinogenicity
Shall not be classified as carcinogenic.

<table>
<thead>
<tr>
<th>Name of substance</th>
<th>CAS No</th>
<th>Classification</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Polyvinylpyrrolidone</td>
<td>9003-39-8</td>
<td>3</td>
<td></td>
</tr>
</tbody>
</table>

Legend
3 Not classifiable as to carcinogenicity in humans

Reproductive toxicity
Shall not be classified as a reproductive toxicant.

Specific target organ toxicity - single exposure
Shall not be classified as a specific target organ toxicant (single exposure).

Specific target organ toxicity - repeated exposure
Shall not be classified as a specific target organ toxicant (repeated exposure).

Aspiration hazard
Shall not be classified as presenting an aspiration hazard.
SECTION 12: Ecological information

12.1 Toxicity
Shall not be classified as hazardous to the aquatic environment.

12.2 Persistence and degradability
Data are not available.

12.3 Bioaccumulative potential
Data are not available.

12.4 Mobility in soil
Data are not available.

12.5 Results of PBT and vPvB assessment
Data are not available.

12.6 Endocrine disrupting properties
None of the ingredients are listed.

12.7 Other adverse effects
Data are not available.

SECTION 13: Disposal considerations

13.1 Waste treatment methods
Sewage disposal-relevant information
Do not empty into drains. Avoid release to the environment. Refer to special instructions/safety data sheets.

Waste treatment of containers/packages
Completely emptied packages can be recycled. Handle contaminated packages in the same way as the substance itself.

Remarks
Please consider the relevant national or regional provisions. Waste shall be separated into the categories that can be handled separately by the local or national waste management facilities.

SECTION 14: Transport information

14.1 UN number
not subject to transport regulations

14.2 UN proper shipping name
not relevant

14.3 Transport hazard class(es)
not assigned

14.4 Packing group
not assigned

14.5 Environmental hazards
non-environmentally hazardous acc. to the dangerous goods regulations

14.6 Special precautions for user
There is no additional information.
14.7 Transport in bulk according to Annex II of MARPOL and the IBC Code
The cargo is not intended to be carried in bulk.

Information for each of the UN Model Regulations
Transport of dangerous goods by road or rail (49 CFR US DOT) - Additional information
Not subject to transport regulations.

International Maritime Dangerous Goods Code (IMDG) - Additional information
Not subject to IMDG.

International Civil Aviation Organization (ICAO-IATA/DGR) - Additional information
Not subject to ICAO-IATA.

SECTION 15: Regulatory information

15.1 Safety, health and environmental regulations specific for the product in question

National regulations (United States)

Superfund Amendment and Reauthorization Act (SARA TITLE III )
- The List of Extremely Hazardous Substances and Their Threshold Planning Quantities (EPCRA Section 302, 304)
  none of the ingredients are listed
- Specific Toxic Chemical Listings (EPCRA Section 313)
  none of the ingredients are listed

Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA)
- List of Hazardous Substances and Reportable Quantities (CERCLA section 102a) (40 CFR 302.4)
  none of the ingredients are listed

Clean Air Act
  none of the ingredients are listed

Right to Know Hazardous Substance List
- Hazardous Substance List (NJ-RTK)
  none of the ingredients are listed

California Environmental Protection Agency (Cal/EPA): Proposition 65 - Safe Drinking Water and Toxic Enforcement Act of 1987
  none of the ingredients are listed

Industry or sector specific available guidance(s)

NPCA-HMIS® III
**DNA Prep Pack Riboprinter System**

**Category** | **Rating** | **Description**
--- | --- | ---
Chronic | / | none
Health | 0 | no significant risk to health
Flammability | 1 | material that must be preheated before ignition can occur
Physical hazard | 0 | material that is normally stable, even under fire conditions, and will not react with water, polymerize, decompose, condense, or self-react. Non-explosive
Personal protection | - | -

**NFPA® 704**

**Category** | **Degree of hazard** | **Description**
--- | --- | ---
Flammability | 1 | material that must be preheated before ignition can occur
Health | 0 | material that, under emergency conditions, would offer no hazard beyond that of ordinary combustible material
Instability | 0 | material that is normally stable, even under fire conditions
Special hazard | - | -

**15.2 Chemical Safety Assessment**
Chemical safety assessments for substances in this mixture were not carried out.

**SECTION 16: Other information, including date of preparation or last revision**

**Abbreviations and acronyms**

<table>
<thead>
<tr>
<th>Abbr.</th>
<th>Descriptions of used abbreviations</th>
</tr>
</thead>
<tbody>
<tr>
<td>49 CFR US DOT</td>
<td>49 CFR U.S. Department of Transportation</td>
</tr>
<tr>
<td>CAS</td>
<td>Chemical Abstracts Service (service that maintains the most comprehensive list of chemical substances)</td>
</tr>
<tr>
<td>DGR</td>
<td>Dangerous Goods Regulations (see IATA/DGR)</td>
</tr>
<tr>
<td>DNEL</td>
<td>Derived No-Effect Level</td>
</tr>
<tr>
<td>GHS</td>
<td>&quot;Globally Harmonized System of Classification and Labelling of Chemicals&quot; developed by the United Nations</td>
</tr>
<tr>
<td>IARC</td>
<td>International Agency for Research on Cancer</td>
</tr>
<tr>
<td>IATA</td>
<td>International Air Transport Association</td>
</tr>
<tr>
<td>IATA/DGR</td>
<td>Dangerous Goods Regulations (DGR) for the air transport (IATA)</td>
</tr>
<tr>
<td>ICAO</td>
<td>International Civil Aviation Organization</td>
</tr>
<tr>
<td>IMDG</td>
<td>International Maritime Dangerous Goods Code</td>
</tr>
<tr>
<td>MARPOL</td>
<td>International Convention for the Prevention of Pollution from Ships (abbr. of &quot;Marine Pollutant&quot;)</td>
</tr>
</tbody>
</table>
DNA Prep Pack Riboprinter System

### Key literature references and sources for data

### Classification procedure
- Physical and chemical properties: The classification is based on tested mixture.
- Health hazards, Environmental hazards: The method for classification of the mixture is based on ingredients of the mixture (additivity formula).

### Disclaimer
- This information is based upon the present state of our knowledge. This SDS has been compiled and is solely intended for this product.
SECTION 1: Identification

1.1 Product identifier
   Trade name: MP PROBE, FILLED INSERT (RIBOPRINTER SYSTEM)
   Product code(s): ASY2041

1.2 Relevant identified uses of the substance or mixture and uses advised against
   Relevant identified uses: Laboratory and analytical use

1.3 Details of the supplier of the safety data sheet
   Hygiena USA
   941 Avenida Acaso
   Camarillo California 93012
   United States
   Telephone: +1 (805) 388-8007
   Telefax: +1 (805) 388-5531
   e-mail: info@hygiena.com
   e-mail (competent person): info@hygiena.com

1.4 Emergency telephone number
   Emergency information service: 1-888-494-4362
   This number is only available during the following office hours: Mon-Fri 08:00 AM - 05:00 PM

SECTION 2: Hazard(s) identification

2.1 Classification of the substance or mixture
   Classification acc. to OSHA "Hazard Communication Standard" (29 CFR 1910.1200)
   This mixture does not meet the criteria for classification.

2.2 Label elements
   Labelling acc. to OSHA "Hazard Communication Standard" (29 CFR 1910.1200)
   not required

2.3 Other hazards
   of no significance

SECTION 3: Composition/information on ingredients

3.1 Substances
   Not relevant (mixture)

3.2 Mixtures
MP PROBE, FILLED INSERT (RIBOPRINTER SYSTEM)

**SECTION 4: First-aid measures**

### 4.1 Description of first-aid measures

**General notes**
Do not leave affected person unattended. Remove victim out of the danger area. Keep affected person warm, still and covered. Take off immediately all contaminated clothing. In all cases of doubt, or when symptoms persist, seek medical advice. In case of unconsciousness place person in the recovery position. Never give anything by mouth.

**Following inhalation**
If breathing is irregular or stopped, immediately seek medical assistance and start first aid actions. Provide fresh air.

**Following skin contact**
Wash with plenty of soap and water.

**Following eye contact**
Remove contact lenses, if present and easy to do. Continue rinsing. Irrigate copiously with clean, fresh water for at least 10 minutes, holding the eyelids apart.

**Following ingestion**
Rinse mouth with water (only if the person is conscious). Do NOT induce vomiting.

### 4.2 Most important symptoms and effects, both acute and delayed
Symptoms and effects are not known to date.

### 4.3 Indication of any immediate medical attention and special treatment needed
none

---

**Description of the mixture**

<table>
<thead>
<tr>
<th>Name of substance</th>
<th>Identifier</th>
<th>Wt%</th>
<th>Classification acc. to GHS</th>
<th>Pictograms</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lithium dodecyl sulphate</td>
<td>CAS No 2044-56-6</td>
<td>25 - &lt; 50</td>
<td>Acute Tox. 4 / H302</td>
<td>![Pictogram]</td>
</tr>
<tr>
<td>Sodium Chloride</td>
<td>CAS No 7647-14-5</td>
<td>25 - &lt; 50</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tris HCl</td>
<td>CAS No 1185-53-1</td>
<td>25 - &lt; 50</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tris</td>
<td>CAS No 77-86-1</td>
<td>1 - &lt; 3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pyrogen Free Water</td>
<td>CAS No 7732-18-5</td>
<td>1 - &lt; 3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>DNA LINEARIZED VECTOR</td>
<td></td>
<td>&lt; 0.1</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

For full text of abbreviations: see SECTION 16.
SECTION 5: Fire-fighting measures

5.1 Extinguishing media

Suitable extinguishing media
- Water spray, Alcohol resistant foam, BC-powder, Carbon dioxide (CO2)

Unsuitable extinguishing media
- Water jet

5.2 Special hazards arising from the substance or mixture

5.3 Advice for firefighters

In case of fire and/or explosion do not breathe fumes. Coordinate firefighting measures to the fire surroundings. Do not allow firefighting water to enter drains or water courses. Collect contaminated firefighting water separately. Fight fire with normal precautions from a reasonable distance.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

For non-emergency personnel
- Remove persons to safety.

For emergency responders
- Wear breathing apparatus if exposed to vapors/dust/aerosols/gases.

6.2 Environmental precautions

- Keep away from drains, surface and ground water. Retain contaminated washing water and dispose of it.

6.3 Methods and material for containment and cleaning up

Advice on how to contain a spill
- Covering of drains

Advice on how to clean up a spill
- Wipe up with absorbent material (e.g. cloth, fleece). Collect spillage: sawdust, kieselgur (diatomite), sand, universal binder

Appropriate containment techniques
- Use of absorbent materials.

Other information relating to spills and releases
- Place in appropriate containers for disposal. Ventilate affected area.

6.4 Reference to other sections

- Personal protective equipment: see section 8.
- Incompatible materials: see section 10.
- Disposal considerations: see section 13.
**SECTION 7: Handling and storage**

7.1 **Precautions for safe handling**

**Recommendations**
- Measures to prevent fire as well as aerosol and dust generation
  
  Use local and general ventilation. Use only in well-ventilated areas.

**Advice on general occupational hygiene**
- Wash hands after use. Do not eat, drink and smoke in work areas. Remove contaminated clothing and protective equipment before entering eating areas. Never keep food or drink in the vicinity of chemicals. Never place chemicals in containers that are normally used for food or drink. Keep away from food, drink and animal feedingstuffs.

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

- **Packaging compatibilities**
  
  Only packagings which are approved (e.g. acc. to the Dangerous Goods Regulations) may be used.

7.3 **Specific end use(s)**

See section 16 for a general overview.

**SECTION 8: Exposure controls/personal protection**

8.1 **Control parameters**

This information is not available.

### Relevant DNELs of components of the mixture

<table>
<thead>
<tr>
<th>Name of substance</th>
<th>CAS No</th>
<th>Endpoint</th>
<th>Threshold level</th>
<th>Protection goal, route of exposure</th>
<th>Used in</th>
<th>Exposure time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lithium dodecyl sulphate</td>
<td>2044-56-6</td>
<td>DNEL</td>
<td>7.6 mg/m³</td>
<td>human, inhalatory</td>
<td>worker (industry)</td>
<td>chronic - systemic effects</td>
</tr>
<tr>
<td>Lithium dodecyl sulphate</td>
<td>2044-56-6</td>
<td>DNEL</td>
<td>433.3 mg/kg bw/day</td>
<td>human, dermal</td>
<td>worker (industry)</td>
<td>chronic - systemic effects</td>
</tr>
<tr>
<td>Tris HCl</td>
<td>1185-53-1</td>
<td>DNEL</td>
<td>152.8 mg/m³</td>
<td>human, inhalatory</td>
<td>worker (industry)</td>
<td>chronic - systemic effects</td>
</tr>
<tr>
<td>Tris HCl</td>
<td>1185-53-1</td>
<td>DNEL</td>
<td>216.6 mg/kg bw/day</td>
<td>human, dermal</td>
<td>worker (industry)</td>
<td>chronic - systemic effects</td>
</tr>
</tbody>
</table>

### Relevant PNECs of components of the mixture

<table>
<thead>
<tr>
<th>Name of substance</th>
<th>CAS No</th>
<th>Endpoint</th>
<th>Threshold level</th>
<th>Organism</th>
<th>Environmental compartment</th>
<th>Exposure time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lithium dodecyl sulphate</td>
<td>2044-56-6</td>
<td>PNEC</td>
<td>0.088 mg/l</td>
<td>aquatic organisms</td>
<td>freshwater</td>
<td>short-term (single instance)</td>
</tr>
<tr>
<td>Lithium dodecyl sulphate</td>
<td>2044-56-6</td>
<td>PNEC</td>
<td>0.009 mg/l</td>
<td>aquatic organisms</td>
<td>marine water</td>
<td>short-term (single instance)</td>
</tr>
<tr>
<td>Lithium dodecyl sulphate</td>
<td>2044-56-6</td>
<td>PNEC</td>
<td>1.35 mg/l</td>
<td>aquatic organisms</td>
<td>sewage treatment plant (STP)</td>
<td>short-term (single instance)</td>
</tr>
</tbody>
</table>
Relevant PNECs of components of the mixture

<table>
<thead>
<tr>
<th>Name of substance</th>
<th>CAS No</th>
<th>Endpoint</th>
<th>Threshold level</th>
<th>Organism</th>
<th>Environmental compartment</th>
<th>Exposure time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lithium dodecyl sulphate</td>
<td>2044-56-6</td>
<td>PNEC</td>
<td>3.098 mg/kg</td>
<td>aquatic organisms</td>
<td>freshwater sediment</td>
<td>short-term (single instance)</td>
</tr>
<tr>
<td>Lithium dodecyl sulphate</td>
<td>2044-56-6</td>
<td>PNEC</td>
<td>0.31 mg/kg</td>
<td>aquatic organisms</td>
<td>marine sediment</td>
<td>short-term (single instance)</td>
</tr>
<tr>
<td>Lithium dodecyl sulphate</td>
<td>2044-56-6</td>
<td>PNEC</td>
<td>0.577 mg/kg</td>
<td>terrestrial organisms</td>
<td>soil</td>
<td>short-term (single instance)</td>
</tr>
</tbody>
</table>

8.2 Exposure controls

Appropriate engineering controls

- General ventilation.

Individual protection measures (personal protective equipment)

Eye/face protection

- Wear eye/face protection.

Skin protection

- Hand protection
  - Wear suitable gloves. Chemical protection gloves are suitable, which are tested according to EN 374. Check leak-tightness/impermeability prior to use. In the case of wanting to use the gloves again, clean them before taking off and air them well. For special purposes, it is recommended to check the resistance to chemicals of the protective gloves mentioned above together with the supplier of these gloves.

- Other protection measures
  - Take recovery periods for skin regeneration. Preventive skin protection (barrier creams/ointments) is recommended. Wash hands thoroughly after handling.

Respiratory protection

- In case of inadequate ventilation wear respiratory protection.

Environmental exposure controls

- Use appropriate container to avoid environmental contamination. Keep away from drains, surface and ground water.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Appearance

<table>
<thead>
<tr>
<th>Physical state</th>
<th>liquid</th>
</tr>
</thead>
<tbody>
<tr>
<td>Color</td>
<td>not determined</td>
</tr>
<tr>
<td>Particle</td>
<td>not relevant (liquid)</td>
</tr>
<tr>
<td>Odor</td>
<td>characteristic</td>
</tr>
</tbody>
</table>
### Other safety parameters

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>pH (value)</td>
<td>not determined</td>
</tr>
<tr>
<td>Melting point/freezing point</td>
<td>not determined</td>
</tr>
<tr>
<td>Initial boiling point and boiling range</td>
<td>not determined</td>
</tr>
<tr>
<td>Flash point</td>
<td>not determined</td>
</tr>
<tr>
<td>Evaporation rate</td>
<td>Not determined</td>
</tr>
<tr>
<td>Flammability (solid, gas)</td>
<td>not relevant, (fluid)</td>
</tr>
<tr>
<td>Vapor pressure</td>
<td>not determined</td>
</tr>
<tr>
<td>Density</td>
<td>not determined</td>
</tr>
<tr>
<td>Vapor density</td>
<td>this information is not available</td>
</tr>
<tr>
<td>Relative density</td>
<td>Information on this property is not available</td>
</tr>
</tbody>
</table>

#### Solubility(ies)
- Water solubility: miscible in any proportion

#### Partition coefficient
- n-octanol/water (log KOW): this information is not available

### 9.2 Other information

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Solvent content</td>
<td>4.31 %</td>
</tr>
<tr>
<td>Solid content</td>
<td>95.69 %</td>
</tr>
</tbody>
</table>
SECTION 10: Stability and reactivity

10.1 Reactivity
Concerning incompatibility: see below “Conditions to avoid” and “Incompatible materials”.

10.2 Chemical stability
The material is stable under normal ambient and anticipated storage and handling conditions of temperature and pressure.

10.3 Possibility of hazardous reactions
No known hazardous reactions.

10.4 Conditions to avoid
There are no specific conditions known which have to be avoided.

10.5 Incompatible materials
There is no additional information.

10.6 Hazardous decomposition products
Reasonably anticipated hazardous decomposition products produced as a result of use, storage, spill and heating are not known. Hazardous combustion products: see section 5.

SECTION 11: Toxicological information

11.1 Information on toxicological effects
Test data are not available for the complete mixture.

Classification procedure
The method for classification of the mixture is based on ingredients of the mixture (additivity formula).

This mixture does not meet the criteria for classification.

Acute toxicity
Shall not be classified as acutely toxic.

<table>
<thead>
<tr>
<th>Name of substance</th>
<th>CAS No</th>
<th>Exposure route</th>
<th>ATE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lithium dodecyl sulphate</td>
<td>2044-56-6</td>
<td>oral</td>
<td>1,200 mg/kg</td>
</tr>
</tbody>
</table>

Skin corrosion/irritation
Shall not be classified as corrosive/irritant to skin.

Serious eye damage/eye irritation
Shall not be classified as seriously damaging to the eye or eye irritant.

Respiratory or skin sensitization
Shall not be classified as a respiratory or skin sensitizer.

Germ cell mutagenicity
Shall not be classified as germ cell mutagenic.
Carcinogenicity
  Shall not be classified as carcinogenic.

Reproductive toxicity
  Shall not be classified as a reproductive toxicant.

Specific target organ toxicity - single exposure
  Shall not be classified as a specific target organ toxicant (single exposure).

Specific target organ toxicity - repeated exposure
  Shall not be classified as a specific target organ toxicant (repeated exposure).

Aspiration hazard
  Shall not be classified as presenting an aspiration hazard.

**SECTION 12: Ecological information**

12.1 Toxicity
  No data available.

12.2 Persistence and degradability
  Data are not available.

12.3 Bioaccumulative potential
  Data are not available.

12.4 Mobility in soil
  Data are not available.

12.5 Results of PBT and vPvB assessment
  Data are not available.

12.6 Endocrine disrupting properties
  Information on this property is not available.

12.7 Other adverse effects
  Data are not available.

**SECTION 13: Disposal considerations**

13.1 Waste treatment methods
  Sewage disposal-relevant information
    Do not empty into drains. Avoid release to the environment. Refer to special instructions/safety data sheets.

  Waste treatment of containers/packages
    Only packagings which are approved (e.g. acc. to DOT) may be used. Completely emptied packages can be recycled. Handle contaminated packages in the same way as the substance itself.

  Remarks
    Please consider the relevant national or regional provisions. Waste shall be separated into the categories that can be handled separately by the local or national waste management facilities.
SECTION 14: Transport information

14.1 UN number
   DOT UN

14.2 UN proper shipping name
   not assigned

14.3 Transport hazard class(es)
   not assigned

14.4 Packing group
   not assigned

14.5 Environmental hazards
   non-environmentally hazardous acc. to the dangerous goods regulations

14.6 Special precautions for user
   There is no additional information.

14.7 Transport in bulk according to Annex II of MARPOL and the IBC Code
   The cargo is not intended to be carried in bulk.

Information for each of the UN Model Regulations

Transport of dangerous goods by road or rail (49 CFR US DOT) - Additional information
   not assigned

International Maritime Dangerous Goods Code (IMDG) - Additional information
   not assigned

International Civil Aviation Organization (ICAO-IATA/DGR) - Additional information
   not assigned

SECTION 15: Regulatory information

15.1 Safety, health and environmental regulations specific for the product in question

   Industry or sector specific available guidance(s)

   NPCA-HMIS® III

   NFPA® 704

15.2 Chemical Safety Assessment
   Chemical safety assessments for substances in this mixture were not carried out.
Abbreviations and acronyms

<table>
<thead>
<tr>
<th>Abbr.</th>
<th>Descriptions of used abbreviations</th>
</tr>
</thead>
<tbody>
<tr>
<td>49 CFR US DOT</td>
<td>49 CFR  U.S. Department of Transportation</td>
</tr>
<tr>
<td>Acute Tox.</td>
<td>Acute toxicity</td>
</tr>
<tr>
<td>ATE</td>
<td>Acute Toxicity Estimate</td>
</tr>
<tr>
<td>CAS</td>
<td>Chemical Abstracts Service (service that maintains the most comprehensive list of chemical substances)</td>
</tr>
<tr>
<td>DGR</td>
<td>Dangerous Goods Regulations (see IATA/DGR)</td>
</tr>
<tr>
<td>DNEL</td>
<td>Derived No-Effect Level</td>
</tr>
<tr>
<td>DOT</td>
<td>Department of Transportation (USA)</td>
</tr>
<tr>
<td>GHS</td>
<td>&quot;Globally Harmonized System of Classification and Labelling of Chemicals&quot; developed by the United Nations</td>
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<tr>
<td>ICAO</td>
<td>International Civil Aviation Organization</td>
</tr>
<tr>
<td>IMDG</td>
<td>International Maritime Dangerous Goods Code</td>
</tr>
<tr>
<td>MARPOL</td>
<td>International Convention for the Prevention of Pollution from Ships (abbr. of &quot;Marine Pollutant&quot;)</td>
</tr>
<tr>
<td>OSHA</td>
<td>Occupational Safety and Health Administration (United States)</td>
</tr>
<tr>
<td>PBT</td>
<td>Persistent, Bioaccumulative and Toxic</td>
</tr>
<tr>
<td>PNEC</td>
<td>Predicted No-Effect Concentration</td>
</tr>
<tr>
<td>RTECS</td>
<td>Registry of Toxic Effects of Chemical Substances (database of NIOSH with toxicological information)</td>
</tr>
<tr>
<td>vPvB</td>
<td>Very Persistent and very Bioaccumulative</td>
</tr>
</tbody>
</table>

Key literature references and sources for data


Classification procedure

Physical and chemical properties: The classification is based on tested mixture.

Health hazards, Environmental hazards: The method for classification of the mixture is based on ingredients of the mixture (additivity formula).

List of relevant phrases (code and full text as stated in section 2 and 3)

<table>
<thead>
<tr>
<th>Code</th>
<th>Text</th>
</tr>
</thead>
<tbody>
<tr>
<td>H302</td>
<td>Harmful if swallowed.</td>
</tr>
</tbody>
</table>
Disclaimer

This information is based upon the present state of our knowledge. This SDS has been compiled and is solely intended for this product.