SAFETY DATA SHEET

Creation Date 05-Aug-2010 **Revision Date** 27-Jun-2013 **Revision Number** 5

SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1. Product identifier

Product Description: **Potassium nitrate**
Cat No. **P/6040/60, P/6040/63**
Synonyms Saltpeter.; Nitric acid potassium salt; Niter
CAS-No 7757-79-1
EC-No. 231-818-8
Molecular Formula K N O3
Reach Registration Number 01-2119488224-35

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

Recommended Use Laboratory chemicals
Uses advised against No Information available

1.3. Details of the supplier of the safety data sheet

Company Fisher Scientific UK
Bishop Meadow Road, Loughborough,
Leicestershire LE11 5RG, United Kingdom
E-mail address begel.sdsdesk@thermofisher.com

1.4. Emergency telephone number

Tel: 01509 231166
Chemtrec US: (800) 424-9300
Chemtrec EU: 001 (202) 483-7616

SECTION 2: HAZARDS IDENTIFICATION

2.1. Classification of the substance or mixture

CLP Classification - Regulation (EC) No 1272/2008

Physical hazards
Oxidizing solids — Category 3

Health hazards
Based on available data, the classification criteria are not met

Environmental hazards
Based on available data, the classification criteria are not met

Classification according to EU Directives 67/548/EEC or 1999/45/EC
Symbol(s) O - Oxidizing
R-phrase(s) R 8 - Contact with combustible material may cause fire

For the full text of the R-phrases and H-Statements mentioned in this Section, see Section 16

2.2. Label elements

Signal Word **Warning**

Hazard Statements
H272 - May intensify fire; oxidizer

Precautionary Statements
P210 - Keep away from heat/sparks/open flames/hot surfaces. - No smoking
P220 - Keep/Store away from clothing/ combustible materials

2.3. Other hazards

Results of PBT and vPvB assessment
In accordance with Annex XIII of the REACH Regulation, inorganic substances do not require assessment

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.1. Substances

Component	CAS-No	EC-No.	Weight %	CLP Classification - Regulation (EC) No 1272/2008	DSD Classification - 67/548/EEC
Potassium nitrate	7757-79-1	EEC No. 231-818-8	>95	Ox. Sol. 3 (H272)	O; R8;

Reach Registration Number	01-2119488224-35

For the full text of the R-phrases and H-Statements mentioned in this Section, see Section 16

SECTION 4: FIRST AID MEASURES

4.1. Description of first aid measures

Eye Contact Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Obtain medical attention.

Skin Contact Wash off immediately with plenty of water for at least 15 minutes. Take off contaminated clothing and shoes immediately. Get medical attention immediately if symptoms occur.

Ingestion Do not induce vomiting. Rinse mouth. Drink plenty of water. Get medical attention if symptoms occur.

Inhalation Move to fresh air. If breathing is difficult, give oxygen. Get medical attention immediately if symptoms occur.

Protection of First-aiders No special precautions required.

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

No information available

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

Notes to Physician Treat symptomatically

SECTION 5: FIREFIGHTING MEASURES

5.1. Extinguishing media

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

Extinguishing media which must not be used for safety reasons
No information available.

5.2. Special hazards arising from the substance or mixture

May ignite combustibles (wood paper, oil, clothing, etc.). Thermal decomposition can lead to release of irritating gases and vapors. Oxidizer: Contact with combustible/organic material may cause fire.

Hazardous Combustion Products
Oxides of potassium, Nitrogen oxides (NOx).

5.3. Advice for firefighters

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures

Ensure adequate ventilation. Use personal protective equipment. Avoid dust formation.

6.2. Environmental precautions

Should not be released into the environment. Do not flush into surface water or sanitary sewer system.

6.3. Methods and material for containment and cleaning up

Avoid dust formation. Keep away from clothing and other combustible materials. Sweep up or vacuum up spillage and collect in suitable container for disposal. Keep in suitable, closed containers for disposal.

6.4. Reference to other sections

Refer to protective measures listed in Sections 8 and 13.

SECTION 7: HANDLING AND STORAGE

7.1. Precautions for safe handling

Wear personal protective equipment. Ensure adequate ventilation. Avoid contact with skin, eyes and clothing. Avoid ingestion and inhalation. Keep away from clothing and other combustible materials. Avoid dust formation.

7.2. Conditions for safe storage, including any incompatibilities

Keep containers tightly closed in a dry, cool and well-ventilated place. Do not store near combustible materials.

7.3. Specific end use(s)

Use in laboratories

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Control parameters

Exposure limits
List source(s):

Component	Bulgaria	Croatia	Ireland	Cyprus	Czech Republic
Potassium nitrate	TWA: 5.0 mg/m^3				

Component	Latvia	Lithuania	Luxembourg	Malta	Romania
Potassium nitrate	TWA: 5 mg/m^3	TWA: 5 mg/m^3			

Component	Russia	Slovak Republic	Slovenia	Sweden	Turkey
Potassium nitrate	MAC: 5 mg/m^3				

Biological limit values
This product, as supplied, does not contain any hazardous materials with biological limits established by the region specific regulatory bodies.

Monitoring methods
BS EN 14042:2003 Title Identifier: Workplace atmospheres. Guide for the application and use of procedures for the assessment of exposure to chemical and biological agents.
MDHS14/3 General methods for sampling and gravimetric analysis of respirable and inhalable dust

Derived No Effect Level (DNEL) See table for values

Route of exposure	Acute effects (local)	Acute effects (systemic)	Chronic effects (local)	Chronic effects (systemic)
Oral				
Dermal				20 mg/kg/day
Inhalation				36.7 mg/m^3

Predicted No Effect Concentration (PNEC) See values below.

Fresh water	0.45 mg/l
Marine water	0.045 mg/l
Water Intermittent	4.5 mg/l
Microorganisms in sewage treatment	18 mg/l

8.2. Exposure controls

Engineering Measures
Ensure adequate ventilation, especially in confined areas

Personal protective equipment

Eye Protection Safety glasses with side-shields (European standard - EN 166)

Hand Protection Protective gloves

Glove material	Breakthrough time	Glove thickness	EU standard	Glove comments
Butyl rubber	> 480 minutes	0.5 mm	EN 374 Level 6	As tested under EN374-3 Determination of Resistance to Permeation by Chemicals
Nitrile rubber				
Neoprene				
PVC				

Inspect gloves before use.
Please observe the instructions regarding permeability and breakthrough time which are provided by the supplier of the gloves. (Refer to manufacturer/supplier for information)
Ensure gloves are suitable for the task: Chemical compatability, Dexterity, Operational conditions, User susceptibility, e.g. sensitisation effects, also take into consideration the specific local conditions under which the product is used, such as the danger of cuts, abrasion.
Remove gloves with care avoiding skin contamination.

Skin and body protection	Wear appropriate protective gloves and clothing to prevent skin exposure
Respiratory Protection	No protective equipment is needed under normal use conditions.
Large scale/emergency use	Use a NIOSH/MSHA or European Standard EN 136 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced.. **Recommended Filter type:** Particulates filter conforming to EN 143.
Small scale/Laboratory use	Maintain adequate ventilation No personal respiratory protective equipment normally required
Hygiene Measures	Handle in accordance with good industrial hygiene and safety practice
Environmental exposure controls	No information available.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

Appearance	White	
Physical State	Solid.	
Odor	odorless	
Odor Threshold	No data available	
pH	6-8	5% aq. solution
Melting Point/Range	334°C / 633.2°F	
Softening Point	No data available	
Boiling Point/Range	400°C / 752°F	@ 760 mmHg
Flash Point	No information available.	**Method -** No information available.
Evaporation Rate	Not applicable	Solid
Flammability (solid,gas)	Not flammable	
Explosion Limits	No data available.	
Vapor Pressure	No data available	
Vapor Density	Not applicable	Solid
Specific Gravity / Density	2.1 @ 20 °C	Literature reference
Bulk Density	No data available	
Water Solubility	320 g/l (20°C)	
Solubility in other solvents	No information available.	
Partition Coefficient (n-octanol/water)		
Autoignition Temperature	Not applicable	
Decomposition temperature	> 400°C	
Viscosity	Not applicable	Solid
Explosive Properties	No information available.	
Oxidizing Properties	Oxidizer	

9.2. Other information

Molecular Formula	K N O3
Molecular Weight	101.1

SECTION 10: STABILITY AND REACTIVITY

10.1. Reactivity

Oxidizer: Contact with combustible/organic material may cause fire

10.2. Chemical stability

Stable under normal conditions. Oxidizer: Contact with combustible/organic material may cause fire.

10.3. Possibility of hazardous reactions

Hazardous Polymerization	Hazardous polymerization does not occur.
Hazardous Reactions	None under normal processing..

10.4. Conditions to avoid

Incompatible products, Excess heat, Combustible material, Avoid dust formation.

10.5. Incompatible materials

Strong reducing agents. Strong acids. Combustible material.

10.6. Hazardous decomposition products

Oxides of potassium, Nitrogen oxides (NOx).

SECTION 11: TOXICOLOGICAL INFORMATION

11.1. Information on toxicological effects

Product Information

(a) acute toxicity;

Oral	Based on available data, the classification criteria are not met
Dermal	Based on available data, the classification criteria are not met
Inhalation	Based on available data, the classification criteria are not met

Component	LD50 Oral	LD50 Dermal	LC50 Inhalation
Potassium nitrate	3015 mg/kg (Rat)	> 5000 mg/kg (Rat)	>0.527 mg/l 4h (Rat)

(b) skin corrosion/irritation; Based on available data, the classification criteria are not met
Data from closely analogous substances

(c) serious eye damage/irritation; Based on available data, the classification criteria are not met

Test method	OECD Test Guideline 405
Test species	rabbit
Observation end point	No eye irritation

(d) respiratory or skin sensitization;

Respiratory	Based on available data, the classification criteria are not met
Skin	Based on available data, the classification criteria are not met

(e) germ cell mutagenicity; Based on available data, the classification criteria are not met

Did not show mutagenic effects in animal experiments

(f) carcinogenicity; Based on available data, the classification criteria are not met

The table below indicates whether each agency has listed any ingredient as a carcinogen

Component	EU	UK	Germany	IARC
Potassium nitrate				Group 2A

(g) reproductive toxicity; Based on available data, the classification criteria are not met
Reproductive Effects Animal testing did not show any effects on fertility.

(h) STOT-single exposure; Based on available data, the classification criteria are not met

(i) STOT-repeated exposure; Based on available data, the classification criteria are not met

Test method OECD Test Guideline 422
Study result NOAEL = 1500 mg/kg bw/day
Target Organs None.

(j) aspiration hazard; Not applicable
Solid

Symptoms / effects, both acute and delayed No information available.

SECTION 12: ECOLOGICAL INFORMATION

12.1. Toxicity
Ecotoxicity effects .

Component	Freshwater Fish	Water Flea	Freshwater Algae	Microtox
Potassium nitrate	1378 mg/l LC50 (96h)	490 mg/l EC50 (48h)	> 1700 mg/l EC50 (10 day)	

12.2. Persistence and degradability
Persistence Soluble in water, Persistence is unlikely, based on information available.
Degradability Not relevant for inorganic substances.

12.3. Bioaccumulative potential Bioaccumulation is unlikely

12.4. Mobility in soil The product is water soluble, and may spread in water systems. Will likely be mobile in the environment due to its water solubility. Highly mobile in soils.

12.5. Results of PBT and vPvB assessment Results of PBT and vPvB assessment . In accordance with Annex XIII of the REACH Regulation, inorganic substances do not require assessment.

12.6. Other adverse effects
Endocrine Disruptor Information This product does not contain any known or suspected endocrine disruptors
Persistent Organic Pollutant This product does not contain any known or suspected substance
Ozone Depletion Potential This product does not contain any known or suspected substance

SECTION 13: DISPOSAL CONSIDERATIONS

13.1. Waste treatment methods

Waste from Residues / Unused Products Waste is classified as hazardous. Dispose of in accordance with the European Directives on waste and hazardous waste. Dispose of in accordance with local regulations.

Contaminated Packaging Dispose of this container to hazardous or special waste collection point..

European Waste Catalogue (EWC) According to the European Waste Catalogue, Waste Codes are not product specific, but application specific.

Other Information Waste codes should be assigned by the user based on the application for which the product was used. Do not empty into drains.

SECTION 14: TRANSPORT INFORMATION

IMDG/IMO

14.1. UN number 1486
14.2. UN proper shipping name POTASSIUM NITRATE
14.3. Transport hazard class(es) 5.1
14.4. Packing group III

ADR

14.1. UN number 1486
14.2. UN proper shipping name POTASSIUM NITRATE
14.3. Transport hazard class(es) 5.1
14.4. Packing group III

IATA

14.1. UN number 1486
14.2. UN proper shipping name POTASSIUM NITRATE
14.3. Transport hazard class(es) 5.1
14.4. Packing group III

14.5. Environmental hazards No hazards identified

14.6. Special precautions for user No special precautions required

14.7. Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code Not applicable, packaged goods

SECTION 15: REGULATORY INFORMATION

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

International Inventories X = listed

Component	EINECS	ELINCS	NLP	TSCA	DSL	NDSL	PICCS	ENCS	CHINA	AICS	KECL
Potassium nitrate	231-818-8	-		X	X	-	X	X	X	X	X

National Regulations

Component	Germany - Water Classification (VwVwS)	Germany - TA-Luft Class
Potassium nitrate	WGK 1	

Take note of Control of Substances Hazardous to Health Regulations (COSHH) 2002 and 2005 Amendment
Take note of Dir 94/33/EC on the protection of young people at work

15.2. Chemical safety assessment

A Chemical Safety Assessment/Report (CSA/CSR) has been conducted by the manufacturer/importer

SECTION 16: OTHER INFORMATION

Full text of R-phrases referred to under sections 2 and 3
R 8 - Contact with combustible material may cause fire

Full text of H-Statements referred to under sections 2 and 3
H272 - May intensify fire; oxidizer

Legend

CAS - Chemical Abstracts Service
EINECS/ELINCS - European Inventory of Existing Commercial Chemical Substances/EU List of Notified Chemical Substances
PICCS - Philippines Inventory of Chemicals and Chemical Substances
IECSC - China Inventory of Existing Chemical Substances
KECL - Existing and Evaluated Chemical Substances
TSCA - United States Toxic Substances Control Act Section 8(b) Inventory
DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List
ENCS - Japan Existing and New Chemical Substances
AICS - Australian Inventory of Chemical Substances
NZIoC - New Zealand Inventory of Chemicals

WEL - Workplace Exposure Limit
ACGIH - American Conference of Industrial Hygiene
DNEL - Derived No Effect Level
RPE - Respiratory Protective Equipment
LC50 - Lethal Concentration 50%
NOEC - No Observed Effect Concentration
PBT - Persistent, Bioaccumulative, Toxic
TWA - Time Weighted Average
IARC - International Agency for Research on Cancer
PNEC - Predicted No Effect Concentration
LD50 - Lethal Dose 50%
EC50 - Effective Concentration 50%
POW - Partition coefficient Octanol:Water
vPvB - very Persistent, very Bioaccumulative

ADR - European Agreement Concerning the International Carriage of Dangerous Goods by Road
IMO/IMDG - International Maritime Organization/International Maritime Dangerous Goods Code
OECD - Organisation for Economic Co-operation and Development
BCF - Bioconcentration factor
ICAO/IATA - International Civil Aviation Organization/International Air Transport Association
MARPOL - International Convention for the Prevention of Pollution from Ships
ATE - Acute Toxicity Estimate
VOC - Volatile Organic Compounds

Key literature references and sources for data
Suppliers safety data sheet,
Chemadvisor - LOLI,
Merck index,
RTECS

Training Advice
Chemical hazard awareness training, incorporating labelling, Safety Data Sheets (SDS), Personal Protective Equipment (PPE) and hygiene.
Use of personal protective equipment, covering appropriate selection, compatibility, breakthrough thresholds, care, maintenance, fit and standards.
First aid for chemical exposure, including the use of eye wash and safety showers.

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Revision Summary	
Reason for revision	Update to Format, (M)SDS sections updated, 8, 11, 12, 15, 16.

This safety data sheet complies with the requirements of Regulation (EC) No. 1907/2006

Disclaimer

The information provided on this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guide for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered as a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other material or in any process, unless specified in the text.

End of Safety Data Sheet