SAFETY DATA SHEET

Product code: P1347
Product Name: POLYVINYLPYRROLIDONE, CROSS-LINKED

Other means of identification
Synonyms: Polyvinylpolypyrrolidone; PVP
CAS #: 25249-54-1
RTECS #: Not available
Ci#: Not available

Recommended use of the chemical and restrictions on use
Recommended use: No information available.
Uses advised against: No information available

Supplier:
Spectrum Chemicals and Laboratory Products, Inc.
14422 South San Pedro St.
Gardena, CA  90248
(310) 516-8000
Order Online At: https://www.spectrumchemical.com

Emergency telephone number
Chemtrec 1-800-424-9300
Contact Person: Martin LaBenz (West Coast)
Contact Person: Ibad Tirmiz (East Coast)

2. HAZARDS IDENTIFICATION

Classification
This chemical is not considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)
Not a dangerous substance or mixture according to the Globally Harmonized System (GHS)

Label elements
Not classified

Hazard not otherwise classified (HNOC)
Not Applicable

Other hazards
Not available
3. COMPOSITION/INFORMATION ON INGREDIENTS

<table>
<thead>
<tr>
<th>Components</th>
<th>CAS-No.</th>
<th>Weight %</th>
<th>Trade Secret</th>
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<tbody>
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<td>Polyvinylpyrrolidone, cross-linked</td>
<td>25249-54-1</td>
<td>100</td>
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</tr>
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4. FIRST AID MEASURES

First aid measures

General Advice: Poison information centers in each State capital city can provide additional assistance for scheduled poisons (13 1126)

Skin Contact: Wash off immediately with soap and plenty of water removing all contaminated clothes and shoes. Get medical attention if irritation develops. Consult a physician if necessary.

Eye Contact: Flush eye with water for 15 minutes. Get medical attention if irritation occurs. If symptoms persist, call a physician.

Inhalation: Move to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

Ingestion: Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Consult a physician if necessary.

Most important symptoms and effects, both acute and delayed

Symptoms Health injuries are not known or expected under normal use.

Indication of any immediate medical attention and special treatment needed

Notes to Physician: Treat symptomatically

Protection of first-aiders

First-Aid Providers: Avoid exposure to blood or body fluids. Wear gloves and other necessary protective clothing. Dispose of contaminated clothing and equipment as bio-hazardous waste

5. FIRE-FIGHTING MEASURES

Extinguishing Media

Suitable Extinguishing Media: Carbon dioxide (CO2). Dry chemical. Water spray mist or foam.

Unsuitable Extinguishing Media: No information available.

Specific hazards arising from the chemical

Hazardous Combustion Products: No information available.

Specific hazards: May be combustible at high temperatures. Fine dust dispersed in air in sufficient concentrations, and in the presence of an ignition source is a potential dust explosion hazard

Special Protective Actions for Firefighters
Specific Methods: No information available.

Special Protective Equipment for Firefighters: As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Personal Precautions: Ensure adequate ventilation. Use personal protective equipment. Avoid contact with skin, eyes and clothing. Avoid dust formation. Keep people away from and upwind of spill/leak. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Remove all sources of ignition.

Environmental precautions: Prevent further leakage or spillage if safe to do so. Prevent product from entering drains. Prevent entry into waterways, sewers, basements or confined areas.

Methods and material for containment and cleaning up

Methods for containment: Stop leak if you can do it without risk. Cover with plastic sheet to prevent spreading.

Methods for cleaning up: Sweep up and shovel into suitable containers for disposal. Clean contaminated surface thoroughly.

7. HANDLING AND STORAGE

Precautions for safe handling

Technical Measures/Precautions: Provide sufficient air exchange and/or exhaust in work rooms. Avoid dust formation. Keep away from incompatible materials.

Safe Handling Advice: Wear personal protective equipment. Avoid contact with skin, eyes and clothing. Keep away from heat and sources of ignition. Avoid dust formation. Do not ingest. Do not breathe vapours/dust. Handle in accordance with good industrial hygiene and safety practice.

Conditions for safe storage, including any incompatibilities

Technical Measures/Storage Conditions: Keep container tightly closed in a dry and well-ventilated place. Store at room temperature in the original container. Store away from incompatible materials.

Incompatible Materials: Oxidizing agents.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

National occupational exposure limits

<table>
<thead>
<tr>
<th>United States</th>
<th>OSHA</th>
<th>NIOSH</th>
<th>ACGIH</th>
<th>AIHA WHEEL</th>
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<tr>
<td>Components</td>
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<td>Polyvinylpyrrolidone, cross-linked - 25249-54-1</td>
<td>None</td>
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Product code: P1347
Product name: POLYVINYL PYRROLIDONE, CROSS-LINKED
Canada

<table>
<thead>
<tr>
<th>Components</th>
<th>Alberta</th>
<th>British Columbia</th>
<th>Ontario</th>
<th>Quebec</th>
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Australia and Mexico

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<th>Mexico</th>
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</thead>
<tbody>
<tr>
<td>Polyvinylpyrrolidone, cross-linked 25249-54-1</td>
<td>None</td>
<td>None</td>
</tr>
</tbody>
</table>

Appropriate engineering controls

**Engineering measures to reduce exposure:**
Ensure adequate ventilation. Use process enclosures, local exhaust ventilation, or other engineering controls to keep airborne levels below recommended exposure limits. If user operations generate dust, fume or mist, use ventilation to keep exposure to airborne contaminants below the exposure limit.

**Individual protection measures, such as personal protective equipment**

**Personal Protective Equipment**

**Eye protection:** Safety glasses. Safety glasses with side-shields.

**Skin and body protection:** Long sleeved clothing. Chemical resistant apron. Gloves.

**Respiratory protection:** Effective dust mask. Wear respirator with dust filter..

**Hygiene measures:** Avoid contact with skin, eyes and clothing. Wash hands before breaks and immediately after handling the product. When using, do not eat, drink or smoke.

9. PHYSICAL AND CHEMICAL PROPERTIES
9. PHYSICAL AND CHEMICAL PROPERTIES

<table>
<thead>
<tr>
<th>Physical state:</th>
<th>Appearance:</th>
<th>Color:</th>
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<tbody>
<tr>
<td>Solid</td>
<td>Crystalline powder</td>
<td>Off-white</td>
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<table>
<thead>
<tr>
<th>Odor:</th>
<th>Taste</th>
<th>Molecular/Formula weight:</th>
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<table>
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<tr>
<th>Formula:</th>
<th>Flash point (°C):</th>
<th>Flashpoint (°C/°F):</th>
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<table>
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<th>Flash Point Tested according to:</th>
<th>Lower Explosion Limit (%):</th>
<th>Upper Explosion Limit (%):</th>
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<table>
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<tr>
<th>Autoignition Temperature (°C/°F):</th>
<th>pH:</th>
<th>Melting point/range(°C/°F):</th>
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</table>

<table>
<thead>
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<th>Boiling point/range(°C/°F):</th>
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<th>Bulk density:</th>
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</tr>
</tbody>
</table>

<table>
<thead>
<tr>
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<th>Vapor pressure @ 20°C (kPa):</th>
<th>Density (g/cm³):</th>
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</table>

<table>
<thead>
<tr>
<th>Evaporation rate:</th>
<th>Vapor density:</th>
<th>VOC content (g/L):</th>
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</thead>
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</table>

<table>
<thead>
<tr>
<th>Odor threshold (ppm):</th>
<th>Partition coefficient</th>
<th>Viscosity:</th>
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<tbody>
<tr>
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<td>(n-octanol/water):</td>
<td>No information available</td>
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</table>

<table>
<thead>
<tr>
<th>Miscibility:</th>
<th>Solubility:</th>
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</thead>
<tbody>
<tr>
<td>No information available</td>
<td>No information available</td>
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</tbody>
</table>

10. STABILITY AND REACTIVITY

Reactivity
Reactive with oxidizing agents

Chemical stability
Stability: Stable under recommended storage conditions

Possibility of Hazardous Reactions: Hazardous polymerization does not occur

Conditions to avoid:
Heat. Ignition sources. Incompatible materials. Avoid dust formation. Dust may form explosive mixture in air. Fine dust dispersed in air in sufficient concentrations, and in the presence of an ignition source is a potential dust explosion hazard.

Incompatible Materials: Oxidizing agents.

Hazardous decomposition products: No information available

Other Information
Corrosivity: No information available

Special Remarks on Corrosivity: No information available

11. TOXICOLOGICAL INFORMATION

Product code: P1347
Product name: POLYVINYLPYRROLIDONE, CROSS-LINKED
11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Principal Routes of Exposure:
Ingestion. Inhalation.

Acute Toxicity

Component Information

Polyvinylpyrrolidone, cross-linked - 25249-54-1

<table>
<thead>
<tr>
<th>Route</th>
<th>LD50/acute</th>
<th>LC50/inhalation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oral/rat</td>
<td>No information available</td>
<td>No information available</td>
</tr>
<tr>
<td>Oral/mouse</td>
<td>No information available</td>
<td>No information available</td>
</tr>
<tr>
<td>Dermal/rabbit</td>
<td>No information available</td>
<td>No information available</td>
</tr>
<tr>
<td>Dermal/rat</td>
<td>No information available</td>
<td>No information available</td>
</tr>
<tr>
<td>Inhalation/rat</td>
<td>No information available</td>
<td>No information available</td>
</tr>
<tr>
<td>Inhalation/mouse</td>
<td>No information available</td>
<td>No information available</td>
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</tbody>
</table>

Product Information

<table>
<thead>
<tr>
<th>Route</th>
<th>LD50/acute</th>
<th>LC50/inhalation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oral/rat</td>
<td>No information available</td>
<td>No information available</td>
</tr>
<tr>
<td>Oral/mouse</td>
<td>No information available</td>
<td>No information available</td>
</tr>
<tr>
<td>Dermal/rabbit</td>
<td>No information available</td>
<td>No information available</td>
</tr>
</tbody>
</table>

Symptoms

Skin Contact:  May cause skin irritation.
Eye Contact:   May cause eye irritation.
Inhalation:    May cause irritation of respiratory tract.
Ingestion:     May cause digestive (gastrointestinal) tract irritation.

Aspiration hazard: No information available

Delay and immediate effects as well as chronic effects from short and long-term exposure

Product code: P1347  Product name: POLYVINYLPYRROLIDONE, CROSS-LINKED
Chronic Toxicity  
No information available

Sensitization:  
No information available

Mutagenic Effects:  
No information available

Carcinogenic effects:  
Not considered carcinogenic

<table>
<thead>
<tr>
<th>Components</th>
<th>ACGIH - Carcinogens</th>
<th>IARC</th>
<th>NTP</th>
<th>OSHA HCS - Carcinogens</th>
<th>Australia - Prohibited Carcinogenic Substances</th>
<th>Australia - Notifiable Carcinogenic Substances</th>
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<tbody>
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<td>Not listed</td>
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<td>Not listed</td>
<td>Not listed</td>
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</table>

Reproductive toxicity  
No data is available

Reproductive Effects:  
No information available

Developmental Effects:  
No information available

Teratogenic Effects:  
No information available

Specific Target Organ Toxicity

<table>
<thead>
<tr>
<th>STOT - single exposure</th>
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</tr>
</thead>
<tbody>
<tr>
<td>STOT - repeated exposure</td>
<td>No information available</td>
</tr>
<tr>
<td>Target Organs:</td>
<td>No information available</td>
</tr>
</tbody>
</table>

12. ECOLOGICAL INFORMATION

Ecotoxicity

Ecotoxicity effects:  
No data available.

Persistence and degradability:  
No information available

Bioaccumulative potential:  
No information available

Mobility:  
No information available

13. DISPOSAL CONSIDERATIONS

Disposal Methods

Waste from residues / unused products:
Waste must be disposed of in accordance with Federal, State and Local regulation.

Contaminated packaging:
Empty containers should be taken for local recycling, recovery or waste disposal

Product code: P1347  
Product name:  
POLYVINYLPYRROLIDONE, CROSS-LINKED
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
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</thead>
<tbody>
<tr>
<td>Polyvinylpyrrolidone, cross-linked</td>
<td>None</td>
<td>None</td>
<td>None</td>
<td>None</td>
</tr>
</tbody>
</table>

# 14. TRANSPORT INFORMATION

**DOT**
- **UN-No:** Not Regulated
- **Proper Shipping Name:** No information available
- **Hazard Class:** No information available
- **Subsidiary Risk:** No information available
- **Packing Group:** None
- **ERG No:** No information available
- **Marine Pollutant:** No data available
- **DOT RQ (lbs):** No information available

**TDG (Canada)**
- **UN-No:** Not Regulated
- **Proper Shipping Name:** No information available
- **Hazard Class:** No information available
- **Subsidiary Risk:** No information available
- **Packing Group:** No information available
- **Description:** No information available

**ADR**
- **UN-No:** Not Regulated
- **Proper Shipping Name:** No information available
- **Hazard Class:** No information available
- **Packing Group:** No information available
- **Subsidiary Risk:** No information available
- **Classification Code:** No information available
- **Description:** No information available
- **CEFIC Tremcard No:** No information available

**IMO / IMDG**
- **UN-No:** Not Regulated
- **Proper Shipping Name:** No information available
- **Hazard Class:** No information available
- **Subsidiary Risk:** No information available
- **Packing Group:** No information available
- **Description:** No information available
- **IMDG Page:** No information available
- **Marine Pollutant:** No information available
- **MFAG:** No information available
- **Maximum Quantity:** No information available

**RID**
- **UN-No:** Not Regulated
- **Proper Shipping Name:** No information available
- **Hazard Class:** No information available
- **Subsidiary Risk:** No information available
- **Packing Group:** No information available
- **Classification Code:** No information available
- **Description:** No information available

**Product code:** P1347
**Product name:** POLYVINYLPYRROLIDONE, CROSS-LINKED
14. TRANSPORT INFORMATION

ICAO

UN-No: Not Regulated
Proper Shipping Name: No information available
Hazard Class: No information available
Subsidiary Risk: No information available
Packing Group: No information available
Description: No information available

IATA

UN-No: Not Regulated
Proper Shipping Name: No information available
Hazard Class: No information available
Subsidiary Risk: No information available
Packing Group: No information available
Description: No information available

15. REGULATORY INFORMATION

International Inventories

<table>
<thead>
<tr>
<th>Components</th>
<th>U.S. TSCA</th>
<th>KOREA KECL</th>
<th>Philippines (PICCS)</th>
<th>Japan ENCS</th>
<th>CHINA</th>
<th>Australia (AICS)</th>
<th>EINECS-No.</th>
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U.S. Regulations

Polyvinylpyrrolidone, cross-linked

FDA - Direct Food Additives 21 CFR 173.50
FDA - 21 CFR - Total Food Additives 173.50


Chemicals Known to the State of California to Cause Cancer:
This product does not contain a chemical requiring a warning under California Prop. 65. (See table below)

Chemicals Known to the State of California to Cause Reproductive Toxicity:
This product does not contain a chemical requiring a warning under California Prop. 65. (See table below)

<table>
<thead>
<tr>
<th>Components</th>
<th>Carcinogen</th>
<th>Developmental Toxicity</th>
<th>Male Reproductive Toxicity</th>
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CERCLA/SARA

<table>
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<tr>
<th>Components</th>
<th>CERCLA - Hazardous Substances and their Reportable Quantities</th>
<th>Section 302 Extremely Hazardous Substances and TPQs</th>
<th>Section 302 Extremely Hazardous Substances and RQs</th>
<th>Section 313 - Chemical Category</th>
<th>Section 313 - Reporting de minimis</th>
</tr>
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<tbody>
<tr>
<td>Polyvinylpyrrolidone, cross-linked</td>
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<td>None</td>
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U.S. TSCA

<table>
<thead>
<tr>
<th>Components</th>
<th>TSCA Section 5(a)2 - Chemicals With Significant New Use Rules (SNURS)</th>
<th>TSCA 8(d) - Health and Safety Reporting</th>
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<tbody>
<tr>
<td>Polyvinylpyrrolidone, cross-linked</td>
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Canada

**WHMIS hazard class:**
Non-controlled

**Polyvinylpyrrolidone, cross-linked**
Uncontrolled product according to WHMIS classification criteria

**Canada Controlled Products Regulation:**
This product has been classified according to the hazard criteria of the CPR (Controlled Products Regulation) and the MSDS contains all of the information required by the CPR.

**Inventory**

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<th>Components</th>
<th>Canada (DSL)</th>
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<tr>
<th>Components</th>
<th>CEPA Schedule I - Toxic Substances</th>
<th>CEPA - 2010 Greenhouse Gases Subject to Mandatory Reporting</th>
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</table>

**EU Classification**

**R-phrase(s)**
not determined (not applicable)

**S -phrase(s)**
S24 - Avoid contact with skin.
S25 - Avoid contact with eyes.
S28 - After contact with skin, wash immediately with plenty of water
S36 - Wear suitable protective clothing.
S37 - Wear suitable gloves.
S45 - In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

<table>
<thead>
<tr>
<th>Components</th>
<th>Classification</th>
<th>Concentration Limits:</th>
<th>Safety Phrases</th>
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</table>

The product is classified in accordance with Annex VI to Directive 67/548/EEC

**Indication of danger:**
None.
16. OTHER INFORMATION

Revision Date: 02/09/2015
Prepared by: Sonia Owen

Disclaimer:

All chemicals may pose unknown hazards and should be used with caution. This Safety Data Sheet (SDS) applies only to the material as packaged. If this product is combined with other materials, deteriorates, or becomes contaminated, it may pose hazards not mentioned in this SDS. The physical properties reported in this SDS are obtained from the literature and do not constitute product specifications. Information contained herein does not constitute a warranty, whether expressed or implied, as to the safety, merchantability or fitness of the goods for a particular purpose. Spectrum Chemicals & Laboratory Products, Inc. assumes no responsibility for results obtained or for incidental or consequential damages, including lost profits, arising from the use of these data. No warranty against infringement of any patent, copyright or trademark is made or implied. It shall be the user's responsibility to develop proper methods of handling and personal protection based on the actual conditions of use. While this SDS is based on technical data judged to be reliable, Spectrum assumes no responsibility for the completeness or accuracy of the information contained herein.

End of Safety Data Sheet