# MATERIAL SAFETY DATA SHEET

## Potassium Metabisulfite, Crystal

## 1. Product Identification

**Synonyms:** Potassium pyrosulfite; pyrosulfurous acid, dipotassium salt; disulfurous acid, dipotassium salt; potassium disulfite
**CAS No.:** 16731-55-8
**Molecular Weight:** 222.33
**Chemical Formula:** $K_2S_2O_5$
**Product Codes:** P202

## 2. Composition/Information on Ingredients

| Ingredient | CAS No | Percent | Hazardous |
|---|---|---|---|
| Potassium Metabisulfite, Crystal | 16731-55-8 | 90 - 100% | Yes |

## 3. Hazards Identification

**EMERGENCY OVERVIEW**
**WARNING!! HARMFUL IF SWALLOWED. MAY CAUSE ALLERGIC REACTION. MAY CAUSE IRRITATION TO SKIN, EYES, AND RESPIRATORY TRACT**.
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Health Rating: 1 - Slight
Flammability Rating: 0 - None
Reactivity Rating: 2 - Moderate
Contact Rating: 1 - Slight
Lab Protective Equip: GOGGLES & SHIELD; LAB COAT & APRON; VENT HOOD; PROPER GLOVES; CLASS B EXTINGUISHER
Storage Color Code: Orange (General Storage)
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**Potential Acute Health Effects:**
Although only moderately toxic in large amounts, sulfites can pose risk to some asthmatics producing central nervous system depression, bronchoconstriction and anaphylaxis. Hazardous in case of skin contact (irritant), of eye contact (irritant), of inhalation (lung irritant). Slightly hazardous in case of ingestion.
**Inhalation**:
Use of bronchodilators preserved with sulfites can cause allergic reactions.
**Ingestion**:
Not expected to be a health hazard but large amounts may cause gastrointestinal disturbances due to release of sulfur dioxide. Nausea, vomiting, diarrhea may result.

Some sensitive individuals may experience allergic reactions from foods treated with sulfites.

**Skin Contact**:

May cause irritation and possibly dermatitis.

**Eye Contact**:

May cause irritation, redness and pain.

**Potential Chronic Health Effects:**

CARCINOGENIC EFFECTS: 3 (Not classifiable for human.) by IARC. MUTAGENIC EFFECTS: Not available. TERATOGENIC EFFECTS: Not available. DEVELOPMENTAL TOXICITY: Not available. Repeated or prolonged exposure is not known to aggravate medical condition.

**Aggravation of Pre-existing Conditions:**

Some asthmatics are said to be dangerously sensitive to minute amounts of sulfites in foods and some bronchodilator medications preserved with sulfites.

## 4. First Aid Measures

**Inhalation:**

Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention for any breathing difficulty.

**Serious Inhalation:**

Not available.

**Ingestion:**

Do NOT induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. If large quantities of this material are swallowed, call a physician immediately. Loosen tight clothing such as a collar, tie, belt or waistband.

**Skin Contact:**

In case of contact, immediately flush skin with plenty of water. Cover the irritated skin with an emollient. Remove contaminated clothing and shoes. Cold water may be used. Wash clothing before reuse. Thoroughly clean shoes before reuse. Get medical attention.

**Serious Skin Contact:**

Wash with a disinfectant soap and cover the contaminated skin with an anti-bacterial cream. Seek medical attention.

**Eye Contact:**

Check for and remove any contact lenses. Wash thoroughly with running water. Get medical advice if irritation develops. Cold water may be used. Get medical attention.

## 5. Fire Fighting Measures

**Fire:**

Not considered to be a fire hazard, however, may ignite in milling, grinding, and other conditions of high friction. Toxic gases are given off in a fire

**Explosion**:

Not considered to be an explosion hazard.

**Special Remarks on Explosion Hazards**:

Not available.

**Fire Extinguishing Media:**

Use any means suitable for extinguishing surrounding fire.

**Products of Combustion:**
Not available.
**Fire Hazards in Presence of Various Substances**:
Not applicable.
**Special Information on Fire Hazards:**
When heated to decomposition it emits toxic fumes of sulfur oxides and potassium sulfate. It may ignite during milling or grinding (when powdering it).
**Fire Fighting Media and Instructions**:
Not applicable.
**Special Information:**
In the event of a fire, wear full protective clothing and NIOSH-approved self-contained breathing apparatus with full facepiece operated in the pressure demand or other positive pressure mode.

## 6. Accidental Release Measures

**Small Spill:**
Use appropriate tools to put the spilled solid in a convenient waste disposal container. Finish cleaning by spreading water on the contaminated surface and dispose of according to local and regional authority requirements.
**Large Spill:**
Use a shovel to put the material into a convenient waste disposal container. Finish cleaning by spreading water on the contaminated surface and allow to evacuate through the sanitary system.

## 7. Handling and Storage

**Precautions:**
Do not breathe dust. Wear suitable protective clothing. In case of insufficient ventilation, wear suitable respiratory equipment. If you feel unwell, seek medical attention and show the label when possible. Avoid contact with skin and eyes. Keep away from incompatibles such as oxidizing agents, acids.
**Storage:**
Keep container tightly closed. Keep container in a cool, well-ventilated area.

## 8. Exposure Controls/Personal Protection

**Airborne Exposure Limits:**
None established.
**Ventilation System:**
A system of local and/or general exhaust is recommended to keep employee exposures as low as possible. Local exhaust ventilation is generally preferred because it can control the emissions of the contaminant at its source, preventing dispersion of it into the general work area. Please refer to the ACGIH document, Industrial Ventilation, A Manual of Recommended Practices, most recent edition, for details.
**Engineering Controls:**
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.

**Personal Protection:**

Splash goggles. Lab coat. Dust respirator. Be sure to use an approved/certified respirator or equivalent. Gloves.

**Personal Protection in Case of a Large Spill:**

Splash goggles. Full suit. Dust respirator. Boots. Gloves. A self-contained breathing apparatus should be used to avoid inhalation of the product. Suggested protective clothing might not be sufficient; consult a specialist BEFORE handling this product.

**Personal Respirators:**

For conditions of use where exposure to the dust or mist is apparent, a half-face dust/mist respirator may be worn. For emergencies or instances where the exposure levels are not known, use a full-face positive-pressure, air-supplied respirator. WARNING: Air-purifying respirators do not protect workers in oxygen-deficient atmospheres.

**Skin Protection:**

Wear protective gloves and clean body-covering clothing.

**Eye Protection:**

Use chemical safety goggles. Maintain eye wash fountain and quick-drench facilities in work area.

## 9. Physical and Chemical Properties

**Appearance:**

White or colorless crystals.

**Odor:**

Sulfur dioxide.

**Solubility:**

Soluble in water

**Density:**

2.3.

**pH:**

No information found.

**% Volatiles by volume @ 21C (70F):**

0.

**Boiling Point:**

Not applicable.

**Melting Point:**

190C (374F).

**Vapor Density (Air=1):**

No information found.

**Vapor Pressure (mm Hg):**

No information found.

**Molecular Weight:**

222.31

**Evaporation Rate (BuAc=1):**

No information found.

## 10. Stability and Reactivity

**Stability:**
Oxidizes in air to sulfate, more readily in the presence of moisture.
**Conditions to Avoid:**
Heat, moisture, air, incompatibles.
**Conditions of Instability:**
Incompatible materials, moisture, air.
**Incompatibilities:**
No incompatibility data found. Strong acids, water, most common metals, and nitrates.
**Hazardous Decomposition**
Reaction with acids may release sulfur dioxide.
**Special Remarks on Reactivity:**
Liberates sulfur dioxide in contact with acids. Air sensitive. Moisture sensitive. It oxidizes to in air to sulfate, more readily in presence of moisture.
**Corrosivity:**
Non-corrosive in presence of glass.
**Hazardous Polymerization:**
Will not occur.

## 11. Toxicological Information

**Routes of Entry:**
Inhalation. Ingestion.
**Toxicity to Animals:**
LD50: Not available. LC50: Not available.
**Chronic Effects on Humans:**
CARCINOGENIC EFFECTS: 3 (Not classifiable for human.) by IARC.
**Other Toxic Effects on Humans:**
Hazardous in case of skin contact (irritant), of inhalation (lung irritant). Slightly hazardous in case of ingestion.
**Special Remarks on Chronic Effects on Humans**:
May cause adverse reproductive effects based on animal test data. May affect genetic material (mutagenic).
**Special Remarks on other Toxic Effects on Humans:**
**Acute Potential Health Effects:**
***Skin***:
May cause skin irritation.
***Eyes***:
May cause eye irritation.
***Inhalation***:
May cause respiratory tract irritation. May cause asthmatic attacks due to allergic sensitization of the respiratory tract.
***Ingestion***:
May cause gastrointestinal tract irritation with abdominal pain, nausea, vomiting and diarrhea. May cause allergic/hypersensitivity/ anaphylactoid reaction. Some asthmatics are said to be sensitive to minute amounts of sulfites in foods. It may cause a worsening of asthma in asthmatics. Individuals sensitive to sulfides may experience stomach upset, tightness in the chest, or wheezing. Extremely large concentrations may produce central nervous system, seizures, hypotension, tachycardia, and cardiovascular collapse.

## 12. Ecological Information

**Ecotoxicity:**
Not available
**Products of Biodegradation:**
Possibly hazardous short term degradation products are not likely. However, long term degradation products may arise.
**Toxicity of the Products of Biodegradation:**
The product itself and its products of degradation are not toxic.

## 13. Disposal Considerations

Whatever cannot be saved for recovery or recycling should be handled as hazardous waste and sent to a RCRA approved waste facility. Processing, use or contamination of this product may change the waste management options. State and local disposal regulations may differ from federal disposal regulations. Dispose of container and unused contents in accordance with federal, state and local requirements.
**Waste Disposal**:
Waste must be disposed of in accordance with federal, state and local environmental control regulations.

## 14. Transport Information

**DOT Classification:**
Not a DOT controlled material
**Identification**:
Not applicable
**Special Provisions for Transport**:
Not available.
**Protective Equipment:**
Gloves (impervious). Synthetic apron. Vapor respirator. Be sure to use an approved/certified respirator or equivalent. Wear appropriate respirator when ventilation is inadequate. Splash goggles.

## 15. Other Information

**NFPA Ratings:** Health: **1** Flammability: **0** Reactivity: **0**

**Label Hazard Warning**:
WARNING! HARMFUL IF SWALLOWED. MAY CAUSE ALLERGIC REACTION. MAY CAUSE IRRITATION TO SKIN, EYES, AND RESPIRATORY TRACT.
**Label Precautions**:
Avoid breathing dust.
Keep container closed.
Use with adequate ventilation.
Avoid contact with eyes, skin and clothing.
Wash thoroughly after handling.

For Reagent and Technical Grades: Not for Food Use. For TAC Grades: Do not use in meats or in foods recognized as a source of Vitamin B-1, nor in fruits or vegetables to be served or sold raw to consumers or to be presented to consumers as fresh.

**Label First Aid**:

If swallowed, induce vomiting immediately as directed by medical personnel. Never give anything by mouth to an unconscious person. In case of contact, immediately flush eyes or skin with plenty of water for at least 15 minutes. If inhaled, remove to fresh air. Get medical attention for any breathing difficulty. In all cases call a physician.

**Product Use:**

Laboratory Reagent.

***Revision Information:***

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