Material Safety Data Sheet
Potassium Nitrate

Edition: 27/09/2018

In compliance with Regulation (EC) No. 453/2010

1) Identification of substance/preparation and of the company undertaking

Material	Potassium Nitrate
Synonyms:	Nitric acid potassium salt
Product form:	Substance
EC No	231-818-8
CAS No	7757-79-1
REACH Registration No	01-2119488224-35
Company	Inoxia Ltd 45.7 Dunsfold Park Stovolds Hill Cranleigh Surrey GU6 8TB Tel: 02032 909990 safety@inoxia.co.uk www.inoxia.co.uk

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

1.2.1. Relevant identified uses

Use of potassium nitrate for formulation of preparations for fertilisers, pyrotechnics, fireworks, antifreeze, explosives, washing/cleaning products and water treatment chemicals; Industrial use as intermediate to synthesize other substances; Industrial use of the substance in solar power plants; Industrial end use as processing aid; chemical synthesis; Industrial end use for the manufacturing of glass and frits; Industrial end use as heat transfer salt (energy storage); Industrial end use as heat treatment salt and oxidising flux; Industrial end use as surface treating agent; Professional end use (de-icing/antifreeze); Professional end use (washing and cleaning); Consumer use of cosmetic products containing potassium nitrate; use of fertiliser as carrier or co-formulant in (consumer) plant protection products. Potassium Nitrate is used in the manufacture of nitric acid.

1.2.2. Uses advised against

None.

Full text of use descriptors: see section 16.

2) Hazards identification.

Classification according to Regulation (EC) No. 1272/2008 [CLP]

GHS03 flame over circle

Ox. Sol. 2 H272 May intensify fire; oxidiser.

Full text of H-phrases: see section 16

Classification according to Directive 67/548/EEC

O; Oxidising R8
Full text of R-phrases: see section 16

2.2. Label elements
Labelling according to Regulation (EC) No. 1272/2008 (CLP)
Hazard pictograms (CLP):

GHS03
Signal word (CLP): Danger

Hazard statements (CLP):
H272 – May intensify fire; oxidiser

Precautionary statements (CLP):
P101: If medical advice is needed, have product container label at hand
P102: Keep out of reach of children
P103: Read label before use
P210: Keep away from heat/sparks/open flames/hot surfaces – No smoking.
P221: Take any precaution to avoid mixing with combustibles.
P370+378: In case of fire; Use for extinction: Water
P420: Store away from flammable substances
P501: Dispose of contents/container in accordance with regional regulations.

2.3. Other hazards
This substance/mixture does not meet the PBT criteria of REACH, annex XIII.
This substance/mixture does not meet the vPvB criteria of REACH, annex XIII.

3) Composition/information on ingredient

3.1. Substances
Name: Potassium Nitrate
Reach Registration number: 01-2119488224-35
CAS No. : 7757-79-1
EC no : 231-818-8
Gross Formula KNO3

Composition Comments:
Purity >99%

3.2. Mixtures
Not applicable

4) First Aid Measures

4.1. Description of first aid measures

First-aid measures after inhalation: Move the exposed person to fresh air at once. Consuly a doctor if symptoms persist.

First-aid measures after skin contact: Wash immediately with plenty of soap and water. Remove contaminated clothing and shoes. Wash contaminated clothing before reuse. Seek medical attention if ill effect or irritation develops.

First-aid measures after eye contact: In case of eye contact, immediately rinse with clean water for 10-15 minutes. Call a doctor.

First-aid measures after ingestion: If swallowed, seek medical advice immediately and show this container or label. Drink plenty of water. Do not induce vomiting.

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

General information: Prolonged or repeated exposure may cause; Nausea, vomiting, Methemoglobinemia, Diarrhoea, Headache.

Ingestion: Methemoglobinemia

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

The substance may cause effects on the blood, resulting in formation of methemoglobinemia when ingested. The effects may be delayed. Medical observation is indicated.

5) Fire Fighting

5.1. Extinguishing media

Water spray

Unsuitable extinguishing media: Carbon dioxide (CO_2). Dry chemicals, halon or foam.

5.2. Special hazards arising from the substance or mixture

Hazardous combustion products: The product is non-combustible

Unusual Fire & Explosion Hazards: May explode when heated or when exposed to flames or sparks. May ignite other combustible materials.

Specific Hazards: Keep away from combustible material. Fire creates; Nitrous gases (NO_x).

5.3. Advice for firefighters

Protection during firefighting: Use of approved supplied air or self-contained breathing apparatus operated in positive pressure mode are satisfactory. Totally impervious protective suits, gloves, and boots must be worn.

6) Accidental Release

6.1. Personal precautions, protective equipment and emergency procedures

Avoid generation and spreading of dust. Provide adequate ventilation. Warn everybody of potential hazards and evacuate if necessary. Wear full protective clothing. Do not smoke, use open fire or other sources of ignition. Wear protective clothing as described in Section 8 of this safety data sheet.

6.2. Environmental precautions
Prevent entry to sewers and soil. Notify authorities if product enters sewers or public waters.

6.3. Methods and material for containment and cleaning up
Keep combustibles away from spilled material. Avoid dust formation. Collect in containers and seal securely. Containers with collected spillage must be properly labelled with correct contents and hazard symbol. Flush area with plenty of water.

See section 8 and 13 for more information

7) Handling/Storage

7.1. Precautions for safe handling
Precautions for safe handling: Do not breathe dust. Avoid all contact with this substance. Wash hands plentifully and other exposed areas with water after handling. Remove contaminated clothing and shoes. Wash clothing before reusing. Eliminate all sources of ignition

7.2. Conditions for safe storage, including any incompatibilities Store in tightly closed original container in a dry and cool place. Oxidising material - Keep away from flammable and combustible materials. The substance is hygroscopic and will absorb water by contact with the moisture in the air. Store isolated from reducing agents.

Storage Class
Oxidiser
Storage

7.3. Specific end use(s)
For further information see attached Exposure Scenario.

8) Exposure Controls/Personal Protection

8.1. Control parameters
Ingredient Comments No exposure limits noted for ingredients.

DNEL

Industry	Inhalation	Long Term	Systemic Effects	36.7mg/m³
Industry	Dermal	Long Term	Systemic Effects	20.8mg/kg/day
Consumer	Dermal	Long Term	Systemic Effects	12.5mg/kg/day
Consumer	Inhalation	Long Term	Systemic Effects	10.9mg/m³
Consumer	Oral	Long Term	Systemic Effects	12.5 mg/kg/day

PNEC

Freshwater	0.45mg/l
Marinewater	0.045mg/l
Intermittent release	4.5mg/l
STP	18mg/l

8.2. Exposure controls

Appropriate engineering controls: Use as far as possible in a closed system. Provide a regular control of the atmosphere. Emergency eye wash fountains and safety showers should be available in the immediate vicinity of any potential exposure. Local exhaust and general ventilation must be adequate to meet exposure standards. Please refer to the annex (exposure scenarios).

Hand protection: Use gloves resistant to chemical products corresponding to EN 374:3. Take advice of gloves' manufacturer

Eye protection: Wear safety glasses with side shields according EN 166.

Skin and body protection: Wear closed protective clothing.

Respiratory protection: Use respiratory protection mask according to EN 143 with filter type P1 according to EN 143:2000.

Hygiene measures: DO NOT SMOKE IN WORK AREA! Wash hands at the end of each work shift and before eating, smoking and using the toilet. Wash promptly if skin becomes contaminated. Promptly remove any clothing that becomes contaminated. When using do not eat, drink or smoke

9) Physical/Chemical Properties

Physical state	Crystalline.
Colour	White.
Odour	Odourless.
Odour threshold	Not applicable
pH-Value, Diluted Solution	5-8 (50g/L at 20^0 C)
Relative evaporation rate (butylacetate=1)	No data available
Melting point/Melting range	333° C
Boiling point/Boiling range	400° C
Flash point	Not applicable
Self ignition temperature	Not applicable
Decomposition temperature	>600° C
Flammability (solid, gaseous)	Contact with combustible materials may cause fire
Vapour pressure	Unjustified as the melting point >300°
Relative density at 20 °C	C 2.11 g/cm ^{3}
Bulk Density	1,300kg/m^3
Solubility in/Miscibility with water at 20^0C	357 g/l
Viscosity, kinematic	Not applicable
Viscosity, dynamic	Not applicable
Explosive properties	Not explosive
Oxidising properties	Not available.
Partition Coefficient	May intensify fire: oxidiser (only in crystalline form
	Not applicable

9.1. Other information

Mol. Weight 101.1032

10) Stability/Reactivity

10.1. Reactivity

May intensify fire: oxidiser

10.2. Chemical stability

Stable under the prescribed storage conditions.

10.3. Possibility of hazardous reactions

May intensify fire: oxidiser.

10.4. Conditions to avoid

Avoid heat, flames and other sources of ignition. Water, moisture.

10.5. Incompatible materials

Materials To Avoid: Strong reducing agents. Strong acids. Amines. Ammonia. Powdered metal. Sulphurous gases (SOx). Zinc. Strong oxidising substances. Flammable/combustible material. Chlorates.

10.6. Hazardous decomposition products

Thermal decomposition or combustion may liberate nitrogen oxides and other toxic gases or vapours.

11) Toxicological Info

11.1. Information on toxicological effects

Acute Toxicity:

LD50 oral rat: >2,000mg/kg.
LD50 dermal rabbit: >5,000mg/kg.
LC50 Inhalative rat: >0.527mg/l 4h

Serious eye damage/irritation: No irritating effects known.
Respiratory or skin sensitisation: Skin sensitisation: No sensitising effects known.
Germ cell mutagenicity: Genotoxicity – In VitroNegative- Inconclusive data
Carcinogenity: No evidence of carcinogenicity in animal studies
Reproductive Toxicity: No evidence of reproductive toxicity in animal studies
Specific target organ toxicity – single exposure: STOT – Single exposure Not classified.
Specific target organ toxicity – repeated exposure: STOT – Repeated exposure Not classified.
Aspiration hazard: Not relevant as a specific target organ toxicant after repeated exposure.
Inhalation: Dust may irritate respiratory system or lungs.
Ingestion: If swallowed, especially in large quantities: Risk of damage to blood system. Methemoglobinemia.
Eye contact: No irritating effects known

12) Ecological Information

12.1. Toxicity

Aquatic Toxicity

EC50: > 100 mg/kg Daphnia

Chronic Toxicity - Fish Early life Stage
Scientifically unjustified**.**

Chronic Toxicity - Aquatic Invertebrates
Scientifically unjustified.

Acute Toxicity – Terrestrial
Scientifically unjustified

12.2. Persistence and degradability
Degradability
Not relevant

12.3. Bioaccumulative potential
Bioaccumulation of this product is not expected to occur.
Partition coefficient: Not applicable.

12.4. Mobility in soil
Mobility: The product is soluble in water.

12.5. Results of PBT and vPvB assessment
Not Classified as PBT/vPvB by current EU criteria.

12.6. Other adverse effects
None known

13) Disposal Considerations
13.1. Waste treatment methods
Dispose of waste and residues in accordance with local authority requirements. Residues and empty containers should be taken care of as hazardous waste according to local and national provisions.

14) Transport Information
In accordance with ADR / RID / ADNR / IMDG / ICAO / IATA

14.1 UN Number

UN No. (ADR/RID/ADN)	1486
UN No. (IMDG)	1486
UN No. (ICAO)	1486

14.2 UN Proper Shipping Name

Proper Shipping Name	UN 1486 POTASSIUM NITRATE, 5.1, III, (E)
Proper Shipping Name	POTASSIUM NITRATE

14.3 Transport Hazard Class(es)

ADR/RID/AND Class	5.1
ADR/RID/AND Class	Class 5.1: Oxidising substances
ADR Label No	5.1
IMDG Class	5.1

ICAO Class/Division 5.1
Transport Labels

14.4. Packing group
Packing group (UN): III

14.5. Environmental hazards
None known.

14.6. Special precautions for user
EMS F-A, S-Q
Emergency Action Code 1Z
Hazard No. (ADR) 50
Tunnel Restriction Code (E)
Do not transport potassium nitrate together with ammonium salts (e.g. ammonium sulphate, ammonium chloride or ammonium carbonate, nitrogen containing fertilisers) or amides (such as urea) and products containing them. Similarly, it may react violently with reducing agents. E.g. alkali sulphites and dithionites.

14.7. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code
Not applicable

15) Regulatory Information

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

Guidance Notes

Workplace Exposure Limits EH40.

EU Legislation

Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH), establishing a European Chemicals Agency, amending Directive 1999/45/EC and repealing Council Regulation (EEC) No 793/93 and Commission Regulation (EC) No 1488/94 as well as Council Directive 76/769/EEC and Commission Directives 91/155/EEC, 93/67/EEC, 93/105/EC and 2000/21/EC, including amendments. Regulation (EC) No 1272/2008 of the European Parliament and of the Council of 16 December 2008 on classification, labelling and packaging of substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No 1907/2006 with amendments.

15.2. Chemical safety assessment

A Chemical Safety Assessment has not been carried out.

16) Other Information

General information

The following information is provided to conform with article 13 of the EC Directive on Packaging and Packaging Waste 94/62/EC:

Revision Comments

NOTE: Lines within the margin indicate significant changes from the previous revision.
Revision Date 13/07/2012
Revision 5
Supersedes date 10/01/2012

Risk Phrases In Full

R8: Contact with combustible material may cause fire.

Hazard Statements In Full

H272: May intensify fire; oxidiser.

Precautionary Statements In Full

P101: If medical advice is needed, have product container label at hand
P102: Keep out of reach of children
P103: Read label before use
P210: Keep away from heat/sparks/open flames/hot surfaces – No smoking.
P221: Take any precaution to avoid mixing with combustibles.
P370+378: In case of fire; Use for extinction: Water
P420: Store away from flammable substances
P501: Dispose of contents/container in accordance with regional regulations.

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.
DISCLAIMER OF LIABILITY The information in this SDS was obtained from sources which we believe are reliable. However, the information is provided without any warranty, express or implied, regarding its correctness. The conditions or methods of handling, storage, use or disposal of the product are beyond our control and may be beyond our knowledge. For this and other reasons, we do not assume responsibility and expressly disclaim liability for loss, damage or expense arising out of or in any way connected with the handling, storage, use or disposal of the product. This SDS was prepared and is to be used only for this product. If the product is used as a component in another product, this SDS information may not be applicable.