

# Safety Data Sheet

According to U.S.A. Federal Hazcom 2012 and Canadian HPR - WHMIS 2015

## 1. Identification

### 1.1. Product identifier

Code HI3895P-0  
 Product name Phosphorus Reagent

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

Intended use Determination of Phosphorus in Soil (Extract) Samples.

### 1.3. Details of the supplier of the safety data sheet

Name Hanna Instruments S.R.L.  
 Full address str. Hanna Nr 1  
 District and Country 457260 loc. Nusfalau (Salaj)  
 Romania  
 Tel. +40 260607700  
 Fax +40 260607700

e-mail address of the competent person responsible for the Safety Data Sheet msds@hanna.ro

Supplier: Hanna Instruments, Inc - 584 Park East Drive, Woonsocket, Rhode Island, USA  
 02895 - Technical Service Contact Information: +1 8004266287 - e-mail: sds@hannainst.com

### 1.4. Emergency telephone number

For urgent inquiries refer to USA Emergency Contact Information: +1 8004249300 - CHEMTREC 24 hours/365 days - International Emergency Contact Information: +1 7035273887 - CHEMTREC 24 hours/365 days

## 2. Hazards identification

### 2.1. Classification of the substance or mixture

The product is classified as hazardous pursuant to the provisions set forth in OSHA Hazard Communication Standard (HCS) (29 CFR 1910.1200). The product thus requires a safety datasheet.

Any additional information concerning the risks for health and/or the environment are given in sections 11 and 12 of this sheet.

#### Classification and Hazard Statement

Acute toxicity, category 3

Skin corrosion, category 1

Serious eye damage, category 1

Toxic if inhaled.

Causes severe skin burns and eye damage.

Causes serious eye damage.

#### Hazard pictograms:



Signal words: Danger

#### Hazard statements:

H331

Toxic if inhaled.

H314

Causes severe skin burns and eye damage.

#### Precautionary statements:

##### Prevention:

P260

Do not breathe dust, fume, gas, mist, vapours, spray.

P280

Wear protective gloves / protective clothing / eye protection / face protection.

##### Response:

P303+P361+P353

IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water / shower.

P305+P351+P338

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

**2. Hazards identification** ... / >>

P310 Storage: Immediately call a POISON CENTER or doctor.

Disposal: --

The mixture contains 7.72% of components of unknown acute inhalation toxicity.

**2.2. Other hazards**

Additional hazards  
 Corrosive to the respiratory tract.  
 Contains:  
 POTASSIUM ANTIMONYL TARTRATE  
 May produce an allergic reaction.

**3. Composition/information on ingredients**

**3.2. Mixtures**

Contains:

Identification	x = Conc. %	Classification:
POTASSIUM DISULFATE	50 ≤ x < 100	Acute toxicity, category 3 H331, Skin corrosion, category 1A H314, Serious eye damage, category 1 H318
EC 232-216-8		
CAS 7790-62-7		
REACH Reg. 01-2119987095-26		
POTASSIUM ANTIMONYL TARTRATE	0 ≤ x < 0.5	Acute toxicity, category 4 H302, Acute toxicity, category 4 H332, Skin irritation, category 2 H315, Skin sensitization, category 1 H317, Hazardous to the aquatic environment, chronic toxicity, category 2 H411
INDEX 051-003-00-9		
EC 234-293-3		
CAS 28300-74-5		

\* There is a batch to batch variation.

The full wording of hazard (H) phrases is given in section 16 of the sheet.

**4. First-aid measures**

**4.1. Description of first aid measures**

EYES: Remove contact lenses, if present. Wash immediately with plenty of water for at least 30-60 minutes, opening the eyelids fully. Get medical advice/attention.  
 SKIN: Remove contaminated clothing. Rinse skin with a shower immediately. Get medical advice/attention.  
 INGESTION: Have the subject drink as much water as possible. Get medical advice/attention. Do not induce vomiting unless explicitly authorised by a doctor.  
 INHALATION: Get medical advice/attention immediately. Remove victim to fresh air, away from the accident scene. If the subject stops breathing, administer artificial respiration. Take suitable precautions for rescue workers.

**4.2. Most important symptoms and effects, both acute and delayed**

Specific information on symptoms and effects caused by the product are unknown.

POTASSIUM DISULFATE  
 Irritation and corrosion, Cough, Shortness of breath. Risk of blindness!.

POTASSIUM ANTIMONYL TARTRATE  
 Irritant effects, Cough, Shortness of breath, Dermatitis, Cyanosis, pain, Dizziness, agitation, bloody diarrhoea, Vomiting, Headache, paralysis symptoms, Coma, death. The following applies to trivalent antimony compounds in general: after uptake and absorption as a result of misuse or improper handling, drop in blood pressure, hepatotoxic effect, in some circumstances myalgia, dyspnoea, dermatitis.

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

Information not available

## 5. Fire-fighting measures

### 5.1. Extinguishing media

#### SUITABLE EXTINGUISHING EQUIPMENT

The extinguishing equipment should be of the conventional kind: carbon dioxide, foam, powder and water spray.

#### UNSUITABLE EXTINGUISHING EQUIPMENT

None in particular.

### 5.2. Special hazards arising from the substance or mixture

#### HAZARDS CAUSED BY EXPOSURE IN THE EVENT OF FIRE

Do not breathe combustion products. The product is combustible and, when the powder is released into the air in sufficient concentrations and in the presence of a source of ignition, it can create explosive mixtures with air. Fires may start or get worse by leakage of the solid product from the container, when it reaches high temperatures or through contact with sources of ignition.

#### POTASSIUM DISULFATE

Not combustible. Ambient fire may liberate hazardous vapours. Fire may cause evolution of: Sulphur oxides.

### 5.3. Advice for firefighters

#### GENERAL INFORMATION

Use jets of water to cool the containers to prevent product decomposition and the development of substances potentially hazardous for health. Always wear full fire prevention gear. Collect extinguishing water to prevent it from draining into the sewer system. Dispose of contaminated water used for extinction and the remains of the fire according to applicable regulations.

#### SPECIAL PROTECTIVE EQUIPMENT FOR FIRE-FIGHTERS

Normal fire fighting clothing i.e. fire kit (BS EN 469), gloves (BS EN 659) and boots (HO specification A29 and A30) in combination with self-contained open circuit positive pressure compressed air breathing apparatus (BS EN 137).

## 6. Accidental release measures

### 6.1. Personal precautions, protective equipment and emergency procedures

If there are no contraindications, spray powder with water to prevent the formation of dust.

Wear suitable protective equipment (including personal protective equipment referred to under Section 8 of the safety data sheet) to prevent any contamination of skin, eyes and personal clothing. These indications apply for both processing staff and those involved in emergency procedures.

### 6.2. Environmental precautions

The product must not penetrate into the sewer system or come into contact with surface water or ground water.

### 6.3. Methods and material for containment and cleaning up

Collect the leaked product and place it in containers for recovery or disposal. If there are no contraindications, use jets of water to eliminate product residues.

Make sure the leakage site is well aired. Evaluate the compatibility of the container to be used, by checking section 10. Contaminated material should be disposed of in compliance with the provisions set forth in point 13.

### 6.4. Reference to other sections

Any information on personal protection and disposal is given in sections 8 and 13.

## 7. Handling and storage

### 7.1. Precautions for safe handling

Before handling the product, consult all the other sections of this material safety data sheet. Avoid leakage of the product into the environment. Do not eat, drink or smoke during use. Remove any contaminated clothes and personal protective equipment before entering places in which people eat.

### 7.2. Conditions for safe storage, including any incompatibilities

Store only in the original container. Store the containers sealed, in a well ventilated place, away from direct sunlight. Keep containers away from any incompatible materials, see section 10 for details.

### 7.3. Specific end use(s)

Information not available

## 8. Exposure controls/personal protection

### 8.1. Control parameters

Regulatory References:

TLV-ACGIH                      ACGIH 2021

#### POTASSIUM ANTIMONYL TARTRATE

Threshold Limit Value						
Type	Country	TWA/8h		STEL/15min		Remarks / Observations
		mg/m3	ppm	mg/m3	ppm	
TLV-ACGIH	-	0.5				

Legend:

(C) = CEILING ; INHAL = Inhalable Fraction ; RESP = Respirable Fraction ; THORA = Thoracic Fraction.

### 8.2. Exposure controls

As the use of adequate technical equipment must always take priority over personal protective equipment, make sure that the workplace is well aired through effective local aspiration. Personal protective equipment must comply with current regulations.

#### HAND PROTECTION

In the case of prolonged contact with the product, protect the hands with penetration-resistant work gloves (OSHA 29 CFR 1910.138). Work glove material must be chosen according to the use process and the products that may form. Latex gloves may cause sensitivity reactions.

#### SKIN PROTECTION

Wear category I professional long-sleeved overalls and safety footwear. Wash body with soap and water after removing protective clothing.

#### EYE PROTECTION

Wear airtight protective goggles (OSHA 29 CFR 1910.133).

#### RESPIRATORY PROTECTION

Use a NIOSH certified filtering facemask (NIOSH 42 CFR 84, OSHA 29 CFR 1910.134) or equivalent device, whose class and effective need, must be defined according to the outcome of risk assessment.

#### ENVIRONMENTAL EXPOSURE CONTROLS

The emissions generated by manufacturing processes, including those generated by ventilation equipment, should be checked to ensure compliance with environmental standards.

## 9. Physical and chemical properties

### 9.1. Information on basic physical and chemical properties

Properties	Value	Information
Appearance	solid powder	
Colour	white	
Odour	odourless	
Odour threshold	not available	
pH	1.2 - 1.5	Method:ASTM D1293-18 Concentration: 1.8 % Temperature: 25 °C
Melting point / freezing point	not available	
Initial boiling point	not applicable	
Boiling range	not available	
Flash point	not applicable	
Evaporation rate	not available	
Flammability	not available	
Lower inflammability limit	not available	
Upper inflammability limit	not available	
Lower explosive limit	not available	
Upper explosive limit	not available	
Vapour pressure	not available	
Vapour density	not available	
Relative density	2	
Solubility	soluble in water	
Partition coefficient: n-octanol/water	not available	
Auto-ignition temperature	not available	
Decomposition temperature	not available	
Viscosity	not available	
Explosive properties	not available	

## 9. Physical and chemical properties [... / >>](#)

Oxidising properties	not available
9.2. Other information	
Total solids (250°C / 482°F)	100,00 %

## 10. Stability and reactivity

### 10.1. Reactivity

There are no particular risks of reaction with other substances in normal conditions of use.

### 10.2. Chemical stability

The product is stable in normal conditions of use and storage.

### 10.3. Possibility of hazardous reactions

The powders are potentially explosive when mixed with air.

### 10.4. Conditions to avoid

Avoid environmental dust build-up.

POTASSIUM DISULFATE  
Exposure to moisture.

### 10.5. Incompatible materials

Information not available

### 10.6. Hazardous decomposition products

Information not available

## 11. Toxicological information

In the absence of experimental data for the product itself, health hazards are evaluated according to the properties of the substances it contains, using the criteria specified in the applicable regulation for classification.  
It is therefore necessary to take into account the concentration of the individual hazardous substances indicated in section 3, to evaluate the toxicological effects of exposure to the product.

### 11.1. Information on toxicological effects

#### POTASSIUM DISULFATE

Acute inhalation toxicity, absorption, Symptoms: mucosal irritations, Cough, Shortness of breath, Possible damages, damage of respiratory tract, Lung oedema, Symptoms may be delayed - Skin irritation (in analogy to similar products), Causes severe burns. - Eye irritation (in analogy to similar products), Causes serious eye damage. Risk of blindness!

#### POTASSIUM ANTIMONYL TARTRATE

Acute oral toxicity, absorption, Symptoms: pain in, mouth, oesophagus, gastrointestinal tract - Skin irritation, Possible damages: slight irritation - Eye irritation, Possible damages: slight irritation.

#### Metabolism, toxicokinetics, mechanism of action and other information

Information not available

#### Information on likely routes of exposure

Information not available

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

Information not available

#### Interactive effects

Information not available

#### ACUTE TOXICITY

Corrosive to the respiratory tract.

## 11. Toxicological information ... / >>

POTASSIUM DISULFATE  
LD50 (Oral): 2140 mg/kg Rat  
LC50 (Inhalation mists/powders): 0.85 mg/l/4h Rat

POTASSIUM ANTIMONYL TARTRATE  
LD50 (Oral): 115 mg/kg Rat

### SKIN CORROSION / IRRITATION

Corrosive for the skin  
Classification according to the experimental Ph value

### SERIOUS EYE DAMAGE / IRRITATION

Causes serious eye damage

### RESPIRATORY OR SKIN SENSITISATION

Contains:  
POTASSIUM ANTIMONYL TARTRATE  
May produce an allergic reaction.

### GERM CELL MUTAGENICITY

Does not meet the classification criteria for this hazard class

### CARCINOGENICITY

Does not meet the classification criteria for this hazard class

### REPRODUCTIVE TOXICITY

Does not meet the classification criteria for this hazard class

### STOT - SINGLE EXPOSURE

Does not meet the classification criteria for this hazard class

### STOT - REPEATED EXPOSURE

Does not meet the classification criteria for this hazard class

### ASPIRATION HAZARD

Does not meet the classification criteria for this hazard class

## 12. Ecological information

Use this product according to good working practices. Avoid littering. Inform the competent authorities, should the product reach waterways or contaminate soil or vegetation.

### 12.1. Toxicity

POTASSIUM DISULFATE  
LC50 - for Fish 680 mg/l/96h Pimephales promelas  
EC50 - for Crustacea 720 mg/l/48h Daphnia magna  
POTASSIUM ANTIMONYL TARTRATE  
LC50 - for Fish 6.2 mg/l/96h Cyprinodon variegatus

### 12.2. Persistence and degradability

**12. Ecological information** ... / >>

POTASSIUM ANTIMONYL TARTRATE

Solubility in water > 10000 mg/l

**12.3. Bioaccumulative potential**

POTASSIUM ANTIMONYL TARTRATE

Partition coefficient: n-octanol/water -8.32 Log Kow

**12.4. Mobility in soil**

Information not available

**12.5. Results of PBT and vPvB assessment**

On the basis of available data, the product does not contain any PBT or vPvB in percentage  $\geq$  than 0,1%.

**12.6. Other adverse effects**

Information not available

**13. Disposal considerations**

**13.1. Waste treatment methods**

Reuse, when possible. Neat product residues should be considered special non-hazardous waste.

Disposal must be performed through an authorised waste management firm, in compliance with national and local regulations.

**CONTAMINATED PACKAGING**

Contaminated packaging must be recovered or disposed of in compliance with national waste management regulations.

**14. Transport information**

**14.1. UN number**

ADR / RID, IMDG, IATA: 2923

**14.2. UN proper shipping name**

ADR / RID: CORROSIVE SOLID, TOXIC, N.O.S. (POTASSIUM DISULFATE) MIXTURE

IMDG: CORROSIVE SOLID, TOXIC, N.O.S. (POTASSIUM DISULFATE) MIXTURE

IATA: CORROSIVE SOLID, TOXIC, N.O.S. (POTASSIUM DISULFATE) MIXTURE

**14.3. Transport hazard class(es)**

ADR / RID: Class: 8 Label: 8 (6.1)



IMDG: Class: 8 Label: 8 (6.1)



IATA: Class: 8 Label: 8 (6.1)



**14.4. Packing group**

ADR / RID, IMDG, IATA: II

**14.5. Environmental hazards**

ADR / RID: NO

IMDG: NO

IATA: NO

## 14. Transport information ... / >>

### 14.6. Special precautions for user

ADR / RID:	HIN - Kemler: 86	Limited Quantities: 1 kg	Tunnel restriction code: (E)
IMDG:	Special provision: -	Limited Quantities: 1 kg	
IATA:	EMS: F-A, S-B	Maximum quantity: 50 Kg	Packaging instructions: 863
	Cargo:	Maximum quantity: 15 Kg	Packaging instructions: 859
	Pass.:	A3, A803	
	Special provision:		

### 14.7. Transport in bulk according to Annex II of Marpol and the IBC Code

Information not relevant

## 15. Regulatory information

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

#### U.S. Federal Regulations

Clean Air Act Section 112(b):  
No component(s) listed.

Clean Air Act Section 602 Class I Substances:  
No component(s) listed.

Clean Air Act Section 602 Class II Substances:  
No component(s) listed.

Clean Water Act – Priority Pollutants:  
No component(s) listed.

Clean Water Act – Toxic Pollutants:  
No component(s) listed.

DEA List I Chemicals (Precursor Chemicals):  
No component(s) listed.

DEA List II Chemicals (Essential Chemicals):  
No component(s) listed.

EPA List of Lists:  
313 Category Code:  
28300-74-5 POTASSIUM ANTIMONYL TARTRATE

EPCRA 302 EHS TPQ:  
No component(s) listed.

EPCRA 304 EHS RQ:  
No component(s) listed.

CERCLA RQ:  
28300-74-5 POTASSIUM ANTIMONYL TARTRATE

EPCRA 313 TRI:  
28300-74-5 POTASSIUM ANTIMONYL TARTRATE

RCRA Code:  
No component(s) listed.

CAA 112 (r) RMP TQ:  
No component(s) listed.

#### State Regulations

Massachusetts:  
28300-74-5 POTASSIUM ANTIMONYL TARTRATE

15. Regulatory information ... / >>

Minnesota:

No component(s) listed.

New Jersey:

28300-74-5 POTASSIUM ANTIMONYL TARTRATE

New York:

28300-74-5 POTASSIUM ANTIMONYL TARTRATE

Pennsylvania:

28300-74-5 POTASSIUM ANTIMONYL TARTRATE

California:

28300-74-5 POTASSIUM ANTIMONYL TARTRATE

Proposition 65:

This product does not contain any substances known to the State of California to cause cancer, reproductive harm or birth defects.

International Regulations

Substances subject to exportation reporting pursuant to Regulation (EU) 649/2012:

None

Substances subject to the Rotterdam Convention:

None

Substances subject to the Stockholm Convention:

None

16. Other information

Text of hazard (H) indications mentioned in section 2-3 of the sheet:

H331	Toxic if inhaled.
H302	Harmful if swallowed.
H332	Harmful if inhaled.
H314	Causes severe skin burns and eye damage.
H318	Causes serious eye damage.
H315	Causes skin irritation.
H317	May cause an allergic skin reaction.
H411	Toxic to aquatic life with long lasting effects.

LEGEND:

- 313 CATEGORY CODE: Emergency Planning and Community Right-to Know Act Section 313 Category Code
- ADR: European Agreement concerning the carriage of Dangerous goods by Road
- ATE: Acute Toxicity Estimate
- CAA 112 © RMP TQ: Risk Management Plan Threshold Quantity (Clean Air Act Section 112©)
- CAS: Chemical Abstract Service Number
- CE50: Effective concentration (required to induce a 50% effect)
- CERCLA RQ: Reportable Quantity (Comprehensive Environment Response, Compensation, and Liability Act)
- CLP: Regulation (EC) 1272/2008
- DEA: Drug Enforcement Administration
- EmS: Emergency Schedule
- EPA: US Environmental Protection Agency
- EPCRA: Emergency Planning and Community Right-to Know Act
- EPCRA 302 EHS TPQ: Extremely Hazardous Substance Threshold Planning Quantity (Section 302 Category Code)
- EPCRA 304 EHS RQ: Extremely Hazardous Substance Reportable Quantity (Section 304 Category Code)
- EPCRA 313 TRI: Toxics Release Inventory (Section 313 Category Code)
- GHS: Globally Harmonized System of classification and labeling of chemicals
- IATA DGR: International Air Transport Association Dangerous Goods Regulation
- IC50: Immobilization Concentration 50%
- IMDG: International Maritime Code for dangerous goods
- IMO: International Maritime Organization
- LC50: Lethal Concentration 50%
- LD50: Lethal dose 50%
- OEL: Occupational Exposure Level
- PEL: Predicted exposure level
- RCRA Code: Resource Conservation and Recovery Act Code
- REACH: Regulation (EC) 1907/2006
- REL: Recommended exposure limit
- RID: Regulation concerning the international transport of dangerous goods by train

16. Other information ... / >>

- TLV: Threshold Limit Value
- TLV CEILING: Concentration that should not be exceeded during any time of occupational exposure.
- TSCA: Toxic Substances Control Act
- TWA: Time-weighted average exposure limit
- TWA STEL: Short-term exposure limit
- VOC: Volatile organic Compounds
- WHMIS: Workplace Hazardous Materials Information System.

GENERAL BIBLIOGRAPHY:

- GHS rev. 3
- The Merck Index. 10th Edition
- Handling Chemical Safety
- Niosh - Registry of Toxic Effects of Chemical Substances
- INRS - Fiche Toxicologique (toxicological sheet)
- Patty - Industrial Hygiene and Toxicology
- N.I. Sax - Dangerous properties of Industrial Materials-7, 1989 Edition
- ECHA website
- Database of SDS models for chemicals - Ministry of Health and ISS (Istituto Superiore di Sanità) - Italy
  
- 6 NYCRR part 597
- Cal/OSHA website
- California Safe Drinking Water and Toxic Enforcement Act
- EPA website
- Hazard Communication Standard (HCS 2012)
- IARC website
- List Of Lists EPA: Consolidated List of Chemicals Subject to EPCRA, CERCLA and Section 112® of the Clean Air Act
- Massachusetts 105 CMR Department of public health 670.000: "Right to Know"
- Minnesota Chapter 5206 Department Of Labor and Industry Hazardous Substances, Employee "Right to Know".
- New Jersey Worker and Community Right to know Act N.J.S.A.
- NTP. 2011. Report on Carcinogens, 12th Edition.
- OSHA website
- Pennsylvania, Hazardous Substance List, Chapter 323

Note for users:

The information contained in the present sheet are based on our own knowledge on the date of the last version. Users must verify the suitability and thoroughness of provided information according to each specific use of the product.

This document must not be regarded as a guarantee on any specific product property.

The use of this product is not subject to our direct control; therefore, users must, under their own responsibility, comply with the current health and safety laws and regulations. The producer is relieved from any liability arising from improper uses.

Provide appointed staff with adequate training on how to use chemical products.

CALCULATION METHODS FOR CLASSIFICATION

Product classification derives from criteria established by the OSHA Hazard Communication Standard (HCS) (29 CFR 1910.1200), unless determined otherwise in Section 11 and 12. The data for evaluation of chemical-physical properties are reported in section 9.

Changes to previous review:

The following sections were modified:

02 / 03 / 08 / 09 / 11 / 12.