



# SAFETY DATA SHEET

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Version 1

## 1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION

<b>Product Name</b>	Betadine® (povidone-iodine, 10%) Solution - OTC
<b>Synonyms</b>	PVP-I
<b>Recommended Use</b>	This product is a topical microbicide
<b>Uses advised against</b>	Not for oral use.
<b>Distributor Address</b>	Purdue Products L.P. One Stamford Forum 201 Tresser Boulevard Stamford, Connecticut 06901-3431 (888) 726-7535
<b>24 Hour Emergency Phone Number</b>	Chemtrec (800) 424-9300 For all international transportation emergencies, call Chemtrec collect at (703) 527-3887.

**2. HAZARDS IDENTIFICATION**

This product is not considered hazardous by the 2012 OSHA Hazard Communications standard (29 CFR 1910.1200).

Serious eye damage/eye irritation	Category 2B
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<b>Emergency Overview</b>		
<b>Signal Word</b>	Warning	
<b>Hazard Statements</b> Causes serious eye irritation		
<b>Appearance</b> Reddish-brown	<b>Physical state</b> Liquid	<b>Odor</b> Characteristic odor

**Precautionary Statements - Prevention**

Wash face, hands and any exposed skin thoroughly after handling. Prolonged exposure to wet solution may cause irritation or, rarely, severe skin reactions. In pre-operative prepping, avoid "pooling" beneath the patient.

**Eyes**

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.

**Hazards Not Otherwise Classified (HNOC)**

Not Applicable.

**Other Information**

Causes mild skin irritation  
0% of the mixture consists of ingredient(s) of unknown toxicity.

**3. COMPOSITION/INFORMATION ON INGREDIENTS**

Chemical Name	CAS No	Weight %
Povidone Iodine	25655-41-8	5-10
Sodium hydroxide	1310-73-2	<1

**4. FIRST AID MEASURES**

First aid measures

<b>Eye contact</b>	In case of eye contact, immediately flush eyes with fresh water for at least 15 minutes while holding the eyelids open. Remove contact lenses if worn. Get medical attention if irritation persists.
<b>Skin contact</b>	In case of contact, remove contaminated clothing. Immediately flush skin with copious amounts of water for at least 15 minutes. Obtain medical attention if skin reaction occurs.
<b>Inhalation</b>	In case of inhalation, remove to fresh air. If not breathing, provide artificial respiration. If breathing is difficult, administer oxygen. Seek medical attention immediately.

<b>Ingestion</b>	In case of accidental ingestion, wash out mouth with copious amounts of water. Seek medical attention immediately. Do not induce vomiting unless directed by medical personnel. Never give anything by mouth to an unconscious person.
<b>Self-protection of the first aider</b>	Do not use mouth-to-mouth method if victim ingested or inhaled the substance; give artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device.
<b>Most important symptoms and effects, both acute and delayed</b>	
<b>Symptoms</b>	No information available.
<b>Indication of any immediate medical attention and special treatment needed</b>	
<b>Note to physicians</b>	Treat symptomatically.

## 5. FIRE-FIGHTING MEASURES

### **Suitable Extinguishing Media**

Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

**Unsuitable Extinguishing Media** No information available.

### **Specific hazards arising from the chemical**

No information available.

#### **Explosion Data**

**Sensitivity to Mechanical Impact** None.

**Sensitivity to Static Discharge** None.

### **Protective equipment and precautions 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** Evacuate personnel to safe areas. Use personal protection recommended in Section 8.

**Other Information** Not Applicable.

### **Environmental precautions**

**Environmental precautions** See section 12 for additional Ecological Information.

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

**Methods for containment** Prevent further leakage or spillage if safe to do so.

**Methods for cleaning up** Pick up and transfer to properly labeled containers.

## 7. HANDLING AND STORAGE

### Precautions for safe handling

**Advice on safe handling**                      Avoid contact with skin, eyes or clothing.

### Conditions for safe storage, including any incompatibilities

**Storage conditions**                              Keep container tightly closed in a dry and well-ventilated place.

**Incompatible materials**                        Strong alkalis or reducing agents.

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

**Exposure Guidelines**                        This product, as supplied, does not contain any hazardous materials with occupational exposure limits established by specific regulatory bodies.

Chemical Name	ACGIH TLV	OSHA PEL	NIOSH IDLH
Sodium hydroxide 1310-73-2	Ceiling: 2 mg/m <sup>3</sup>	TWA: 2 mg/m <sup>3</sup>	IDLH: 10 mg/m <sup>3</sup> Ceiling: 2 mg/m <sup>3</sup>

**Engineering Controls**                        Handle material under adequate ventilation (e.g., chemical fume hood, vented balance enclosure [VBE]). Keep container tightly closed. Minimize the amount of material handled at any one time.

### **Individual Protection Measures (Personal Protective Equipment)**

**Eye/face protection**                        None required for consumer use. In laboratory, medical or industrial settings, safety glasses with side shields are recommended. The use of goggles or full face protection may be required depending on the industrial exposure setting or possibility of splashing. Contact a health and safety professional for specific information.

**Skin and body protection**                    None required for consumer use. In laboratory, medical or industrial settings, gloves and lab coats are recommended. Contact a health and safety professional for specific information.

**Respiratory protection**                        Respirators may be required for certain laboratory and manufacturing tasks if engineering controls do not maintain airborne concentrations below recommended exposure limits (where applicable) or to an acceptable level (where the exposure limits have not been established). Workplace risk assessments should be completed before specifying and implementing respirator usage. In the United States of America, if respirators are used they are to be NIOSH approved and part of a respiratory protection program instituted to assure compliance with OSHA Standard 29 CFR 1910.134. Contact a health and safety professional or manufacturer for specific information.

**General Hygiene Considerations**            Handle in accordance with good industrial hygiene and safety practice.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

### Physical and Chemical Properties

**Physical state**                                      Liquid  
**Appearance**                                        Reddish-brown  
**Odor**    Characteristic odor  
**Color**    Reddish-brown  
**Odor threshold**                                    No information available.

<u>Property</u>	<u>Values</u>	<u>Remarks • Method</u>
<b>pH</b>	No information available.	
<b>Melting point / melting range</b>	No information available.	
<b>Boiling point / boiling range</b>	No information available.	
<b>Flash point</b>	> 93.3 °C / > 200 °F	CC (closed cup)
<b>Evaporation rate</b>	No information available.	
<b>Flammability (solid, gas)</b>	No information available.	
<b>Flammability limits in air</b>		
<b>Upper flammability limits</b>		
<b>Lower flammability limits</b>		
<b>Vapor pressure</b>	No information available.	
<b>Vapor density</b>	No information available.	
<b>Specific gravity</b>	No information available.	
<b>Water solubility</b>	No information available.	
<b>Solubility in other solvents</b>	No information available.	
<b>Partition coefficient (n-octanol/water)</b>	No information available.	
<b>Autoignition temperature</b>	No information available.	
<b>Decomposition temperature</b>	No information available.	
<b>Kinematic viscosity</b>	No information available.	
<b>Dynamic viscosity</b>	No information available.	
<b>Explosive properties</b>	No information available.	
<b>Oxidizing properties</b>	No information available.	
<b><u>Other Information</u></b>		
<b>Softening point</b>	No information available.	
<b>Molecular weight</b>	No information available.	
<b>VOC content; (%)</b>	No information available.	
<b>Density</b>	No information available.	
<b>Bulk density</b>	No information available.	

## 10. STABILITY AND REACTIVITY

<b>Reactivity</b>	A mixture of equal parts of a 10% povidone iodine solution and hydrogen peroxide 3% exploded about 100 minutes after mixing.
<b>Chemical stability</b>	Stable under recommended storage conditions.
<b>Possibility of hazardous reactions</b>	No information available.
<b>Hazardous polymerization</b>	Hazardous polymerization does not occur.
<b>Conditions to avoid</b>	None known based on available information.
<b>Incompatible materials</b>	Strong alkalis or reducing agents.
<b>Hazardous decomposition products</b>	Will not decompose under conditions of usual handling.

## 11. TOXICOLOGICAL INFORMATION

### Information on likely routes of exposure

<b>Product Information</b>	Betadine® Solution has not undergone toxicity testing in animals. The information presented below is for povidone iodine.
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<b>Inhalation</b>	<p><u>Povidone iodine</u>: Overexposure from breathing aerosols and/or iodine vapors may cause irritation to the respiratory tract, bronchitis and absorption through the lungs.</p> <p>High concentrations of iodine in the blood from inhalation or ingestion may cause thyroid disorder (hyperthyroidism), renal disturbances, acidosis, and electrolyte disturbances such as increased iodine levels and severe hyponatremia.</p> <p>Conditions that may be aggravated by exposure to povidone iodine: asthma, chronic bronchitis, and thyroid disorders.</p>
<b>Eye contact</b>	<p><u>Povidone iodine</u>: Povidone iodine has been reported to be a mild skin and eye irritant in animals.</p>
<b>Skin contact</b>	<p><u>Povidone iodine</u>: Povidone iodine has been reported to be a mild skin and eye irritant in animals.</p>
<b>Ingestion</b>	<p>May be harmful if swallowed.</p>

Chemical Name	Oral LD50	Dermal LD50	Inhalation LC50
Sodium hydroxide	-	1350 mg/kg ( Rabbit )	-
Povidone Iodine	8 g/kg ( Rat )	-	-
Polyvinylpyrrolidone	100 g/kg ( Rat )	-	-
Iodine	14 g/kg ( Rat )	-	-
Pareth 25-9	2 g/kg ( Rat ) 1600 mg/kg ( Rat )	2500 mg/kg ( Rabbit )	-

#### Information on toxicological effects

<b>Symptoms</b>	No information available.
<b>Skin corrosion/irritation</b>	Betadine® Solution is generally non-irritating to skin. However, prolonged exposure to wet solution may cause irritation or, rarely, severe skin reactions. Povidone iodine may cause skin sensitization.
<b>Sensitization</b>	<u>Povidone iodine</u> : Negative in a human insult patch test as a primary skin irritant. A few cases of dermal sensitivity exist. Chemical-like burn can occur if pooled solution is retained against a patient's skin for several hours while under pressure such as during prolonged hospital procedures (PVP-1 solution, 1% available iodine).

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

<b>Germ cell mutagenicity</b>	<p><u>Povidone iodine</u>:</p> <p>Bacterial mutagenicity: negative</p> <p>Bone marrow (hamster): negative</p> <p>Dominant lethal assay (mouse): negative</p> <p>Mouse lymphoma: negative</p> <p>Mouse micronucleus: negative</p>
<b>Carcinogenicity</b>	<u>Povidone iodone</u> : No information available.
<b>Reproductive toxicity</b>	Caused toxicity in maternal and fetal rabbits without congenital defects. Large scale case-control studies did not increase congenital abnormalities during pregnancy and vaginal treatment.
<b>STOT-single exposure</b>	No information available.
<b>STOT-repeated exposure</b>	No information available.
<b>Chronic Toxicity</b>	Long term testing of Povidone in dogs (12 months) and 2 year in dogs and rats did not cause any effects of note.

**Subchronic toxicity** Povidone iodine: In a 12-week dietary study in rats, ingestion of povidone iodine at an average povidone iodine dosage of approximately 75 to 750 mg/kg/day produced a dose-dependent increase in serum protein-bound iodine and nonspecific, reversible microscopic changes in the thyroid. No other gross or microscopic povidone iodine-induced changes were observed. At equivalent iodine dosages, dietary potassium iodide produced similar thyroid changes of equal or greater severity.

**Aspiration hazard** No information available.

**Acute toxicity** 0% of the mixture consists of ingredient(s) of unknown toxicity.

**The following values are calculated based on chapter 3.1 of the GHS document.**

**Oral LD50** 8036 mg/kg

**12. ECOLOGICAL INFORMATION**

**Ecotoxicity**

Chemical Name	Algae/aquatic plants	Fish	Toxicity to microorganisms	Crustacea
Sodium hydroxide		LC50 96 h = 45.4 mg/L (Oncorhynchus mykiss - static)		

**Persistence and degradability** No information available.

**Bioaccumulation** No information available.

**Other adverse effects** No information available.

**13. DISPOSAL CONSIDERATIONS**

**Waste treatment methods**

**Disposal of wastes** Disposal should be in accordance with applicable regional, national and local laws and regulations.

**Contaminated Packaging** Do not reuse container.

Chemical Name	California Hazardous Waste Status
Sodium hydroxide 1310-73-2	Toxic Corrosive

**14. TRANSPORT INFORMATION**

**DOT** Not regulated.

**IATA** Not regulated.

**15. REGULATORY INFORMATION**

**International Inventories**

TSCA Not determined.  
 DSL Not determined.

**Legend:**

TSCA - United States Toxic Substances Control Act Section 8 (b) Inventory  
 DSL/NDL - Canadian Domestic Substances List/Non-Domestic Substances List

**US Federal Regulations**

**SARA 313**

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product does not contain any chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372.

**SARA 311/312 Hazard Categories**

Acute Health Hazard No  
 Chronic Health Hazard No  
 Fire Hazard No  
 Sudden Release of Pressure Hazard No  
 Reactive Hazard No

**CWA (Clean Water Act)**

This product does not contain any substances regulated as pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42).

Chemical Name	CWA - Reportable Quantities	CWA - Toxic Pollutants	CWA - Priority Pollutants	CWA - Hazardous Substances
Sodium hydroxide 1310-73-2	1000 lb			X

**CERCLA**

This material, as supplied, does not contain any substances regulated as hazardous substances under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302) or the Superfund Amendments and Reauthorization Act (SARA) (40 CFR 355). There may be specific reporting requirements at the local, regional, or state level pertaining to releases of this material.

Chemical Name	Hazardous Substances RQs	CERCLA/SARA RQ	Reportable Quantity (RQ)
Sodium hydroxide 1310-73-2	1000 lb		RQ 1000 lb final RQ RQ 454 kg final RQ

**US State Regulations**

**California Proposition 65**

This product does not contain any Proposition 65 chemicals.

**US State Right-to-Know Regulations**

**US EPA Label Information**

EPA Pesticide Registration Number Not Applicable.

**16. OTHER INFORMATION**

<u>NFPA</u>	Health Hazards 1	Flammability 0	Instability 0	Physical and Chemical Properties - Personal protection X
<u>HMIS</u>	Health Hazards 1	Flammability 0	Physical Hazards 0	

**General Information**

No additional information.

**Prepared By**

This SDS was prepared by the Occupational and Environmental Assessment Section of Purdue Pharma L.P.

**Issue Date**

14-Dec-2007



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**Revision Date** 13-Apr-2015  
**Revision Note** SDS reformatted for OSHA (GHS) 2012.

**Disclaimer**

The information contained in this Safety Data Sheet is believed to be accurate and represents the best information available at the time of preparation. However, no warranty, express or implied, with respect to such information, is made. The data in this Safety Data Sheet relate only to the specific material designated herein and do not relate to use in combination with any other material. The data in this Safety Data Sheet are subject to revision as additional knowledge and experience are gained.

**End of Safety Data Sheet**