Safety Data Sheet

Cat. # RC-086

PVP (Polyvinylpyrrolidone)

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

1.1. Product identifier

<table>
<thead>
<tr>
<th>Attribute</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Product form</td>
<td>Substance</td>
</tr>
<tr>
<td>Substance name</td>
<td>PVP (Polyvinylpyrrolidone)</td>
</tr>
<tr>
<td>Chemical name</td>
<td>PVP (Polyvinylpyrrolidone)</td>
</tr>
<tr>
<td>EC-No.</td>
<td>201-800-4</td>
</tr>
<tr>
<td>CAS-No.</td>
<td>9003-39-8</td>
</tr>
<tr>
<td>Product code</td>
<td>622P</td>
</tr>
<tr>
<td>Type of product</td>
<td>Group, Polymer</td>
</tr>
<tr>
<td>Formula</td>
<td>(C6H9NO)n</td>
</tr>
<tr>
<td>Product group</td>
<td>Raw material</td>
</tr>
<tr>
<td>BIG No.</td>
<td>18611</td>
</tr>
</tbody>
</table>

1.2. Relevant identified uses of the substance or mixture and uses advised against

1.2.1. Relevant identified uses

Main use category : Research purposes

1.2.2. Uses advised against

No additional information available

1.3. Details of the supplier of the safety data sheet

Geno Technology, Inc./ G-Biosciences
9800 Page Avenue
63132-1429 Saint Louis - United States
T 800-628-7730 - F 314-991-1504
technical@GBiosciences.com - www.GBiosciences.com

1.4. Emergency telephone number

Emergency number : Chemtrec 1-800-424-9300 (USA/Canada), +1-703-527-3887 (Intl)

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification according to Regulation (EC) No. 1272/2008 [CLP]

Not classified

Adverse physicochemical, human health and environmental effects

To our knowledge, this product does not present any particular risk, provided it is handled in accordance with good occupational hygiene and safety practice.
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Safety Data Sheet
according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2015/830

2.2. Label elements
Labelling according to Regulation (EC) No. 1272/2008 [CLP]
No labelling applicable

2.3. Other hazards
No additional information available

SECTION 3: Composition/information on ingredients

3.1. Substances

<table>
<thead>
<tr>
<th>Name</th>
<th>Product identifier</th>
<th>%</th>
<th>Classification according to Regulation (EC) No. 1272/2008 [CLP]</th>
</tr>
</thead>
<tbody>
<tr>
<td>PVP (Polyvinylpyrolidone)</td>
<td>(CAS-No.) 9003-39-8 (EC-No.) 201-800-4</td>
<td>100</td>
<td>Not classified</td>
</tr>
</tbody>
</table>

3.2. Mixtures
Not applicable

SECTION 4: First aid measures

4.1. Description of first aid measures

First-aid measures after inhalation: Remove the victim into fresh air. Respiratory problems: consult a doctor/medical service.

First-aid measures after skin contact: Rinse with water. Soap may be used. Take victim to a doctor if irritation persists.

First-aid measures after eye contact: Rinse with water. Remove contact lenses, if present and easy to do. Continue rinsing. Do not apply neutralizing agents. Take victim to an ophthalmologist if irritation persists.


4.2. Most important symptoms and effects, both acute and delayed
Symptoms/effects after ingestion: AFTER INGESTION OF HIGH QUANTITIES: Diarrhoea.
Chronic symptoms: ON CONTINUOUS/REPEATED EXPOSURE/CONTACT: Lung tissue affection/degeneration. Enlargement/affection of the liver.

4.3. Indication of any immediate medical attention and special treatment needed
Treat symptomatically.

SECTION 5: Firefighting measures

5.1. Extinguishing media


5.2. Special hazards arising from the substance or mixture

Explosion hazard: DIRECT EXPLOSION HAZARD: Fine dust is explosive with air. INDIRECT EXPLOSION HAZARD: Dust cloud can be ignited by a spark.

Hazardous decomposition products in case of fire: Toxic fumes may be released.

5.3. Advice for firefighters
Precautionary measures fire: Exposure to fire/heat: keep upwind. Exposure to fire/heat: consider evacuation. Exposure to fire/heat: have neighbourhood close doors and windows.

Firefighting instructions: Dilute toxic gases with water spray.


SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel

Emergency procedures: Mark the danger area. Prevent dust cloud formation, e.g. by wetting. No naked flames.
Measures in case of dust release


6.1.2. For emergency responders

Protective equipment

- Do not attempt to take action without suitable protective equipment. For further information refer to section 8: “Exposure controls/personal protection”.

6.2. Environmental precautions

Avoid release to the environment.

6.3. Methods and material for containment and cleaning up

For containment

- Contain released product, pump into suitable containers. Plug the leak, cut off the supply. Knock down/dilute dust cloud with water spray. Provide equipment/receptacles with earthing. Powdered form: no compressed air for pumping over spills.

Methods for cleaning up

- Stop dust cloud by humidifying. Scoop solid spill into closing containers. Powdered: do not use compressed air for pumping over spills. Carefully collect the spill/lifters. Take collected spill to manufacturer/competent authority. Clean contaminated surfaces with an excess of water. Wash clothing and equipment after handling.

Other information

- Dispose of materials or solid residues at an authorized site.

6.4. Reference to other sections

For further information refer to section 13.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Precautions for safe handling


Hygiene measures

- Do not eat, drink or smoke when using this product. Always wash hands after handling the product.

7.2. Conditions for safe storage, including any incompatibilities

Storage conditions

- Store in a well-ventilated place. Keep cool.

Storage temperature

- 20 °C

Heat and ignition sources

- KEEP SUBSTANCE AWAY FROM: heat sources. ignition sources.

Information on mixed storage

- KEEP SUBSTANCE AWAY FROM: oxidizing agents. reducing agents.

Storage area

- Store in a dry area. Store in a dark area. Provide the tank with earthing. Keep only in the original container. Meet the legal requirements.

Special rules on packaging

- SPECIAL REQUIREMENTS: closing, watertight. dry. opaque. correctly labelled. meet the legal requirements. Secure fragile packagings in solid containers.

Packaging materials

- SUITABLE MATERIAL: synthetic material.

7.3. Specific end use(s)

No additional information available

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

PVP (Polyvinylpyrolidone) (9003-39-8)

United Kingdom - Occupational Exposure Limits

<table>
<thead>
<tr>
<th>WEL TWA (mg/m³)</th>
<th>10 mg/m³</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>4 mg/m³</td>
</tr>
</tbody>
</table>

8.2. Exposure controls

Appropriate engineering controls:

Ensure good ventilation of the work station.

Materials for protective clothing:

- GIVE GOOD RESISTANCE: synthetic material. rubber

Hand protection:

- Gloves
Eye protection:
Safety glasses. In case of dust production: protective goggles

Skin and body protection:
Protective clothing

Respiratory protection:
Dust formation: dust mask

Environmental exposure controls:
Avoid release to the environment.

SECTION 9: Physical and chemical properties
9.1. Information on basic physical and chemical properties
Physical state: Solid
Appearance: Solid. Amorphous powder.
Colour: Off-white to light yellow.
Odour: Characteristic odour. Mild odour.
Odour threshold: No data available
pH: 3 - 7 (5 %)
Relative evaporation rate (butylacetate=1): 0
Melting point: 130 °C
Freezing point: Not applicable
Boiling point: No data available
Flash point: > 250 °C
Auto-ignition temperature: 420 °C
Decomposition temperature: No data available
Flammability (solid, gas): Non flammable.
Vapour pressure: < 0.1 hPa (20 °C)
Relative vapour density at 20 °C: Not applicable
Relative density: 1.2 - 1.3
Density: 1230 - 1290 kg/m³
Water: > 30 g/100ml
Log Pow: No data available
Viscosity, kinematic: No data available
Viscosity, dynamic: No data available
Explosive properties: No data available
Oxidising properties: No data available
Explosive limits: Not applicable

9.2. Other information
VOC content: 0 %
Other properties: Hygroscopic. Acid reaction. May generate electrostatic charges.

SECTION 10: Stability and reactivity
10.1. Reactivity
The product is non-reactive under normal conditions of use, storage and transport.

10.2. Chemical stability
Stable under normal conditions. Hygroscopic.

10.3. Possibility of hazardous reactions
No dangerous reactions known under normal conditions of use.

10.4. Conditions to avoid
None under recommended storage and handling conditions (see section 7).

10.5. Incompatible materials
No additional information available

10.6. Hazardous decomposition products
Hazardous decomposition products.
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according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2015/830

SECTION 11: Toxicological information

### 11.1. Information on toxicological effects

<table>
<thead>
<tr>
<th>Effect</th>
<th>Classification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acute toxicity (oral)</td>
<td>Not classified</td>
</tr>
<tr>
<td>Acute toxicity (dermal)</td>
<td>Not classified</td>
</tr>
<tr>
<td>Acute toxicity (inhalation)</td>
<td>Not classified</td>
</tr>
</tbody>
</table>

**PVP (Polyvinylpyrolidone) (9003-39-8)**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>LD50 oral rat</td>
<td>100000 mg/kg (Rat, Oral)</td>
</tr>
<tr>
<td>LD50 dermal rat</td>
<td>&gt; 12000 mg/kg (Rat, Dermal)</td>
</tr>
</tbody>
</table>

**Skin corrosion/irritation**

pH: 3 - 7 (5 %)

**Serious eye damage/irritation**

pH: 3 - 7 (5 %)

**Respiratory or skin sensitisation**

Not classified

**Carcinogenicity**

Not classified

**Germ cell mutagenicity**

Not classified

**Reproductive toxicity**

Not classified

**STOT-single exposure**

Not classified

**STOT-repeated exposure**

Not classified

**Aspiration hazard**

Not classified

**Potential adverse human health effects and symptoms**

Non-toxic if swallowed (LD50 oral, rat > 5000 mg/kg). Non-toxic in contact with skin (LD50 skin> 5000 mg/kg). Not irritant to skin. Not irritant to respiratory organs. Slightly irritant to eyes.

SECTION 12: Ecological information

### 12.1. Toxicity

**Ecology - general**

The product is not considered harmful to aquatic organisms nor to cause long-term adverse effects in the environment.

**Ecology - air**

Not classified as dangerous for the ozone layer (Regulation (EC) No 1005/2009).

**Ecology - water**

Not harmful to fishes. Mild water pollutant (surface water). Not harmful to activated sludge.

**Acute aquatic toxicity**

Not classified

**Chronic aquatic toxicity**

Not classified

**PVP (Polyvinylpyrolidone) (9003-39-8)**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>LC50 fish 1</td>
<td>&gt; 10000 mg/l (96 h, Leuciscus idus)</td>
</tr>
</tbody>
</table>

### 12.2. Persistence and degradability

**PVP (Polyvinylpyrolidone) (9003-39-8)**

Persistence and degradability

Not readily biodegradable in water.

### 12.3. Bioaccumulative potential

**PVP (Polyvinylpyrolidone) (9003-39-8)**

Bioaccumulative potential

No bioaccumulation data available.

### 12.4. Mobility in soil

No additional information available

### 12.5. Results of PBT and vPvB assessment

No additional information available

### 12.6. Other adverse effects

No additional information available

SECTION 13: Disposal considerations

### 13.1. Waste treatment methods

**Waste treatment methods**

Waste treatment methods.

**Product/Packaging disposal recommendations**

Recycle/reuse. Remove to an authorized dump. Remove to an authorized incinerator with energy recovery. Precipitate/make insoluble.

**Additional information**


**European List of Waste (LoW) code**

07 02 13 - waste plastic

SECTION 14: Transport information

In accordance with ADR / RID / IMDG / IATA / ADN

5/11/2017 (Version: 1.1)  EN (English)  5/7
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14.1. UN number
UN-No. (ADR) : Not regulated
UN-No. (IMDG) : Not regulated
UN-No. (IATA) : Not regulated
UN-No. (ADN) : Not regulated
UN-No. (RID) : Not regulated

14.2. UN proper shipping name
Proper Shipping Name (ADR) : Not regulated
Proper Shipping Name (IMDG) : Not regulated
Proper Shipping Name (IATA) : Not regulated
Proper Shipping Name (ADN) : Not regulated
Proper Shipping Name (RID) : Not regulated

14.3. Transport hazard class(es)
ADR
Transport hazard class(es) (ADR) : Not regulated
IMDG
Transport hazard class(es) (IMDG) : Not regulated
IATA
Transport hazard class(es) (IATA) : Not regulated
ADN
Transport hazard class(es) (ADN) : Not regulated
RID
Transport hazard class(es) (RID) : Not regulated

14.4. Packing group
Packing group (ADR) : Not regulated
Packing group (IMDG) : Not regulated
Packing group (IATA) : Not regulated
Packing group (ADN) : Not regulated
Packing group (RID) : Not regulated

14.5. Environmental hazards
Dangerous for the environment : No
Marine pollutant : No
Other information : No supplementary information available

14.6. Special precautions for user
Overland transport
Not regulated
Transport by sea
Not regulated
Air transport
Not regulated
Inland waterway transport
Not regulated
Rail transport
Not regulated

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

SECTION 15: Regulatory information

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

15.1.1. EU-Regulations
No REACH Annex XVII restrictions
PVP (Polyvinylpyrolidone) is not on the REACH Candidate List
PVP (Polyvinylpyrolidone) is not on the REACH Annex XIV List
PVP (Polyvinylpyrolidone) is not subject to REGULATION (EU) No 649/2012 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 4 July 2012 concerning the export and import of hazardous chemicals.
VOC content : 0 %

15.1.2. National regulations
Not listed on the United States TSCA (Toxic Substances Control Act) inventory

15.2. Chemical safety assessment
No chemical safety assessment has been carried out

SECTION 16: Other information

Safety Data Sheet applicable for regions : GB - United Kingdom

SDS EU (REACH Annex II)
This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.