

1. IDENTIFICATION OF THE SUBSTANCE

1.1 Substance Identification

Substance: Dialuminum Chloride Pentahydroxide
Trade Name: KR-B4000B
Synonyms: Aluminum Chlorohydrate
CAS No: 12042-91-0
EC number: 234-933-1

1.2 Uses of the Substance

This material is used as a water treatment coagulant.

1.3 Details of the Supplier

Manufacturer: Kroff Inc.
Address: Suite 450, One North Shore Center, 12 Federal St., Pittsburgh, PA 15212
Telephone: + 1 412 321 9800

1.4 Emergency Telephone Number

+ 1 800 424 9300

2. HAZARDS IDENTIFICATION

2.1 Classification: Not Regulated, No Hazard

2.3 Label Elements: Not Regulated, No Hazard

2.1 Other Hazards: Not Regulated, No Hazard

3. COMPOSITION / INFORMATION ON INGREDIENTS

3.1 Substances

Main Constituent: Dialuminum Chloride Pentahydroxide
CAS No: 12042-91-0
EC number: 234-933-1
Purity: 40% w/w
Synonyms: Aluminum Chlorohydrate
Other Constituent: Water (CAS no 7732-18-5, EC no 231-791-2) ~60% w/w
Impurities: None
Additives: None

3.2 Hazard Ingredients None

3.3 Additional Information None

4. FIRST AID MEASURES

4.1 General Information: Immediate medical attention is not necessary.

4.2 In Case Of Inhalation: Supply fresh air. Rinse mouth and nose with water. Contact a physician.

4.3 In Case Of Skin Contact: Rinse with water. If symptoms persist, call a physician.

4.4 In Case Of Eye Contact: Rinse with plenty of lukewarm water, also under the eyelids. If symptoms persist, call a physician.

4.5 In Case Of Ingestion: Do NOT induce vomiting. Rinse mouth with water. Drink 1 or 2 glasses of water or milk. If symptoms persist, call a physician. Never give anything by mouth to an unconscious person.

4.6 Self Protection of the First Aider: Direct contact with the product should be prevented or minimized. Wear gloves in a suitable material such as PVC, Neoprene or Natural rubber.

4. FIRST AID MEASURES (continued from page 1)

SAFETY DATA SHEET**Trade Name: KR-B4000B****Product No: KR-B4000B****Version: 1.0****4.7** Information to Physician:Symptoms:

If Inhaled: May cause mucous membrane irritation with cough and rhinitis.

If On Skin: May cause mild irritation dryness and dermatitis.

If In Eyes: May cause redness, conjunctivitis and short term mild irritation.

If Swallowed: May cause burning pain in mouth and throat.

Hazards:

See Section 4.6

Treatment:

See Sections 4.2 – 4.5

5. FIRE FIGHTING MEASURES**5.1** Suitable extinguishing media:

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

5.2 Extinguishing Media Which Must Not Be Used for Safety Reasons:

None.

5.3 Special Exposure Hazards Arising from the Substance Itself, Combustion Products, Resulting Gases:

Hydrogen chloride may be released when heating above the decomposition temperature.

5.4 Special Protective Equipment for Fire Fighters:

In the event of fire, wear self-contained breathing apparatus. Fire fighters must wear fire resistant personnel protective equipment

5.5 Additional Information

None

6. ACCIDENTAL RELEASE MEASURES**6.1** Personal Precautions:Refer to protective measures listed in section “Section 7. Handling and Storage”.
Wear protective suit and boots. If aerosols or mist are formed, use half mask with combination filter B/P2.**6.2** Environmental Precautions:

Cover the drains to prevent the product from entering the environment. If the product contaminates rivers and lakes or drains inform respective authorities.

6.3 Methods for Cleaning Up:

Contain spills in dyke or use absorptive barriers. Remove larger spills using a vacuum truck. Must be disposed of in accordance with local and national regulations.

6.4 Additional Information:

Product is water-soluble and compatible with water treatment plants. Product reacts with soaps forming a hydroxide gel.

7. HANDLING AND STORAGE**7.1** Handling:

The work place and work methods shall be organized in such a way that direct contact with the product is prevented or minimized.

Protective Measures:

Wear gloves in a suitable material such as PVC, Neoprene or Natural rubber. Please observe the instructions regarding permeability and breakthrough time which are provided by the supplier of the gloves. Also consider the specific local conditions under which the product is used, such as the danger of cuts, abrasion and the contact time.
Tightly fitted safety goggles must be worn.

Prevention of Aerosol and Dust Generation:

Material should be transferred in ways that do not create mists or aerosols.

SAFETY DATA SHEET**Trade Name: KR-B4000B****Product No: KR-B4000B****Version: 1.0****7. HANDLING AND STORAGE (continued from page 2)**

- 7.2** Storage: Product should be stored in dry conditions above freezing and below high temperatures (not >60°C).
- Technical Measures: Avoid incompatible materials including non acid-proof metals such as aluminum, copper and iron, bases, unalloyed steel and galvanized surfaces.
- Packaging Materials: Plastic (PE, PP, PVC), fiberglass-reinforced polyester, epoxy-coated concrete and titanium. High density PE is recommended.
- 7.3** Specific End Use: This material is used as a water treatment coagulant. When used in these applications, the product should be handled as described above to minimize worker exposure to lungs, eyes and skin.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

- 8.1** Exposure Limit Values: Occupational exposure limit is 2mg/m³ as Aluminum for soluble Aluminum compounds (OSHA TLV-TLW, ACGIH TLV-TLW, EH40, EU OEL, AGW).
- 8.2** Exposure Controls
- 8.2.1** Occupational Exposure Controls
- Technical Measures to Prevent Exposure: Material transfer should be done under conditions of local exhaust ventilation to avoid breathing mist.
- Personal Protective Equipment
- Respiratory Protection: Dust mask. In absence of local exhaust ventilation, approved respirators are recommended.
- Hand Protection: Wear gloves in a suitable material such as PVC, Neoprene or Natural rubber.
- Eye Protection: Tightly fitting safety goggles must be worn.
- Skin Protection: Skin should be covered by clothing at a minimum. Avoid excessive skin contact.

9. PHYSICAL AND CHEMICAL PROPERTIES

- 9.1** Appearance
- Physical State: Solution Color: white to light yellow Odor: slight, characteristic
- 9.2** Safety Relevant Basic Data
- pH (20 °C): Approximately 4 in a 15% aqueous solution.
- Melting point/range (°C): Not applicable.
- Boiling point/range (°C): 110 – 115°C.
- Flash point (°C): None, product is not flammable.
- Ignition temperature (°C): None, product is not flammable.
- Vapor Pressure (kPa): 2.3 kPa
- Density (g/cm³): 1.33 – 1.35 g/cm³
- Water Solubility (20 °C in g/l): Fully soluble
- Viscosity, dynamic (mPa s): 10 mPa s

10. STABILITY AND REACTIVITY

- 10.1** Conditions to Avoid: Excessive heating after water evaporation for long periods of time can result in the evolution of HCl.
- 10.2** Materials to Avoid: Will react with caustics to form aluminum hydroxides. Can corrode ordinary grades of steel.
- 10.3** Hazardous Decomposition Products: HCl can be evolved during high temperature heating for extended periods of time.

11. TOXICOLOGICAL INFORMATION

Product is not classified under either the Dangerous Substance Directive or GHS/CLP Regulation.

SAFETY DATA SHEET**Trade Name: KR-B4000B****Product No: KR-B4000B****Version: 1.0****11.2** Acute toxicityOral: Not classified. Rat ingestion study, OECD 401, LD₅₀ (rat) indicates > 2000 mg/kg.Dermal: Not classified. Rat dermal toxicity test, OECD 402, LD₅₀ (rat) >2000 mg/kg body weight.

Inhalative:

Irritant or Corrosive Effects

Primary Irritation to Skin: Not classified. Negative results rabbit skin, OECD 404.

Irritation to Eyes: Not classified. Negative results rabbit eye, OECD 405.

Sensitization

Not classified. Negative result for Aluminum Hydroxy Chloride, CAS 1327-41-9, read across.

Specific Target Organ Toxicity (STOT)

Not classified. No STOT identified in animal studies. Human effects can be related to systemic toxicity.

Repeated Dose Toxicity

Not classified. Read across from chronic (1 year) toxicity study (oral, rat) with Al Citrate, OECD 426 and OECD 452.

Read across from short term repeat dose toxicity study (rat) with Aluminum Hydroxy Chloride, CAS 1327-41-9.

Carcinogenicity

Not classified. No studies; none expected.

Mutagenicity/Genotoxicity

Not classified. Negative results for in-vitro mutagenicity testing.

Toxicity for ReproductionNot classified. Read across from Aluminum Hydroxy Chloride reproductive / developmental toxicity screening test. NOAEL 1000 mg/kg/day (equivalent to 90 mg/kg bw/day Al³⁺) and Aluminum Citrate one year developmental and chronic neurotoxicity study (oral, rat).**12. ECOLOGICAL INFORMATION****12.1** EcotoxicityNot classified. Zebra fish LC₅₀ (96h) 100 – 500 mg/l (OECD 203), Daphnia Magna EC₅₀ (48h) 397mg/l, EC₅₀ (bacteria) > 1000 mg/l Fermentation tube test.**12.2** Mobility

Not classified based on rapid hydrolysis and precipitation.

12.3 Persistence and Degradability

Inorganic product, not degradable. Cannot be eliminated from water by biological purification processes.

12.4 Results of PBT Assessment

Substance is not toxic.

13. DISPOSAL CONSIDERATIONS**13.1** Appropriate Disposal / Product:

Must be disposed of in accordance with local and national regulations.

13.2 Waste Codes / Waste Designations According to EWC/AVV/U.S. EPA:

Not applicable; material is not a hazardous waste.

13.3 Appropriate Packaging:

Follow recommendations according to method of disposal and specific disposal facility.

13.4 Additional Information:

None.

14. TRANSPORT INFORMATION**14.1** Land transport (ADR/RID and GGVS/GGVE)

SAFETY DATA SHEET
Trade Name: KR-B4000B
Product No: KR-B4000B

Version: 1.0

Not restricted.

This is not a hazardous material for transportation as defined by USA Dept. of Transportation.

14.2 Maritime transport (IMDG-Code/GGVSea)

Not restricted. Not a marine pollutant.

14.3 Air transport (ICAO-TI and IATA/DGR)

Not restricted.

15. REGULATORY INFORMATION

15.1 EU Regulations

Not classified.

Restrictions on Use:

15.2 National Regulations

Germany

Wassergefährdungsklasse (water hazard class): not a hazard.

United States

U.S.A. HMIS:

Health Hazard: 2

Fire Hazard: 0

Physical Hazard: 0

Personal Protection: B

U.S.A. NFPA:

Health: 2

Fire: 0

Reactivity: 0

Other Countries

This product is regulated in Japan and Korea.

16. OTHER INFORMATION

New SDS edition: 16-November 2021

Previous edition: First edition

Changes from previous issue date are due to: Update uses.

Abbreviation	Definition
<	less than
>	greater than
%	percent
°C	degree Centigrade
ACGIH	American Conference of Governmental Industrial Hygienists
ADR	European Agreement Concerning the International Carriage of Dangerous Goods
Al:	Aluminum
Al ³⁺	aluminum trivalent cation
AVV	Abfallverzeichnis-Verordnung
B/P2	breathing, non-toxic particle filter
BOD:	Biochemical Oxygen Demand
bw	body weight
CAS:	Chemical Abstracts Service
CLP:	Classification, labeling and packaging
cm ³	cubic centimeter
DGR	Dangerous Goods Regulations
DSL	Dangerous Substances List
EC Number or (ECN)	European Community Number
EC ₅₀	Concentration causing 50% of the maximum response

SAFETY DATA SHEET**Trade Name: KR-B4000B****Product No: KR-B4000B****Version: 1.0**

EH40:	UK Environmental Health occupational exposure limits
e-mail	electronic mail address
EmS	Emergency Schedule
ERG	Emergency Response Guidebook
EST/EDT	Eastern Standard Time/Eastern Daylight Savings Time
EWC	European Waste Council
FAX	facsimile number
FDA	Food and Drug Administration (USA)
g	gram
GGVS	Regulation of hazardous transportation for Germany
GHS:	Globally Harmonized System
h	hour
HCl	hydrogen chloride
HMIS	hazardous material information system
IATA	International Air Transport Association
ICAO-TI	International Civil Aviation Organization Technical Instructions
IMDG	International Maritime Dangerous Goods
kg	kilogram
l	liter
LC ₅₀	50% lethal concentration
LD ₅₀	50% lethal dose
m ³	cubic meter
mg	milligram
mPa	millipascal
No.	number
N.O.S:	Not otherwise specified
NFPA	National Fire Protection Association
NOAEL	no observable adverse effect level
OECD	Organization for Economic Co-Operation and Development
OSHA:	Occupational Safety and Health Administration
OTC	Over the Counter
PBT:	Persistent, Bioaccumulative and Toxic
PE	polyethylene
pH	log hydrogen ion concentration (acid-base scale)
PO	Post Office
PP	polypropylene
PPE	Personal Protective Equipment
PVC	polyvinyl chloride
RCRA	Resource Conservation & Recovery Act
REACH	Registration, Evaluation, Authorisation and Restriction of Chemical substances
(M)SDS:	(Material) Safety Data Sheet
s	second

SAFETY DATA SHEET**Trade Name: KR-B4000B****Product No: KR-B4000B****Version: 1.0**

STOT

Specific target organ toxicity

TLV-TWA:

Threshold Limit Value – Time-Weighted Average

w/w:

weight by weight