

# Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2015/830 and according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Date of issue: 16/05/2011 Revision date: 12/06/2018 Supersedes: 03/08/2012 Version: 3.0

OLM-7592

# SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Product form : Substance

Substance name : POTASSIUM NITRATE (1803, 90%+)

EC-No. : 231-818-8 (Unlabeled)

 CAS-No.
 : 191354-71-9

 Product code
 : OLM-7592

 Formula
 : KN\*O3

Synonyms : 13C Labeled potassium nitrile

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

#### 1.2.1. Relevant identified uses

Main use category : Professional use

Industrial/Professional use spec : For professional use only

#### 1.2.2. Uses advised against

No additional information available

# 1.3. Details of the supplier of the safety data sheet

Cambridge Isotope Laboratories, Inc.

50 Frontage Road Andover, MA 01810

USA

USA: 1-800-322-1174 Int: 1-978-749-8000 <u>cilsales@isotope.com</u> www.isotope.com

### **Emergency telephone number**

Emergency numbers:

Chemtrec: 1-800-424-9300 (24 hours) International: 1-703-741-5970 (24 hours)

# **SECTION 2: Hazards identification**

# 2.1. Classification of the substance or mixture

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

Ox. Sol. 2 H272
Acute Tox. 4 (Oral) H302
Skin Irrit. 2 H315
Eye Irrit. 2 H319
STOT SE 3 H335
Aquatic Chronic 3 H412

Full text of hazard classes and H-statements : see section 16

## Classification according to Directive 67/548/EEC [DSD] or 1999/45/EC [DPD]

O; R8 O; R9 Xn; R22 Xi; R36/37/38

Full text of R-phrases: see section 16

#### **GHS-US** classification

Ox. Sol. 2 H272
Acute Tox. 4 (Oral) H302
Skin Irrit. 2 H315
Eye Irrit. 2 H319
STOT SE 3 H335
Aquatic Chronic 3 H412

Full text of H statements : see section 16

14/06/2018 EN (English US) 1/9

# Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2015/830 and according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

#### Adverse physicochemical, human health and environmental effects

Blood. Central nervous system.

#### 2.2. Label elements

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

Hazard pictograms (CLP)





Signal word (CLP) : Danger

Hazard statements (CLP) : H272 - May intensify fire; oxidizer

H302 - Harmful if swallowed H315 - Causes skin irritation

H319 - Causes serious eye irritation H335 - May cause respiratory irritation

H412 - Harmful to aquatic life with long lasting effects

Precautionary statements (CLP) : P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No

smoking.

P220 - Keep/Store away from clothing, combustible materials P221 - Take any precaution to avoid mixing with combustibles P261 - Avoid breathing dust/fume/gas/mist/vapors/spray. P264 - Wash hands, forearms and face thoroughly after handling. P270 - Do not eat, drink or smoke when using this product. P271 - Use only outdoors or in a well-ventilated area.

P273 - Avoid release to the environment.

### **GHS-US** labeling

Hazard pictograms (GHS-US)





Signal word (GHS-US) : Danger

Hazard statements (GHS-US) H272 - May intensify fire; oxidizer

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Precautionary statements (GHS-US) : P210 - Keep away from heat. - No smoking.

P220 - Keep/Store away from clothing, combustible materials P221 - Take any precaution to avoid mixing with combustibles P261 - Avoid breathing dust/fume/gas/mist/vapors/spray. P264 - Wash hands, forearms and face thoroughly after handling.

P270 - Do not eat, drink or smoke when using this product.

P271 - Use only outdoors or in a well-ventilated area

P273 - Avoid release to the environment.

P280 - Wear protective clothing, protective gloves. P301+P312 - If swallowed: Call a doctor if you feel unwell P302+P352 - If on skin: Wash with plenty of water

P304+P340 - If inhaled: Remove person to fresh air and keep comfortable for breathing P305+P351+P338 - If in eyes: Rinse cautiously with water for several minutes. Remove contact

lenses, if present and easy to do. Continue rinsing

P312 - Call a doctor if you feel unwell P321 - Specific treatment (see Hazardous component(s) for labeling on this label)

P330 - Rinse mouth.

P332+P313 - If skin irritation occurs: Get medical advice/attention. P337+P313 - If eye irritation persists: Get medical advice/attention. P362+P364 - Take off contaminated clothing and wash it before reuse.

P370+P378 - In case of fire: Use Alcohol resistant foam, Dry chemical to extinguish.

P403+P233 - Store in a well-ventilated place. Keep container tightly closed.

P405 - Store locked up.

P501 - Dispose of contents/container to Comply with applicable regulations

EN (English US) 14/06/2018 2/9

# Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2015/830 and according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

#### 2.3. Other hazards

No additional information available

# **SECTION 3: Composition/Information on ingredients**

#### 3.1. Substances

Name	Product identifier	%	Classification according to Directive 67/548/EEC
POTASSIUM NITRATE (1803, 90%+)	(CAS-No.) 191354-71-9 (EC-No.) 231-818-8 (Unlabeled)	100	O; R8 O; R9 Xn; R22 Xi; R36/37/38
Name	Product identifier	%	Classification according to Regulation (EC) No. 1272/2008 [CLP]
POTASSIUM NITRATE (1803, 90%+)	(CAS-No.) 191354-71-9 (EC-No.) 231-818-8 (Unlabeled)	100	Ox. Sol. 2, H272 Acute Tox. 4 (Oral), H302 Skin Irrit. 2, H315 Eye Irrit. 2, H319 STOT SE 3, H335 Aquatic Chronic 3, H412

Full text of R- and H- phrases: see section 16

Name	Product identifier	%	GHS-US classification
POTASSIUM NITRATE (18O3, 90%+) (Main constituent)	(CAS-No.) 191354-71-9	100	Ox. Sol. 2, H272 Acute Tox. 4 (Oral), H302 Skin Irrit. 2, H315 Eye Irrit. 2, H319 STOT SE 3, H335 Aquatic Chronic 3, H412

Full text of H-phrases: see section 16

## 3.2. Mixtures

Not applicable

# **SECTION 4: First aid measures**

# 4.1. Description of first aid measures

First-aid measures general : If you feel unwell, seek medical advice (show the label where possible). Evacuate danger area.

First-aid measures after inhalation : When symptoms occur: go into open air and ventilate suspected area. If not breathing, give

artificial respiration. Get medical advice/attention.

First-aid measures after skin contact : Wash with plenty of soap and water. Get immediate medical advice/attention.

First-aid measures after eye contact : Rinse cautiously with water for several minutes.

First-aid measures after ingestion : Never give anything by mouth to an unconscious person. Rinse mouth out with water. Get

medical advice/attention.

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

Symptoms/effects after inhalation : May be harmful if inhaled. May cause respiratory tract irritation.

Symptoms/effects after skin contact : Causes skin irritation.

Symptoms/effects after eye contact : Causes serious eye burns.

Symptoms/effects after ingestion : Harmful if swallowed.

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

No additional information available

# **SECTION 5: Firefighting measures**

### 5.1. Extinguishing media

Suitable extinguishing media : Use water spray, alcohol-resistant foam, dry chemical, or carbon dioxide.

# 5.2. Special hazards arising from the substance or mixture

No additional information available

#### 5.3. Advice for firefighters

Firefighting instructions : Fight fire with normal precautions from a reasonable distance. Wear a self contained breathing apparatus. Do not enter fire area without proper protective equipment, including respiratory

protection. Use water spray to cool unopened containers.

Protection during firefighting : Do not enter fire area without proper protective equipment, including respiratory protection.

Wear recommended personal protective equipment.

14/06/2018 EN (English US) 3/9

# Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2015/830 and according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

#### **SECTION 6: Accidental release measures**

#### 6.1. Personal precautions, protective equipment and emergency procedures

## 6.1.1. For non-emergency personnel

Emergency procedures : Use protective equipment. Avoid dust formation. Avoid breathing dust. Ensure adequate

ventilation. Evacuate personnel to safe areas.

#### 6.1.2. For emergency responders

Protective equipment : Do not attempt to take action without suitable protective equipment. For further information

refer to section 8: "Exposure controls/personal protection".

#### 6.2. Environmental precautions

Prevent entry to sewers and public waters. Do not allow to enter drains or water courses. Avoid release to the environment.

#### 6.3. Methods and material for containment and cleaning up

For containment : Take up mechanically (sweeping, shoveling) and collect in suitable container for disposal.

Methods for cleaning up : This material and its container must be disposed of in a safe way, and as per local legislation.

Sweep up and shovel. Keep in suitable, closed containers for disposal.

#### 6.4. Reference to other sections

For further information refer to section 13.

# **SECTION 7: Handling and storage**

#### 7.1. Precautions for safe handling

Additional hazards when processed : Provide appropriate exhaust ventilation at places where dust is formed. Keep away from

sources of ignition - No smoking. Keep away from combustible material.

Precautions for safe handling : Provide adequate ventilation to minimize dust and/or vapor concentrations.

Hygiene measures : Handle in accordance with good industrial hygiene and safety practice. Wash hands before

breaks and at the end of workday.

#### 7.2. Conditions for safe storage, including any incompatibilities

Technical measures : Keep container tightly closed in a dry and well-ventilated place.

Storage conditions : Store at room temperature away from light and moisture.

### 7.3. Specific end use(s)

No additional information available

# SECTION 8: Exposure controls/personal protection

#### 8.1. Control parameters

No additional information available

#### 8.2. Exposure controls

Appropriate engineering controls : Wash hands and other exposed areas with mild soap and water before eating, drinking or

smoking and when leaving work.

Personal protective equipment : Gloves. Protective clothing. Protective goggles. Self-contained breathing apparatus.



Materials for protective clothing : Wear suitable protective clothing and gloves.

Hand protection : Wear suitable protective clothing and gloves.

Eye protection : Wear safety glasses with side shields (or goggles) and a face shield.

Skin and body protection : Choose body protection according to the amount and concentration of the dangerous

substance at the work place.

Respiratory protection : When appropriate, use NIOSH/CEN approved respirator.

Environmental exposure controls : Avoid release to the environment.

# **SECTION 9: Physical and chemical properties**

# 9.1. Information on basic physical and chemical properties

Physical state : Solid
Appearance : Crystalline.

Molecular mass : 107.1 g/mol (Labeled)

Color : White.

Odor : No data available
Odor threshold : No data available

14/06/2018 EN (English US) 4/9

# Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2015/830 and according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

: 5.5 - 8 at 50 g/l at 20 °C (68 °F)

Relative evaporation rate (butyl acetate=1) : No data available : 334 °C (633 °F) - lit Melting point Freezing point : No data available Boiling point : No data available Flash point : No data available : No data available Auto-ignition temperature Decomposition temperature : No data available No data available Flammability (solid, gas) Vapor pressure No data available Relative vapor density at 20 °C : 2.109 g/cm3 Relative density : No data available : No data available Solubility Log Pow : No data available Log Kow : No data available Viscosity, kinematic : No data available Viscosity, dynamic No data available

No data available Oxidizing properties : The substance or mixture is classified as oxidizing wih the Category 1.

**Explosion limits** : No data available

#### Other information

No additional information available

# **SECTION 10: Stability and reactivity**

#### 10.1. Reactivity

Explosive properties

No additional information available

# **Chemical stability**

Stable if stored under recommended conditions.

# Possibility of hazardous reactions

No additional information available

#### 10.4. **Conditions to avoid**

Avoid moisture.

Reproductive toxicity

#### Incompatible materials

Strong reducing agents, Powdered metals, Strong acids, Organic materials.

#### **Hazardous decomposition products**

Products formed under fire conditions. - Nitrogen oxides (NOx).

# **SECTION 11: Toxicological information**

# Information on toxicological effects

Acute toxicity : Oral: Harmful if swallowed.

POTASSIUM NITRATE (1803, 90%+) (191354-71-9)	
LD50 oral rat	3750 mg/kg
ATE CLP (oral)	500.000 mg/kg body weight
Skin corrosion/irritation	: Causes skin irritation.
	No data available
	pH: 5.5 - 8 at 50 g/l at 20 °C (68 °F)
Serious eye damage/irritation	: Causes serious eye irritation.
	No data available
	pH: 5.5 - 8 at 50 g/l at 20 °C (68 °F)
Respiratory or skin sensitization	: Not available
	No data available
Germ cell mutagenicity	: Not available
Carcinogenicity	: Not classified

14/06/2018 EN (English US) 5/9

: Not classified

# Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2015/830 and according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

: May cause respiratory irritation. Specific target organ toxicity - single exposure

No data available

Specific target organ toxicity - repeated

exposure

No data available

Not classified

Aspiration hazard : Not classified

Potential Adverse human health effects and

symptoms

Absorption into the body leads to the formation of methemoglobin which in sufficient concentration causes cyanosis. Onset may be delayed 2 to 4 hours or longer.

IARC group

Symptoms/effects after inhalation : May be harmful if inhaled. May cause respiratory tract irritation.

Symptoms/effects after skin contact : Causes skin irritation. Symptoms/effects after eye contact : Causes serious eye burns. Symptoms/effects after ingestion : Harmful if swallowed.

# **SECTION 12: Ecological information**

#### Toxicity

Ecology - general : Harmful to aquatic life.

POTASSIUM NITRATE (1803, 90%+) (191354-71-9)	
LC50 fish 1	22.5 mg/l Gambusia affinis (Mosquito fish) - 96 h
EC50 Daphnia 1	226 mg/l Daphnia magna (Water flea) - 72 h
LC50 fish 2	1378 mg/l Poecilia reticulata (guppy) - 96 h

#### Persistence and degradability

Persistence and degradability Not available.

#### 12.3. **Bioaccumulative potential**

### POTASSIUM NITRATE (1803, 90%+) (191354-71-9)

Bioaccumulative potential Not available.

#### **Mobility in soil**

# POTASSIUM NITRATE (1803, 90%+) (191354-71-9)

Ecology - soil Not available.

# Results of PBT and vPvB assessment

No additional information available

#### Other adverse effects 12.6.

Other adverse effects : Not available.

### **SECTION 13: Disposal considerations**

### Waste treatment methods

Regional legislation (waste)

: Waste materials should be disposed of under conditions which meet Federal, State, and local environmental control regulations.

Waste treatment methods

Burn in a chemical incinerator equipped with an afterburner and a scrubber, but use extra care in ignition as this material may be pyrophoric, highly flammable or explosive. Attention: national and/or local laws and regulations may preclude the use of this method. Offer surplus and nonrecyclable solutions to a licensed disposal company. Contact licensed disposal company to dispose of this material. Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an after burner and scrubber.

Product/Packaging disposal recommendations : Dispose of as unused product.

# **SECTION 14: Transport information**

In accordance with ADR / RID / IMDG / IATA / ADN

## **UN** number

UN-No.(DOT) : 1486 DOT NA no. UN1486

#### **UN** proper shipping name

Proper Shipping Name (DOT) : Potassium nitrate

Class (DOT) : 5.1 - Class 5.1 - Oxidizer 49 CFR 173.128

14/06/2018 EN (English US) 6/9

# Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2015/830 and according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

: 5.1 - Oxidizer Hazard labels (DOT)



Packing group (DOT) : III - Minor Danger

DOT Special Provisions (49 CFR 172.102) : A1 - Single packaging are not permitted on passenger aircraft.

A29 - Combination packaging consisting of outer expanded plastic boxes with inner plastic

bags are not authorized for transportation by aircraft.

IB8 - Authorized IBCs: Metal (11A, 11B, 11N, 21A, 21B, 21N, 31A, 31B and 31N); Rigid plastics (11H1, 11H2, 21H1, 21H2, 31H1 and 31H2); Composite (11HZ1, 11HZ2, 21HZ1, 21HZ2, 31HZ1 and 31HZ2); Fiberboard (11G); Wooden (11C, 11D and 11F); Flexible (13H1, 13H2, 13H3, 13H4, 13H5, 13L1, 13L2, 13L3, 13L4, 13M1 or 13M2).

IP3 - Flexible IBCs must be sift-proof and water-resistant or must be fitted with a sift-proof and water-resistant liner.

T1 - 1.5 178.274(d)(2) Normal..... 178.275(d)(2)

TP33 - The portable tank instruction assigned for this substance applies for granular and powdered solids and for solids which are filled and discharged at temperatures above their melting point which are cooled and transported as a solid mass. Solid substances transported or offered for transport above their melting point are authorized for transportation in portable tanks conforming to the provisions of portable tank instruction T4 for solid substances of packing group III or T7 for solid substances of packing group II, unless a tank with more stringent requirements for minimum shell thickness, maximum allowable working pressure, pressure-relief devices or bottom outlets are assigned in which case the more stringent tank instruction and special provisions shall apply. Filling limits must be in accordance with portable tank special provision TP3. Solids meeting the definition of an elevated temperature material must be transported in accordance with the applicable requirements of this subchapter. W1 - This substance in a non friable prill or granule form is not subject to the requirements of this subchapter when tested in accordance with the UN Manual of Test and Criteria (IBR, see §171.7 of this subchapter) and is found to not meet the definition or criteria for inclusion in

DOT Packaging Exceptions (49 CFR 173.xxx) : 152 DOT Packaging Non Bulk (49 CFR 173.xxx) : 213 DOT Packaging Bulk (49 CFR 173.xxx) : 240 Marine pollutant : No

# **Additional information**

Other information : No supplementary information available.

# **Overland transport**

: 111 Packing group (ADR)

Class (ADR) : 5.1 - Oxidizing substances

Hazard identification number (Kemler No.) : 50 : O2 Classification code (ADR)

Hazard labels (ADR) - Oxidizing substances



Orange plates



Tunnel restriction code (ADR) : E Limited quantities (ADR) 5kg **EAC** : 1Z Excepted quantities (ADR) : E1

### Transport by sea

**DOT Vessel Stowage Location** : A - The material may be stowed "on deck" or "under deck" on a cargo vessel and on a

passenger vessel.

14/06/2018 EN (English US) 7/9

# Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2015/830 and according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

MFAG-No : 140

Air transport

DOT Quantity Limitations Passenger aircraft/rail : 25 kg

(49 CFR 173.27)

DOT Quantity Limitations Cargo aircraft only (49 : 100 kg

CFR 175.75)

Civil Aeronautics Law : Oxidizing substances and organic peroxides/Oxidizing substances

14.4. Environmental hazards

Other information : No supplementary information available.

14.5. Special precautions for user

14.6. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable

### **SECTION 15: Regulatory information**

### 15.1. US Federal regulations

POTASSIUM NITRATE (1803, 90%+) (191354-71-9)		
SARA Section 302 Threshold Planning Quantity (TPQ)	Not subject to reporting requirements of the United States SARA Section 312	
SARA Section 311/312 Hazard Classes	Reactive hazard Delayed (chronic) health hazard Immediate (acute) health hazard	
SARA Section 313 - Emission Reporting	Subject to reporting requirements of United States SARA Section 313	

### 15.2. International regulations

#### **CANADA**

# POTASSIUM NITRATE (1803, 90%+) (191354-71-9)

Listed on the Canadian DSL (Domestic Substances List)

#### 15.2.1. National regulations

No additional information available

# 15.3. US State regulations

POTASSIUM NITRATE (1803, 90%+)(191354-71-9)	
U.S California - Proposition 65 - Carcinogens List	No
U.S California - Proposition 65 - Developmental Toxicity	No
U.S California - Proposition 65 - Reproductive Toxicity - Female	No
U.S California - Proposition 65 - Reproductive Toxicity - Male	No
State or local regulations	U.S Massachusetts - Right To Know List U.S Pennsylvania - RTK (Right to Know) List U.S New Jersey - Right to Know Hazardous Substance List This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

# **SECTION 16: Other information**

# Full text of R-, H- and EUH-phrases:

text of tt, it and bert privates.		
Acute Tox. 4 (Oral)	Acute toxicity (oral) Category 4	
Aquatic Chronic 3	Hazardous to the aquatic environment - Chronic Hazard Category 3	
Eye Irrit. 2	Serious eye damage/eye irritation Category 2	
Ox. Sol. 2	Oxidizing solids Category 2	
Skin Irrit. 2	Skin corrosion/irritation Category 2	
STOT SE 3	Specific target organ toxicity (single exposure) Category 3	

14/06/2018 EN (English US) 8/9

# Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2015/830 and according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

H272	May intensify fire; oxidizer
H302	Harmful if swallowed
H315	Causes skin irritation
H319	Causes serious eye irritation
H335	May cause respiratory irritation
H412	Harmful to aquatic life with long lasting effects
R22	Harmful if swallowed
R36/37/38	Irritating to eyes, respiratory system and skin
R8	Contact with combustible material may cause fire
R9	Explosive when mixed with combustible material
0	Oxidizing
Xi	Irritant
Xn	Harmful

NFPA health hazard : 2 - Materials that, under emergency conditions, can cause

temporary incapacitation or residual injury.

NFPA fire hazard : 0 - Materials that will not burn under typical fire conditions, including intrinsically noncombustible materials such as

concrete, stone, and sand.

NFPA reactivity : 1 - Materials that in themselves are normally stable but can

become unstable at elevated temperatures and pressures.

: OX - Materials that posses oxidizing properties.



#### **Hazard Rating**

NFPA specific hazard

Health : 2 Moderate Hazard - Temporary or minor injury may occur

Flammability : 0 Minimal Hazard
Physical : 1 Slight Hazard

#### CIL Substance SDS

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

14/06/2018 EN (English US) 9/9