



**SIGMA-ALDRICH**

**Material Safety Data Sheet**

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Version 1.70

**Section 1 - Product and Company Information**

**Product Name** Penicillin G sodium salt  
**Product Number** P3032  
**Brand** Sigma Chemical  
**Company** Sigma-Aldrich  
**Street Address** 3050 Spruce Street  
**City, State, Zip, Country** SAINT LOUIS, MO 63103 US  
**Technical Phone:** 800-325-5832  
**Fax:** 800-325-5052  
**Emergency Phone:** 314-776-6555

**Section 2 - Composition/Information on Ingredient**

| Substance Name           | CAS #   | SARA 313 | EC no     | Annex I Index |
|--------------------------|---------|----------|-----------|---------------|
| PENICILLIN G SODIUM SALT | 69-57-8 | No       | 200-710-2 | Number        |

**Formula** C<sub>18</sub>H<sub>17</sub>N<sub>2</sub>NaO<sub>4</sub>S  
**Synonyms** American penicillin, Benzylpenicilinic acid sodium salt, Benzylpenicillin sodium, Benzylpenicillin sodium salt, Crystapen, Mycodeam, Novocillin, Pen-A-Brasive, Penicillin-G, monosodium salt, Penicillin G, sodium, Penitayn, Sodium benzylpenicillin, Sodium benzylpenicillin G, Sodium benzylpenicillinate, Sodium penicillin G, Sodium penicillin II, Velicillin

**Section 3 - Hazards Identification**

**Emergency Overview**

**Harmful:**  
May cause sensitization by inhalation and skin contact.

**HMS Rating**  
Health: 3\*      Flammability: 0      Reactivity: 0

**NFPA Rating**  
Health: 3      Flammability: 0      Reactivity: 0  
\*additional chronic hazards present.

For additional information on toxicity, please refer to Section 11.

**Section 4 - First Aid Measures**

**Oral Exposure**  
If swallowed, wash out mouth with water provided person is conscious. Call a physician.

**Inhalation Exposure**  
If inhaled, remove to fresh air. If breathing becomes difficult, call a physician.

**Dermal Exposure**  
In case of skin contact, flush with copious amounts of water for at least 15 minutes. Remove contaminated clothing and shoes. Call a physician.

**Eye Exposure**  
In case of contact with eyes, flush with copious amounts of water for at least 15 minutes. Assume adequate flushing by separating the eyelids with fingers. Call a physician.

**Section 5 - Fire Fighting Measures**

**Autoignition Temp:** N/A

**Extinguishing Media**

**Suitable**  
Water spray, Carbon dioxide, dry chemical powder, or appropriate foam.

**Firefighting**

**Protective Equipment**

Wear self-contained breathing apparatus and protective clothing to prevent contact with skin and eyes.

**Specific Hazard(s)**

Emits toxic fumes under fire conditions.

**Section 6 - Accidental Release Measures**

**Procedure(s) of Personal Precaution(s)**

Wear respirator, chemical safety goggles, rubber boots, and heavy rubber gloves.

**Methods for Cleaning Up**

Sweep up, place in a bag and hold for waste disposal. Avoid raising dust. Ventilate area and wash spill site after material pickup is complete.

**Section 7 - Handling and Storage**

**Handling**

**User Exposure**

Avoid breathing dust. Avoid contact with eyes, skin, and clothing. Avoid prolonged or repeated exposure.

**Storage**

**Suitable**

Keep tightly closed.

**Section 8 - Exposure Controls / PPE**

**Engineering Controls**

Mechanical exhaust required.

**Personal Protective Equipment**

**Respiratory**

Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU). Where risk assessment shows air-purifying respirators are appropriate use a dust mask type N95 (US) or type P1 (EN 143).

**Other**

Wear appropriate government approved respirator, chemical resistant gloves, safety goggles, other protective clothing.

**General Hygiene Measures**  
Wash thoroughly after handling. Wash contaminated clothing before reuse.

## Section 9 - Physical/Chemical Properties

|  |           |
|--|-----------|
| <b>Appearance</b>                                    |           |
| Physical State                                       | Solid     |
| Molecular Weight:                                    | 356.4 AMU |
| pH   | 5.0 - 6.5 |
| BP/MP Range  | N/A       |
| MP/MP Range  | N/A       |
| Freezing Point                                       | N/A       |
| Vapor Pressure                                       | N/A       |
| Vapor Density  | N/A       |
| Saturated Vapor Conc.                                | N/A       |
| SG/Density   | N/A       |
| Bulk Density   | N/A       |
| Odor Threshold                                       | N/A       |
| Volatile%  | N/A       |
| VOC Content  | N/A       |
| Water Content  | N/A       |
| Solvent Content                                      | N/A       |
| Evaporation Rate                                     | N/A       |
| Viscosity  | N/A       |
| Partition Coefficient                                | N/A       |
| Decomposition Temp.                                  | N/A       |
| Flash Point °F                                       | N/A       |
| Flash Point °C                                       | N/A       |
| Explosion Limits                                     | N/A       |
| Flammability   | N/A       |
| Autoignition Temp                                    | N/A       |
| Solubility   | N/A       |
| Solvent: 0.1 g/ml H <sub>2</sub> O, clear, colorless |           |
| N/A = not available                                  |           |

## Section 10 - Stability and Reactivity

|  |  |
|--|--|
| <b>Stability</b>   |  |
| Stable   |  |
| Stable   |  |
| <b>Materials to Avoid</b>  |  |
| Oxidizing agents, Acids, glycerol alcohol, Heavy metal salts.    |  |
| <b>Hazardous Decomposition Products</b>                          |  |
| <b>Hazardous Decomposition Products</b>                          |  |
| Carbon monoxide, Carbon dioxide, Nitrogen oxides, Sulfur oxides. |  |

**Hazardous Polymerization**  
**Hazardous Polymerization**  
Will not occur.

## Section 11 - Toxicological Information

|  |  |
|--|--|
| <b>Route of Exposure</b>   |  |
| Skin Contact   | May cause skin irritation.   |
| Skin Absorption  | May be harmful if absorbed through the skin.   |
| Eye Contact  | May cause eye irritation.  |
| Inhalation   | May be harmful if inhaled. Material may be irritating to mucous membranes and upper respiratory tract. |
| Ingestion  | May be harmful if swallowed.   |
| <b>Sensitization</b>   |  |
| Respiratory  | May cause allergic respiratory reaction.   |
| Skin   | May cause allergic skin reaction.  |
| <b>Signs and Symptoms of Exposure</b>  |  |
| Exposure can cause: Dermatitis. Gastrointestinal disturbances. To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated. |  |
| RTECS Number: XH9800000  |  |
| <b>Toxicity Data</b>   |  |
| Oral - Rat: 6916 mg/kg (LD50)  |  |
| Remarks: Behavioral: Tremor.   |  |
| Behavioral: Convulsions or effect on seizure threshold.  |  |
| Gastrointestinal: Other changes.   |  |
| Intravenous - Rat: 3020 MG/KG (LD50)   |  |
| Remarks: Cardiac: Other changes.   |  |
| Lungs, Thorax, or Respiration: Respiratory depression.   |  |
| Parenteral - Rat: 2600 UG/KG (LD50)  |  |
| Oral - Mouse: > 4000 mg/kg (LD50)  |  |
| Intraperitoneal - Mouse: 3314 MG/KG (LD50)   |  |
| Subcutaneous - Mouse: 4750 MG/KG (LD50)  |  |
| Intravenous - Mouse: 1500 MG/KG (LD50)   |  |
| Remarks: Behavioral: Convulsions or effect on seizure threshold.   |  |
| Behavioral: Change in motor activity (specific assay).   |  |
| Lungs, Thorax, or Respiration: Other changes.  |  |
| Intramuscular - Mouse: 2800 MG/KG (LD50)   |  |
| Intracerebral - Mouse: 3800 UG/KG (LD50)   |  |
| Remarks: Behavioral: Convulsions or effect on seizure threshold.   |  |
| <b>Chronic Exposure - Carcinogen</b>   |  |
| Rat - Subcutaneous: 1840 MG/KG 46W 1   |  |
| Result: Tumorigenic: Equivocal tumorigenic agent by RTECS criteria. Blood: Lymphomas including Hodgkin's disease.  |  |
| Tumorigenic: Tumors at site of application.  |  |

**Chronic Exposure - Teratogen**

| Species  | Dose       | Route of Application | Exposure Time |
|--|------------|----------------------|---------------|
| Rat  | 1500 MG/KG | Oral                 | (6-11D PREG)  |
| Result: Effects on Embryo or Fetus - Fetotoxicity (except death, e.g., stunted fetus). |            |                      |               |
| Rat  | 1500 MG/KG | Subcutaneous         | (1-5D PREG)   |
| Result: Effects on Embryo or Fetus - Fetotoxicity (except death, e.g., stunted fetus). |            |                      |               |

**Chronic Exposure - Reproductive Hazard**

| Species  | Dose     | Route of Application | Exposure Time |
|--|----------|----------------------|---------------|
| Mouse  | 30 MG/KG | Subcutaneous         | (14D PREG)    |
| Result: Effects on Newborn: Growth statistics (e.g., reduced weight gain). |          |                      |               |

**Section 12 - Ecological Information**

No data available.

**Section 13 - Disposal Considerations**

**Appropriate Method of Disposal of Substance or Preparation**  
Contact a licensed professional waste disposal service to dispose of this material.  
Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber.  
Observe all federal, state, and local environmental regulations.

**Section 14 - Transport Information****DOT**

Proper Shipping Name: None  
Non-Hazardous for Transport: This substance is considered to be non-hazardous for transport.

**IATA**

Non-Hazardous for Air Transport: Non-hazardous for air transport.

**Section 15 - Regulatory Information****EU Additional Classification**

Symbol of Danger: Xn  
Indication of Danger  
Harmful.  
Risk Statements  
May cause sensitization by inhalation and skin contact.  
Safety Statements  
S: 22 36/37 45  
Do not breathe dust. Wear suitable protective clothing and gloves. In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

**US Classification and Label Text**

Indication of Danger  
Harmful.  
Risk Statements  
May cause sensitization by inhalation and skin contact.  
Safety Statements  
Do not breathe dust. Wear suitable protective clothing and gloves. In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).  
United States Regulatory Information  
SARA Listed: No

**Canada Regulatory Information**

**WHMIS Classification**  
This product has been classified in accordance with the hazard criteria of the CPR, and the MSDS contains all the information required by the CPR.

DSL: Yes  
NDSL: No

**Section 16 - Other Information****Disclaimer**

For R&D use only. Not for drug, household or other uses.

**Warranty**

The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Sigma-Aldrich Inc. shall not be held liable for any damage resulting from handling or from contact with the above product. See reverse side of invoice or packing slip for additional terms and conditions of sale. Copyright 2006 Sigma-Aldrich Co. License granted to make unlimited paper copies for internal use only.