

MATERIAL SAFETY DATA SHEET

MSDS

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Nitrabor

1. PRODUCT AND COMPANY

- Approved for use
 Approved for laboratory use
 Approved by Hydro ChemConsult

TRADE NAME : Nitrabor
SYNONYMS : BOR-KALKSALPETER ; NITRABOR
APPLICATION : Fertilizer
FORMULA : $5\text{Ca}(\text{NO}_3)_2 \cdot \text{NH}_4\text{NO}_3 \cdot 10\text{H}_2\text{O} + 0.2-0.3\% \text{ B}$

PRODUCER/IMPORTER :

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ISSUED BY : Hydro ChemConsult, Eric Christenson

2. COMPOSITION OF PRODUCT

No	Ingredients name	CAS-NO	Weight%	Dangerclas./Cmnt.
1	calcium ammonium nitrate, $\text{Ca} \cdot \text{xH}_3\text{N} \cdot \text{xHNO}_3$	15245-12-2	ca. 84%	
2	water	7732-18-5	ca. 16%	
3	boron	7440-42-8	0.2-0.3%	

Legend: T+=Very toxic, T=Toxic, C=Corrosive, Xn=Harmful, Xi=Irritant, IK=No classification required, E=Explosive, O=Oxidising, F+=Extremely flammable, F=Very flammable, Fo=Flammable, N=Dang. to the environment,

INGREDIENT COMMENTS

The product consists mainly of one substance, best described as pentacalcium ammonium nitrate decahydrate. Nutrients: Ammonium-N ($\text{NH}_4\text{-N}$): 1.2%, Nitrate-N ($\text{NO}_3\text{-N}$): 14.2-14.3%, Total-N: 15.4-15.5%, Calcium (Ca): 18.5%, Boron (B): 0.2-0.3%.

3. HAZARD IDENTIFICATION

The product does not require labelling.

4. FIRST AID

GENERAL

Immediately move the patient from the source of exposure. Move to fresh air, keep the patient warm and at rest. If unconscious: Loosen tight clothing, place in stable position on one side. If heart stops, provide cardiac massage. Give artificial respiration if breathing has stopped.

INHALATION

If dust has been inhaled: Blow nose thoroughly and rinse mouth with water. Fire/strong heating (>100°C) causes formation of nitrogen oxides (NO_x). See "General". Establish open airways.

SKIN CONTACT

Wash skin thoroughly with soap and water.

EYE CONTACT

Flush with large amounts of water (open eyelids) for at least 15 minutes. Get medical advice if irritation persists.

INGESTION

Give 1-2 glasses of water and induce vomiting if the patient is fully conscious. Summon physician immediately.

MEDICAL INFORMATION

In an emergency, contact the national Poisons Information Centre. In extreme cases, intake may cause methemoglobin formation (due to bacterial reduction of nitrate to nitrite in the gastro-intestinal system) and cyanosis. Inhalation of gaseous nitrogen oxides may cause lung edema. Nitrogen oxides are only slightly soluble in water and may therefore penetrate to the alveoli. Symptomatic treatment.

5. FIRE FIGHTING MEASURES

PROPER FIREFIGHTING EQUIPMENT

Water.

PERSONAL PROTECTION WHEN FIREFIGHTING

Use self-contained breathing apparatus if substance is involved in fire.

6. ACCIDENTAL RELEASE MEASURES

SAFETY MEASUREMENTS TO PROTECT PERSONS

Avoid contact with skin or inhalation of spillage, dust or vapour. Refer to protective measures listed in sections 7 and 8.

SAFETY MEASUREMENTS TO PROTECT ENVIRONMENT

Minimize spreading. Inform appropriate authorities if large amounts are involved.

PROPER METHODS FOR DAMAGE LIMITATION AND CLEANUP

Collect by mechanical means (shovel, sweep, vacuum etc.). The product may be used as fertilizer under suitable conditions. After cleaning, flush away traces with water. Dispose of in accordance with local regulations for waste handling (see section 13).

7. HANDLING AND STORAGE

HANDLING ADVICE

Avoid handling which causes dust formation. Avoid inhalation of dust.

STORAGE

The product is hygroscopic (absorbs moisture) and should be stored well-protected against moisture.

8. EXPOSURE CONTROL/PERSONAL PROTECTION

TLV's:

Ingredients name	CAS-no	TLV value	TLV year
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EXPOSURE CONTROL

Occupational exposure limit for nuisance particulates: 10 mg/m³ (total dust), 5 mg/m³ (respirable dust). Wash hands after using the product.

RESP. PROTECTION

Wear particulate respirator if there is dust formation. Particulate filter P2 (fine particles).

EYE PROTECTION

Wear dust-proof goggles/face shield if dust formation is possible.

HAND PROTECTION

For prolonged or repeated skin contact use suitable protective gloves. Suitable glove material: Textile/leather or rubber/plastic.

SKIN PROTECTION

Wear suitable protective clothing Extremely dusty clothing etc. should be washed immediately.

9. PHYSICAL AND CHEMICAL PROPERTIES

Form: Solid. Granulate.
Colour: Yellow.
Odour: None.
Solubility: Very soluble in water.

Melting point/range:	94 - 98°C	Solubility in water:	68% (20°C)
Vapor pressure:	6 - 8 mmHg	pH solution:	6 - 7 (10%-løsning)
Bulketthet:	1.10 g/cm ³		

Particle size: >4 mm: <1%, 2-4 mm: 90%, <2 mm: 10%.

10. STABILITY AND REACTIVITY

STABILITY

Fire/strong heating (>100°C) may cause decomposition and formation of toxic gases (nitrogen oxides). The formation of nitrogen oxides stops when the heat source is removed. Does not polymerize.

HAZARDOUS DECOMPOSITION PRODUCTS

Nitrogen oxides (NO_x).

11. TOXICOLOGICAL INFORMATION

OTHER TOX. INFORMATION

LD50 (oral rat) for the product: 2100 mg/kg. (Huntingdon Research Centre, England, 25.2.80).

GENERAL

Fire may cause formation of toxic gases (nitrogen oxides). For more information, refer to safety data sheets for nitrogen oxides or nitric acid.

INHALATION

Dust may irritate respiratory tract and lungs.

SKIN CONTACT

Dust may dry out the skin and cause irritation. Irritation may be intensified by moist/sweaty skin. May cause itching, smarting, redness or sores.

EYE CONTACT

Dust particles in the eyes cause irritation and smarting.

INGESTION

Nitrates can be absorbed by the body from the gastro-intestinal system by ingestion. Symptoms may be headache, dizziness, vomiting and cramps.

12. ECOLOGICAL INFORMATION

MOBILITY

Dissolves in water.

BREAKDOWN

Biodegradable. Mineralizes.

ACCUMULATION

Does not bioaccumulate.

ECOTOXITY

Larger amounts could increase algae growth. LC50 (fish, 96h): >100 mg/l.

13. DISPOSAL

Not classified as hazardous waste. Small quantities may be flushed to drain with water. Larger quantities may be used as fertilizer or disposed of in approved landfill.

14. TRANSPORT INFORMATION

ADR (Road)
RID (Railway)
IMDG (Sea)
IATA (Airplane)

The product is not considered as dangerous goods. The product is a commercial grade of calcium nitrate fertilizer. It consists mainly of a double salt (calcium nitrate and ammonium nitrate). The product contains not more than 10% ammonium nitrate and at least 12% water of crystallization, and is therefore not subject to the provisions of ADR, RID, IMDG or IATA.

15. REGULATORY INFORMATION

Classif.:

COMPOSITION

calcium ammonium nitrate, Ca.xH₃N.xHNO₃ (ca. 84%), water (ca. 16%), boron (0.2-0.3%)

R-PHRASES

The product does not require labelling.

REFERENCES

Norwegian substances list (Stoffliste) 1998 (Statens forurensningstilsyn, Arbeidstilsynet, Direktoratet for brann- og eksplosjonsvern). Norwegian occupational exposure limit values (Administrative normer for forurensning i arbeidsatmosfære (Arbeidstilsynet, best.nr. 361)). ADR, RID, IMDG, IATA. Micromedex Tomes CPS System.

16. OTHER INFORMATION

INFORMATION

SOURCES:

VENDOR NOTES

* The safety data sheet has been approved in accordance with quality control guidelines from the Norwegian Oil Industry Association (OLF). Hydro ChemConsult is certified by OLF. Hydro ChemConsult is not responsible for any errors or deficiencies in the information received from the manufacturer/supplier. The manufacturer/supplier mentioned in section 1 is legally responsible for the contents of the safety data sheet.

USER NOTES