



Section 1: Identification

Product Name: Sodium-Potassium Alloy Metal, Liquid (NaK)

Manufacturing Company: Creative Engineers, Inc.
15425 Elm Dr.
New Freedom, Pa 17349, USA

Information Contact: info@creativeengineers.com
(443) 807-1202

Section 2: Hazards Identification

Emergency Telephone Number: Chemtrec (800) 424-9300

GHS Classification in accordance with 29 CFR 1910.1200 (OSHA HCS)

Substances and mixtures, which in contact with water, emit flammable gases (category 1), H260
Skin Corrosion (Category 1B), H314
Serious eye damage (Category 1), H318

GHS Label elements, including precautionary statements

Pictogram:



Signal Word: Danger

Hazard Statement(s)

H260	Substances and mixtures, which in contact with water, emit flammable gases
H314	Causes severe skin burns and eye damage
H318	Causes serious eye damage

Precautionary Statement(s)

P223	Keep away from any possible contact with water, because of violent reaction and possible flash fire.
P231+P232	Handle under inert gas. Protect from moisture.
P260	Do not breathe dust or mist.
P264	Wash skin thoroughly after handling
P280	Wear protective gloves/protective clothing/eye protection/face protection.
P301+P340+P331	IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
P303+P361+P353	IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.
P304+P340+P310	IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Immediately call a POISON CENTER or doctor/physician.
P305+P351+P338+P310	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER or doctor/physician.
P335+P334	Brush off loose particles from skin. Immerse in cool water/wrap in wet bandages
P363	Wash contaminated clothing before reuse.
P370+P378	In case of fire: Use dry sand, dry chemical or alcohol-resistant foam for extinction.
P402+P404	Store in a dry place. Store in a closed container.
P405	Store locked up.
P501	Dispose of contents/container to an approved waste disposal plant.

Hazards not otherwise classified (HNOC) or not covered by GHS

Reacts violently with water

Section 3: Composition/Information on Ingredients

NFPA RATINGS (SCALE 0-4): Health = 3; Fire = 3; Reactivity = 2 (W)

Component	CAS Number	Percentage w/w
Sodium-Potassium Alloy	11135-81-2	100%

Section 4: First Aid Measures**Description of first aid measures****General Advice:**

Consult a physician. Show this safety data sheet to the doctor in attendance. Move out of dangerous area.

Inhalation:

If adverse effects occur, remove to uncontaminated area. Give artificial respiration if not breathing. If breathing is difficult, qualified personnel should administer oxygen. Get immediate medical attention.

Skin Contact:

Wash skin with soap and water for at least 15 minutes while removing contaminated clothing and shoes. Get immediate medical attention. Thoroughly clean and dry contaminated clothing and shoes before reuse. Destroy contaminated shoes.

Eye Contact:

Immediately flush eyes with plenty of water for at least 15 minutes. Then get immediate medical attention

Ingestion:

If swallowed, drink plenty of water. Do NOT induce vomiting. Get immediate medical attention.

Most important symptoms and effects, both acute and delayed

The most important known symptoms and effects are described in the labeling (see section 2) and/or section 11.

Indication of any immediate medical attention and special treatment

No data available.

Section 5: Firefighting Measures**Extinguishing Media**

Regular dry chemical, dry sand, lime, soda ash

Special hazards arising from the substance or mixture

Severe fire hazard. Heavier than air vapor. May ignite if exposed to shock, friction or heating. Avoid friction and static electricity.

Advice for firefighters

Do not use water. Do not use foam. Move container from fire area if it can be done without risk.

Section 6: Accidental Release Measures**Personal precautions, protective equipment and emergency procedure**

Avoid inhalation. Avoid contact with the skin, eyes and clothing. Ensure adequate ventilation. Remove all sources of ignition. Use breathing apparatus if exposed to vapors/dust/aerosol. Use personal protective clothing.

Environmental precautions

Prevent further leakage or spillage if safe to do so. Do not let product enter drains.

Methods and materials for containment and clean up

Small spills: Do not touch spilled material. Wear appropriate personal protective equipment. Prepare to fight fire. Cover with DRY dolomite, DRY sand, or Ansul's Met-L-X. Scoop into a DRY metal container with additional extinguisher powder, properly label, and cover. Take immediately to a waste handling area.

Large spills: Keep unnecessary people away, isolate hazard area and deny entry. Stay upwind and keep out of low areas. Notify local Emergency Planning Committee and State Emergency Response Commission for release greater than or equal to RQ (U.S. SARA Section 304). If release occurs in the U.S. and is reportable under CERCLA Section 103, notify the National Response Center at (800) 424-8802(USA) or (202) 426-2675(USA).

Reference to other sections

For disposal see section 13

Section 7: Handling and Storage**Precautions for safe handling**

Ensure thorough ventilation of work areas. Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin and eyes. For precautions see section 2.

Conditions for safe storage, including any incompatibilities

Store in original container and tightly closed. Never allow product to get in contact with water during storage. Air sensitive material. Handle and store under inert gas.

Storage class (TRGS 510): hazardous materials, which set free flammable gases upon contact with water.

Specific end use(s)

Pure elemental Sodium (Na). Used in various industries and laboratories.

Section 8: Exposure Controls/Personal Protection**Control parameters**

Contains no substances with occupational exposure limit values.

Exposure controls**Appropriate engineering controls**

Handle in accordance with good industrial hygiene and safety practices. Wash hands before breaks and at the end of workday.

Personal protective equipment

EYE PROTECTION: Wear splash resistant safety goggles with a face-shield. Provide an emergency eye wash fountain and quick drench shower in the immediate work area. In accordance with NIOSH (US) or EN 166 (EU).

CLOTHING: Wear appropriate fireproof clothing.

GLOVES: Wear appropriate fireproof gloves.

Material: Leather welding gloves with latex rubber or nitrile disposable gloves underneath.

RESPIRATOR: Good adequate ventilation is sufficient. No respirator need, but avoid standing downwind of vapors.

Control of environmental exposure

Prevent further leakage or spillage if safe to do so. Do not let product enter drains.

Section 9: Physical and Chemical Properties

Physical state: Liquid

Color: Grey

Change in appearance: changes color on exposure to air

Odor: No data available

Boiling point: 1445°F (785°C) @ 760 mmHg [literature]

Melting point: 9.3°F (-12.6°C) @ 760 mmHg [literature]

Vapor Pressure: 1 hPa (1 mmHg) @ 671°F (355°C)

Vapor Density: No data available

Specific gravity (water=1): 0.866 g/cm³

Water solubility: Violently Reacts

pH (@ 1% w/w D.I. H₂O): No data available

Viscosity: No data available

Section 10: Stability and Reactivity**Reactivity**

Reacts violently with water (H₂O)

Chemical stability

Stable under recommended storage conditions

Possibility for hazardous reactions

When reacting with water, caustic sodium hydroxide is formed and hydrogen gas.

Conditions to avoid

Avoid contact with air. Do not get water inside container. Keep out of water supplies and sewers. Avoid exposure to water.

Incompatible materials

Oxidation materials, acids, alcohols and halogens

Hazardous decomposition products

No data available. In event of fire: See Section 5.

Section 11: Toxicological Information

Sodium is not available in the body due to its almost immediate deterioration on contact with mucosa (production of sodium hydroxide and hydrogen). Based on deterioration, sodium is corrosive due to sodium hydroxide (soda).

Acute effects:

Contact with eyes/skin: Corrosiveness

Ingestion: Pain, vomiting, diarrhea, fainting

Danger due to inhalation: No dust
Chronic effects:
Chronic toxicities: Chronic dermatitis, irritation of the mucosa, lung damage (effect of sodium hydroxide).

Section 12: Ecological Information

Toxicity

No data available

Persistence and degradability

In the environment, the substance rapidly reacts with moisture/water into sodium hydroxide, which is corrosive, and then into sodium carbonate.

Bioaccumulative potential

There is no known example of bioaccumulation

Mobility in soil

No data available

Results of PBT and vPvB assessment

Not applicable (inorganic substance)

Section 13: Disposal Considerations

Dispose in accordance with all applicable regulations. Subject to disposal regulation: U.S. EPA 40 CFR 262. Hazardous waste number(s): D001. D003.

Section 14: Transport Information

U.S. DOT 49 CFR 172.101

PROPER SHIPPING NAME: Potassium sodium alloys, liquid

UN NUMBER: UN 1422

HAZARD CLASS OR DIVISION: 4.3

PACKING GROUP: I

LABELING REQUIREMENTS: 4 (Dangerous When Wet)

REPORTABLE QUANTITY (RQ): 10 lbs (sodium)

IMDG

SHIPPING NAME: Potassium sodium alloy, liquid

UN NUMBER: UN 1422

CLASSIFICATION: 4.3

PACKING GROUP: I

EMS-No: F-G, S-L

IATA

SHIPPING NAME: Potassium sodium alloy, liquid

UN NUMBER: UN 1422

HAZARD CLASS OR DIVISION: 4.3

PACKING GROUP: I

IATA PASSENGER: Not permitted for transport (COA)

Section 15: Regulatory Information

SARA 302 Components

Not regulated

SARA 313 Components

Not regulated

OSHA Process Safety (29 CFR 1910.119)

Not regulated

Pennsylvania Right to Know Components

Sodium-Potassium Alloy (NaK)

CAS No. 11135-81-2

Massachusetts Right to Know Components

Sodium-Potassium Alloy (NaK)

CAS No. 11135-81-2

California Prop. 65 Components

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

National Inventory Status

U.S. Inventory (TSCA): Not-Listed

TSCA 12(b) Export Notification: Not-Listed

Section 16: Other Information

Preparation date: 11 September 2019

Prepared by: Creative Engineers, Inc. Compliance Officer

Revision date: 24 April 2023

Revision notes:

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