

This safety data sheet complies with the requirements of:
Regulation (EC) No. 1907/2006 and Regulation (EC) No. 1272/2008

Issuing Date 11-Nov-2016

Revision Date 11-Nov-2016

Revision Number 1
ENG

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

1.1. Product identifier

Product Code(s) LK1-CB102009-1L

Product Name (4 x 250 mL) USP 1 mg/L in 5% HNO₃ + Tr HF 500 Ca 100 Al, B, K, Mg, Na, P 10 Ag, As, Ba, Be, Bi, Cd, Co, Cr, Cu, Fe, Ga, Li, Mn Mo, Ni, Pb, Rb, Se, Sr, Ti, V, Zn, Cs, Ge, Te, U

REACH registration number Not applicable

CAS No. Not applicable

Contains Nitric Acid, Hydrofluoric Acid, Beryllium Nitrate, Nickel Nitrate

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

Recommended Use Laboratory chemicals
Production of chemical substance

Uses advised against Not for human consumption

1.3. Details of the supplier of the safety data sheet

Manufacturer
LabKings B.V
Utrechtseweg 5, 1213TK Hilversum, The Netherlands
+31 84 875 63 44
www.labkings.com

1.4. Emergency telephone number

Emergency Telephone Chemtrec, Inside the USA: 1-800-424-9300
Chemtrec, Outside the USA: 001-703-527-3887

Europe	112
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Section 2: HAZARDS IDENTIFICATION

2.1. Classification of the substance or mixture

Regulation (EC) No 1272/2008

Acute toxicity - Inhalation (Vapors)	Category 3 - (H331)
Acute toxicity - Inhalation (Dusts/Mists)	Category 4 - (H332)
Skin corrosion/irritation	Category 1 Sub-category B - (H314)
Serious eye damage/eye irritation	Category 1 - (H318)
Corrosive to metals	Category 1 - (H290)

2.2. Label elements

Regulation (EC) No 1272/2008

Contains Nitric Acid, Hydrofluoric Acid, Beryllium Nitrate, Nickel Nitrate

LK1-CB102009-1L - (4 x 250 mL) USP 1 mg/L in 5%
HNO₃ + Tr HF 500 Ca 100 Al, B, K, Mg, Na, P 10 Ag,
As, Ba, Be, Bi, Cd, Co, Cr, Cu, Fe, Ga, Li, Mn Mo,
Ni, Pb, Rb, Se, Sr, Tl, V, Zn, Cs, Ge, Te, U

Revision Date 11-Nov-2016



Signal word
Danger

Hazard statements

H314 - Causes severe skin burns and eye damage

H331 - Toxic if inhaled

H290 - May be corrosive to metals

EUH208 -

Precautionary Statements - EU (§28, 1272/2008)

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

P260 - Do not breathe dust/fume/gas/mist/vapors/spray

P280 - Wear protective gloves/protective clothing/eye protection/face protection

P303 + P361 + P353 - IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/ shower

P321 - Specific treatment (see supplemental first aid instructions on this label)

P280 - Wear eye protection/ face protection

P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing

P310 - Immediately call a POISON CENTER or doctor

P234 - Keep only in original container

P406 - Store in corrosive resistant container with a resistant inner liner

2.3. Other hazards

No information available

Section 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances

The exact concentration of each component can be found on the Certificate of Analysis

Chemical name	CAS No.	Weight-%
Water	7732-18-5	94.854
Nitric Acid	7697-37-2	5
Calcium Nitrate	10124-37-5	0.05
Sodium Nitrate	7631-99-4	0.01
potassium nitrate	7757-79-1	0.01
Magnesium Nitrate Hexahydrate	13446-18-9	0.01
Hydrofluoric Acid	7664-39-3	Trace
Boric Acid	10043-35-3	0.01
Ammonium Dihydrogen Phosphate	7722-76-1	0.01
Aluminum Nitrate Nonahydrate	7784-27-2	0.01
Zinc Nitrate	7779-88-6	0.001
Uranyl Nitrate	13520-83-7	0.001
Thallium Nitrate	10102-45-1	0.001
Tellurium Nitrate	21883-56-7	0.001
Strontium Nitrate	10042-76-9	0.001
Silver Nitrate	7661-88-8	0.001
Selenium Metal	7782-49-2	0.001

Rubidium nitrate	13126-12-0	0.001
Nickel Nitrate	13138-45-9	0.001
Molybdenum Metal	7439-98-7	0.001
Manganese nitrate hydrate	15710-66-4	0.001
Lithium Nitrate	7790-69-4	0.001
Lead Nitrate	10099-74-8	0.001
Gallium Nitrate	69365-72-6	0.001
Ferric Nitrate Nonahydrate	7782-61-8	0.001
Copper Nitrate	3251-23-8	0.001
Chromium Nitrate	10103-47-6	0.001
Cesium nitrate	7789-18-6	0.001
Cadmium(II) nitrate	10325-94-7	0.001
Bismuth(III) nitrate hydrate	10361-44-1	0.001
Beryllium Nitrate	13597-99-4	0.001
Barium Nitrate	10022-31-8	0.001
Arsenic Metal	7440-38-2	0.001
Ammonium MetaVanadate	7803-55-6	0.001
Ammonium Hexafluorogermate	16962-47-3	0.001
1Cobalt	10026-22-9	0.001

3.2 Mixtures

Chemical name	CAS No.	Classification according to Regulation (EC) No. 1272/2008 [CLP]
Water	7732-18-5	No data available
Nitric Acid	7697-37-2	Skin Corr. 1A (H314) (EUH071) Ox. Liq. 2 (H272)
Calcium Nitrate	10124-37-5	No data available
Sodium Nitrate	7631-99-4	No data available
potassium nitrate	7757-79-1	No data available
Magnesium Nitrate Hexahydrate	13446-18-9	No data available
Hydrofluoric Acid	7664-39-3	Acute Tox. 2 (H300) Acute Tox. 1 (H310) Acute Tox. 2 (H330) Skin Corr. 1A (H314)
Boric Acid	10043-35-3	Repr. 1B (H360FD)
Ammonium Dihydrogen Phosphate	7722-76-1	No data available
Aluminum Nitrate Nonahydrate	7784-27-2	No data available
Zinc Nitrate	7779-88-6	No data available
Uranyl Nitrate	13520-83-7	Acute Tox. 2 (H300) Acute Tox. 2 (H330) STOT RE 2 (H373) Aquatic Chronic 2 (H411)
Thallium Nitrate	10102-45-1	Acute Tox. 2 (H300) Acute Tox. 2 (H330) STOT RE 2 (H373) Aquatic Chronic 2 (H411)
Tellurium Nitrate	21883-56-7	No data available
Strontium Nitrate	10042-76-9	No data available
Silver Nitrate	7661-88-8	No data available
Selenium Metal	7782-49-2	Acute Tox. 3 (H301) Acute Tox. 3 (H331) STOT RE 2 (H373) Aquatic Chronic 4 (H413)
Rubidium nitrate	13126-12-0	No data available
Nickel Nitrate	13138-45-9	Acute Tox. 4 (H302)

		Acute Tox. 4 (H332) Skin Irrit. 2 (H315) Eye Dam. 1 (H318) Resp. Sens. 1 (H334) Skin Sens. 1 (H317) Muta. 2 (H341) Carc. 1A (H350i) Repr. 1B (H360D) STOT RE 1 (H372) Aquatic Acute 1 (H400) Aquatic Chronic 1 (H410) Ox. Sol. 2 (H272)
Molybdenum Metal	7439-98-7	No data available
Manganese nitrate hydrate	15710-66-4	No data available
Lithium Nitrate	7790-69-4	No data available
Lead Nitrate	10099-74-8	Acute Tox. 4 (H302) Acute Tox. 4 (H332) Repr. 1A (H360Df) STOT RE 2 (H373) Aquatic Acute 1 (H400) Aquatic Chronic 1 (H410)
Gallium Nitrate	69365-72-6	No data available
Ferric Nitrate Nonahydrate	7782-61-8	No data available
Copper Nitrate	3251-23-8	No data available
Chromium Nitrate	10103-47-6	No data available
Cesium nitrate	7789-18-6	No data available
Cadmium(II) nitrate	10325-94-7	Acute Tox. 4 (H302) Acute Tox. 4 (H312) Acute Tox. 4 (H332) Aquatic Acute 1 (H400) Aquatic Chronic 1 (H410)
Bismuth(III) nitrate hydrate	10361-44-1	No data available
Beryllium Nitrate	13597-99-4	Acute Tox. 3 (H301) Acute Tox. 2 (H330) Skin Irrit. 2 (H315) Eye Irrit. 2 (H319) Skin Sens. 1 (H317) Carc. 1B (H350i) STOT SE 3 (H335) STOT RE 1 (H372) Aquatic Chronic 2 (H411)
Barium Nitrate	10022-31-8	Acute Tox. 4 (H302) Acute Tox. 4 (H332)
Arsenic Metal	7440-38-2	Acute Tox. 3 (H301) Acute Tox. 3 (H331) Aquatic Acute 1 (H400) Aquatic Chronic 1 (H410)
Ammonium MetaVanadate	7803-55-6	No data available
Ammonium Hexafluorogermanate	16962-47-3	No data available
1Cobalt	10026-22-9	No data available

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

Section 4: FIRST AID MEASURES

4.1. Description of first aid measures

General advice	Immediate medical attention may be required. Show this safety data sheet to the doctor in attendance.
Inhalation	IF INHALED: Remove to fresh air and keep at rest in a position comfortable for breathing. Administer oxygen if breathing is difficult. IF exposed or concerned: Get medical advice/attention.
Eye contact	Rinse thoroughly with plenty of water for at least 15 minutes, lifting lower and upper eyelids. Consult a physician.
Skin contact	Wash off immediately with plenty of water for at least 15 minutes. Get medical attention immediately if symptoms occur.
Ingestion	Do not induce vomiting without medical advice. Rinse mouth thoroughly with water. Get immediate medical advice/attention.

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

Symptoms	Skin irritation. Eye irritation.
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4.3. Indication of any immediate medical attention and special treatment needed

Note to physicians	Treat symptomatically.
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Section 5: FIRE-FIGHTING MEASURES

5.1. Extinguishing media

Suitable Extinguishing Media	Dry chemical, CO ₂ , alcohol-resistant foam or water spray. Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
Unsuitable extinguishing media	No information available.

5.2. Special hazards arising from the substance or mixture

Specific hazards arising from the chemical	No information available.
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5.3. Advice for firefighters

Special protective equipment for fire-fighters	Firefighters should wear self-contained breathing apparatus and full firefighting turnout gear. Use personal protection equipment.
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Section 6: ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures

Personal precautions	Ensure adequate ventilation. Avoid breathing dust/fume/gas/mist/vapors/spray. Avoid contact with skin, eyes or clothing. Wear protective gloves/protective clothing and eye/face protection. Handle within a fume cupboard or implement suitable equivalent methods to minimize exposure.
For emergency responders	Use personal protection recommended in Section 8.

6.2. Environmental precautions

Environmental precautions See Section 12 for additional Ecological Information.

6.3. Methods and material for containment and cleaning up

Methods for containment Prevent further leakage or spillage if safe to do so.

Methods for cleaning up Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust). Place in appropriate chemical waste container.

Prevention of secondary hazards Clean contaminated objects and areas thoroughly observing environmental regulations.

6.4. Reference to other sections

Reference to other sections See section 8 for more information. See section 13 for more information.

Section 7: HANDLING AND STORAGE

7.1. Precautions for safe handling

Advice on safe handling Avoid contact with skin, eyes or clothing. Do not breathe dust/fume/gas/mist/vapors/spray. Ensure adequate ventilation. Use personal protection equipment. Handle in a fume cupboard.

General hygiene considerations Handle in accordance with good industrial hygiene and safety practice.

7.2. Conditions for safe storage, including any incompatibilities

Storage Conditions Keep containers tightly closed in a dry, cool and well-ventilated place. For more information, see product label and/or certificate of analysis.

7.3. Specific end use(s)

Risk Management Methods (RMM) The information required is contained in this Material Safety Data Sheet.

Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Control parameters

Exposure Limits

Chemical name	European Union	United Kingdom	France	Spain	Germany
Nitric Acid 7697-37-2	-	STEL: 1 ppm STEL: 2.6 mg/m ³	STEL: 1 ppm STEL: 2.6 mg/m ³	STEL: 1 ppm STEL: 2.6 mg/m ³	TWA: 1 ppm TWA: 2.6 mg/m ³
Hydrofluoric Acid 7664-39-3	TWA 1.8 ppm TWA 1.5 mg/m ³ STEL 3 ppm STEL 2.5 mg/m ³	TWA: 1.8 ppm TWA: 1.5 mg/m ³ STEL: 3 ppm STEL: 2.5 mg/m ³	TWA: 1.8 ppm TWA: 1.5 mg/m ³ STEL: 3 ppm STEL: 2.5 mg/m ³	TWA: 1.8 ppm TWA: 1.5 mg/m ³ STEL: 3 ppm STEL: 2.5 mg/m ³	TWA: 1 ppm TWA: 0.83 mg/m ³ TWA: 1 mg/m ³ H*
Boric Acid 10043-35-3	-	-	-	TWA: 2 mg/m ³ STEL: 6 mg/m ³	TWA: 0.5 mg/m ³
Aluminum Nitrate Nonahydrate 7784-27-2	-	TWA: 2 mg/m ³	TWA: 2 mg/m ³	TWA: 2 mg/m ³	-
Uranyl Nitrate 13520-83-7	-	-	-	TWA: 0.2 mg/m ³ STEL: 0.6 mg/m ³	-
Thallium Nitrate	-	TWA: 0.1 mg/m ³	-	TWA: 0.1 mg/m ³	-

10102-45-1		Sk*		vía dérmica*	
Tellurium Nitrate 21883-56-7	-	TWA: 0.1 mg/m ³	TWA: 0.1 mg/m ³	TWA: 0.1 mg/m ³	-
Selenium Metal 7782-49-2	-	TWA: 0.1 mg/m ³ STEL: 0.3 mg/m ³	-	TWA: 0.1 mg/m ³	TWA: 0.05 mg/m ³
Nickel Nitrate 13138-45-9	-	TWA: 0.1 mg/m ³ Sk*	-	TWA: 0.1 mg/m ³	-
Molybdenum Metal 7439-98-7	-	TWA: 10 mg/m ³	-	TWA: 10 mg/m ³ TWA: 3 mg/m ³	-
Manganese nitrate hydrate 15710-66-4	-	TWA: 0.5 mg/m ³	-	TWA: 0.2 mg/m ³	TWA: 0.2 mg/m ³ TWA: 0.02 mg/m ³
Lead Nitrate 10099-74-8	-	TWA: 0.15 mg/m ³	TWA: 0.1 mg/m ³	TWA: 0.15 mg/m ³	-
Ferric Nitrate Nonahydrate 7782-61-8	-	TWA: 1 mg/m ³	-	TWA: 1 mg/m ³	-
Cadmium(II) nitrate 10325-94-7	-	TWA: 0.025 mg/m ³	TWA: 0.05 mg/m ³	TWA: 0.01 mg/m ³ TWA: 0.002 mg/m ³	-
Beryllium Nitrate 13597-99-4	-	TWA: 0.002 mg/m ³	TWA: 0.002 mg/m ³	TWA: 0.0002 mg/m ³	-
Barium Nitrate 10022-31-8	TWA: 0.5 mg/m ³ Ba	TWA: 0.5 mg/m ³	TWA: 0.5 mg/m ³	TWA: 0.5 mg/m ³	TWA: 0.5 mg/m ³
Arsenic Metal 7440-38-2	-	TWA: 0.1 mg/m ³ STEL: 0.3 mg/m ³	-	TWA: 0.01 mg/m ³	-
Ammonium MetaVanadate 7803-55-6	-	-	-	-	TWA: 0.005 mg/m ³ TWA: 0.03 mg/m ³
1Cobalt 10026-22-9	-	TWA: 0.1 mg/m ³	-	TWA: 0.02 mg/m ³	-
Chemical name	Italy	Portugal	Netherlands	Finland	Denmark
Nitric Acid 7697-37-2	STEL: 1 ppm STEL: 2.6 mg/m ³	TWA: 2 ppm STEL: 4 ppm	STEL: 1.3 mg/m ³	TWA: 0.5 ppm TWA: 1.3 mg/m ³ STEL: 1 ppm STEL: 2.6 mg/m ³	-
Hydrofluoric Acid 7664-39-3	TWA: 1.8 ppm TWA: 1.5 mg/m ³ STEL: 3 ppm STEL: 2.5 mg/m ³	TWA: 0.5 ppm TWA: 1.5 mg/m ³ TWA: 2.5 mg/m ³ STEL: 3 ppm STEL: 2.5 mg/m ³ Ceiling: 2 ppm	STEL: 1 mg/m ³	TWA: 1.8 ppm TWA: 1.5 mg/m ³ STEL: 3 ppm STEL: 2.5 mg/m ³ iho*	TWA: 1.8 ppm TWA: 1.5 mg/m ³ TWA: 2.5 mg/m ³
Boric Acid 10043-35-3	-	TWA: 2 mg/m ³ STEL: 6 mg/m ³	-	-	-
Aluminum Nitrate Nonahydrate 7784-27-2	-	TWA: 2 mg/m ³	-	-	TWA: 1 mg/m ³
Uranyl Nitrate 13520-83-7	-	TWA: 0.2 mg/m ³ STEL: 0.6 mg/m ³	-	TWA: 0.2 mg/m ³ TWA: 0.05 mg/m ³	TWA: 0.2 mg/m ³
Thallium Nitrate 10102-45-1	-	TWA: 0.1 mg/m ³	-	TWA: 0.1 mg/m ³	TWA: 0.1 mg/m ³ H*
Tellurium Nitrate 21883-56-7	-	TWA: 0.1 mg/m ³	-	TWA: 0.1 mg/m ³ STEL: 0.3 mg/m ³	TWA: 0.1 mg/m ³
Selenium Metal 7782-49-2	-	TWA: 0.2 mg/m ³	-	TWA: 0.1 mg/m ³ STEL: 0.3 mg/m ³	TWA: 0.1 mg/m ³
Nickel Nitrate 13138-45-9	-	TWA: 0.1 mg/m ³	-	TWA: 0.05 mg/m ³ TWA: 0.01 mg/m ³	TWA: 0.01 mg/m ³
Molybdenum Metal 7439-98-7	-	TWA: 10 mg/m ³ TWA: 3 mg/m ³	-	TWA: 0.5 mg/m ³	TWA: 10 mg/m ³

Manganese nitrate hydrate 15710-66-4	-	TWA: 0.2 mg/m ³	-	TWA: 0.2 mg/m ³ TWA: 0.02 mg/m ³	TWA: 0.2 mg/m ³
Lead Nitrate 10099-74-8	TWA: 0.15 mg/m ³	TWA: 0.05 mg/m ³	-	-	TWA: 0.05 mg/m ³
Ferric Nitrate Nonahydrate 7782-61-8	-	TWA: 1 mg/m ³	-	TWA: 1 mg/m ³	TWA: 1 mg/m ³
Copper Nitrate 3251-23-8	-	-	-	TWA: 1 mg/m ³	-
Cadmium(II) nitrate 10325-94-7	-	TWA: 0.002 mg/m ³	-	TWA: 0.02 mg/m ³ ih ^o *	TWA: 0.005 mg/m ³
Beryllium Nitrate 13597-99-4	-	TWA: 0.002 mg/m ³ STEL: 0.01 mg/m ³	-	TWA: 0.0001 mg/m ³ STEL: 0.0004 mg/m ³	TWA: 0.001 mg/m ³
Barium Nitrate 10022-31-8	TWA: 0.5 mg/m ³	TWA: 0.5 mg/m ³	TWA: 0.5 mg/m ³	TWA: 0.5 mg/m ³	TWA: 0.5 mg/m ³
Arsenic Metal 7440-38-2	-	TWA: 0.01 mg/m ³	TWA: 0.0028 mg/m ³	TWA: 0.01 ppm	TWA: 0.01 mg/m ³
1Cobalt 10026-22-9	-	TWA: 0.02 mg/m ³	-	TWA: 0.02 mg/m ³	TWA: 0.01 mg/m ³
Chemical name	Austria	Switzerland	Poland	Norway	Ireland
Nitric Acid 7697-37-2	STEL 1 ppm STEL 2.6 mg/m ³	TWA: 2 ppm TWA: 5 mg/m ³ STEL: 2 ppm STEL: 5 mg/m ³	STEL: 2.6 mg/m ³ TWA: 1.4 mg/m ³	TWA: 2 ppm TWA: 5 mg/m ³ STEL: 2 ppm STEL: 5 mg/m ³	STEL: 1 ppm STEL: 2.6 mg/m ³
Hydrofluoric Acid 7664-39-3	TWA: 1.8 ppm TWA: 1.5 mg/m ³ STEL 3 ppm STEL 2.5 mg/m ³ H*	TWA: 1 ppm TWA: 0.83 mg/m ³ STEL: 2 ppm STEL: 1.66 mg/m ³	STEL: 2 mg/m ³ TWA: 0.5 mg/m ³ TWA: 2 mg/m ³	TWA: 0.5 mg/m ³ STEL: 0.5 mg/m ³ H*	TWA: 1.8 ppm TWA: 1.5 mg/m ³ TWA: 2.5 mg/m ³ STEL: 3 ppm STEL: 2.5 mg/m ³ STEL: 7.5 mg/m ³ Sk*
Boric Acid 10043-35-3	-	TWA: 10 mg/m ³ STEL: 10 mg/m ³	-	-	-
Aluminum Nitrate Nonahydrate 7784-27-2	-	TWA: 2 mg/m ³	-	TWA: 2 mg/m ³ STEL: 2 mg/m ³	TWA: 2 mg/m ³ STEL: 6 mg/m ³
Uranyl Nitrate 13520-83-7	TWA: 0.25 mg/m ³ STEL 1 mg/m ³	TWA: 0.2 mg/m ³ H*	STEL: 0.12 mg/m ³ TWA: 0.015 mg/m ³	TWA: 0.2 mg/m ³ STEL: 0.2 mg/m ³	TWA: 0.2 mg/m ³ STEL: 0.6 mg/m ³
Thallium Nitrate 10102-45-1	TWA: 0.1 mg/m ³ STEL 1 mg/m ³	TWA: 0.1 mg/m ³ H*	STEL: 0.3 mg/m ³ TWA: 0.1 mg/m ³	TWA: 0.1 mg/m ³ STEL: 0.3 mg/m ³ H*	TWA: 0.1 mg/m ³ STEL: 0.3 mg/m ³ Sk*
Tellurium Nitrate 21883-56-7	TWA: 0.1 mg/m ³ STEL 0.5 mg/m ³	TWA: 0.1 mg/m ³ STEL: 0.2 mg/m ³	STEL: 0.03 mg/m ³ TWA: 0.01 mg/m ³	-	TWA: 0.1 mg/m ³ STEL: 0.3 mg/m ³
Selenium Metal 7782-49-2	TWA: 0.1 mg/m ³ STEL 0.3 mg/m ³	TWA: 0.02 mg/m ³ STEL: 0.16 mg/m ³ H*	STEL: 0.3 mg/m ³ TWA: 0.1 mg/m ³	TWA: 0.05 mg/m ³ STEL: 0.15 mg/m ³	TWA: 0.1 mg/m ³ STEL: 0.3 mg/m ³
Nickel Nitrate 13138-45-9	-	-	TWA: 0.25 mg/m ³	TWA: 0.05 mg/m ³ STEL: 0.05 mg/m ³	TWA: 0.1 mg/m ³ STEL: 0.3 mg/m ³
Molybdenum Metal 7439-98-7	TWA: 10 mg/m ³ STEL 20 mg/m ³	TWA: 10 mg/m ³	STEL: 10 mg/m ³ TWA: 4 mg/m ³	TWA: 10 mg/m ³ STEL: 10 mg/m ³	TWA: 3 mg/m ³ TWA: 0.5 mg/m ³ STEL: 9 mg/m ³ STEL: 1.5 mg/m ³
Manganese nitrate hydrate 15710-66-4	TWA: 0.5 mg/m ³ STEL 2 mg/m ³	TWA: 0.5 mg/m ³	TWA: 0.2 mg/m ³ TWA: 0.05 mg/m ³	TWA: 1 mg/m ³ TWA: 0.1 mg/m ³ STEL: 1 ppm STEL: 0.1 mg/m ³	TWA: 0.2 mg/m ³ STEL: 0.6 mg/m ³

Lead Nitrate 10099-74-8	TWA: 0.1 mg/m ³ STEL 0.4 mg/m ³	TWA: 0.1 mg/m ³ STEL: 0.8 mg/m ³	TWA: 0.05 mg/m ³	TWA: 0.05 mg/m ³ STEL: 0.05 mg/m ³	TWA: 0.15 mg/m ³ STEL: 0.45 mg/m ³
Ferric Nitrate Nonahydrate 7782-61-8	-	TWA: 1 mg/m ³	-	TWA: 1 mg/m ³ STEL: 1 mg/m ³	TWA: 1 mg/m ³ STEL: 2 mg/m ³
Copper Nitrate 3251-23-8	TWA: 1 mg/m ³ TWA: 0.1 mg/m ³ STEL 4 mg/m ³ STEL 0.4 mg/m ³	TWA: 0.1 mg/m ³ STEL: 0.2 mg/m ³	TWA: 0.2 mg/m ³	-	-
Cadmium(II) nitrate 10325-94-7	-	TWA: 0.015 mg/m ³ H*	TWA: 0.01 mg/m ³ TWA: 0.002 mg/m ³	TWA: 0.05 mg/m ³ STEL: 0.05 mg/m ³	TWA: 0.002 mg/m ³ TWA: 0.01 mg/m ³ STEL: 0.03 mg/m ³ STEL: 0.006 mg/m ³
Beryllium Nitrate 13597-99-4	-	TWA: 0.002 mg/m ³	TWA: 0.0002 mg/m ³	TWA: 0.001 mg/m ³ STEL: 0.001 mg/m ³	TWA: 0.0002 mg/m ³ STEL: 0.0006 mg/m ³
Barium Nitrate 10022-31-8	TWA: 0.5 mg/m ³ STEL 2 mg/m ³	TWA: 0.5 mg/m ³ STEL: 4 mg/m ³	TWA: 0.5 mg/m ³	TWA: 0.5 mg/m ³ STEL: 0.5 mg/m ³	TWA: 0.5 mg/m ³ STEL: 1.5 mg/m ³
Arsenic Metal 7440-38-2	-	-	TWA: 0.01 mg/m ³	TWA: 0.01 mg/m ³ STEL: 0.01 mg/m ³	TWA: 0.01 mg/m ³ STEL: 0.03 mg/m ³
1Cobalt 10026-22-9	H*	TWA: 0.05 mg/m ³ H*	TWA: 0.02 mg/m ³	TWA: 0.02 mg/m ³ STEL: 0.02 mg/m ³ STEL: 0.06 mg/m ³	TWA: 0.1 mg/m ³ STEL: 0.3 mg/m ³

Biological occupational exposure limits

Chemical name	European Union	United Kingdom	France	Spain	Germany
Hydrofluoric Acid 7664-39-3	-	-	-	8	7.0 mg/g 4.0 mg/g
Arsenic Metal 7440-38-2	-	-	-	35	
Chemical name	Italy	Portugal	Netherlands	Finland	Denmark
Arsenic Metal 7440-38-2	-	-	-	70	
Chemical name	Austria	Switzerland	Poland	Norway	Ireland
Hydrofluoric Acid 7664-39-3	-	7 4	-	-	-
Selenium Metal 7782-49-2	-	150	-	-	-
Arsenic Metal 7440-38-2	-	50	-	-	-

Derived No Effect Level (DNEL) No information available.

Predicted No Effect Concentration (PNEC) No information available.

8.2. Exposure controls

Engineering controls

Apply technical measures to comply with the occupational exposure limits. Showers, eyewash stations, and ventilation systems. Ensure that eyewash stations and safety showers are close to the workstation location.

Personal protective equipment

Eye/face protection

Wear safety glasses with side shields (or goggles). Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Hand Protection	Protective gloves. Ensure that the breakthrough time of the glove material is not exceeded. Refer to glove supplier for information on breakthrough time for specific gloves. Wash hands thoroughly after handling.
Skin and body protection	Wear suitable protective clothing. Chemical resistant apron. Wear impervious protective clothing, including boots, gloves, lab coat, apron or coveralls, as appropriate, to prevent skin contact.
Respiratory protection	Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced.
General hygiene considerations	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

Physical state	Liquid
Appearance	May vary
Odor	May vary.
Color	May vary
Odor threshold	No information available

<u>Property</u>	<u>Values</u>	<u>Remarks • Method</u>
pH	No data available	None known
Melting point / freezing point	0°C	None known
Boiling point / boiling range	100° C	None known
Flash point	No data available	None known
Evaporation rate	No data available	None known
Flammability (solid, gas)	No data available	None known
Flammability Limit in Air		None known
Upper flammability limit:	No data available	
Lower flammability limit:	No data available	
Vapor pressure	23 hPa (17 mm Hg)	None known
Vapor density	No data available	None known
Relative density	No data available	None known
Water solubility	Miscible in water	None known
Solubility(ies)	No data available	None known
Partition coefficient	No data available	None known
Autoignition temperature	No data available	None known
Decomposition temperature	No data available	None known
Kinematic viscosity	No data available	None known
Dynamic viscosity	No data available	None known
Explosive properties	No information available	
Oxidizing properties	No information available	

9.2. Other information

Softening point	No information available
Molecular weight (g/mol)	No information available
VOC Content (%)	No information available
Liquid Density	No information available
Bulk density	No information available
Particle Size	No information available

Particle Size Distribution No information available

Section 10: STABILITY AND REACTIVITY

10.1. Reactivity

Reactivity Stable under normal conditions.

10.2. Chemical stability

Stability Stable under normal conditions.

Explosion data

Sensitivity to Mechanical Impact None.

Sensitivity to Static Discharge None.

10.3. Possibility of hazardous reactions

Possibility of hazardous reactions None under normal processing.

10.4. Conditions to avoid

Conditions to avoid None known based on information supplied.

10.5. Incompatible materials

Incompatible materials None known based on information supplied.

10.6. Hazardous decomposition products

Hazardous decomposition products Nitrogen oxides (NO_x).

Section 11: TOXICOLOGICAL INFORMATION

11.1. Information on toxicological effects

Information on likely routes of exposure

Product Information

Inhalation Specific test data for the substance or mixture is not available.

Eye contact Specific test data for the substance or mixture is not available.

Skin contact Specific test data for the substance or mixture is not available.

Ingestion Specific test data for the substance or mixture is not available.

Information on toxicological effects

Symptoms Skin irritation. Eye irritation.

Numerical measures of toxicity

Acute toxicity

The following values are calculated based on chapter 3.1 of the GHS document mg/kg

ATEmix (inhalation-dust/mist) 2.60 mg/l
ATEmix (inhalation-vapor) 3.45 mg/l

Unknown acute toxicity 5 % of the mixture consists of ingredient(s) of unknown toxicity.
5 % of the mixture consists of ingredient(s) of unknown acute oral toxicity.
5 % of the mixture consists of ingredient(s) of unknown acute dermal toxicity.
5 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (gas).
0 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (vapor).
0 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (dust/mist).

Chemical name	Oral LD50	Dermal LD50	Inhalation LC50
Water	> 90 mL/kg (Rat)		
Nitric Acid			= 67 ppm (Rat) 4 h = 130 mg/m ³ (Rat) 4 h
Calcium Nitrate	= 302 mg/kg (Rat)		
Sodium Nitrate	= 1267 mg/kg (Rat)		
potassium nitrate	= 3015 mg/kg (Rat)		
Magnesium Nitrate Hexahydrate	= 5440 mg/kg (Rat)		
Hydrofluoric Acid			= 0.79 mg/L (Rat) 1 h
Boric Acid	= 2660 mg/kg (Rat)	> 2000 mg/kg (Rabbit)	> 0.16 mg/L (Rat) 4 h
Ammonium Dihydrogen Phosphate	= 5750 mg/kg (Rat)	> 7940 mg/kg (Rabbit)	
Aluminum Nitrate Nonahydrate	= 3671 mg/kg (Rat)		
Strontium Nitrate	= 2750 mg/kg (Rat) = 1892 mg/kg (Rat)		
Selenium Metal	= 6700 mg/kg (Rat)		
Rubidium nitrate	= 4625 mg/kg (Rat)		
Lead Nitrate	= 93 mg/kg (Rat)		
Ferric Nitrate Nonahydrate	= 3250 mg/kg (Rat)		
Copper Nitrate	= 794 mg/kg (Rat)		
Cesium nitrate	= 2390 mg/kg (Rat)		
Cadmium(II) nitrate	= 300 mg/kg (Rat)		
Barium Nitrate	= 355 mg/kg (Rat)		
Arsenic Metal	= 15 mg/kg (Rat) = 763 mg/kg (Rat)		
Ammonium MetaVanadate	= 58100 µg/kg (Rat) = 58.1 mg/kg (Rat)	= 2102 mg/kg (Rat)	= 7800 µg/m ³ (Rat) 4 h
1Cobalt	= 691 mg/kg (Rat)		

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Skin corrosion/irritation Irritating to skin.
Serious eye damage/eye irritation Irritating to eyes. Risk of serious damage to eyes.
Respiratory or skin sensitization No information available.
Germ cell mutagenicity Contains a known or suspected mutagen.

Chemical name	European Union
Nickel Nitrate	Muta. 2

Carcinogenicity Contains a known or suspected carcinogen.

Chemical name	European Union
Nickel Nitrate	Carc. 1A
Beryllium Nitrate	Carc. 1B

Reproductive toxicity Contains a known or suspected reproductive toxin.

Chemical name	European Union
Boric Acid	Repr. 1B
Nickel Nitrate	Repr. 1B
Lead Nitrate	Repr. 1A

STOT - single exposure No information available.

STOT - repeated exposure No information available.

Aspiration hazard No information available.

Section 12: ECOLOGICAL INFORMATION

12.1. Toxicity

Ecotoxicity The environmental impact of this product has not been fully investigated.

Chemical name	Algae/aquatic plants	Fish	Toxicity to microorganisms	Crustacea
Nitric Acid	-	72: 96 h <i>Gambusia affinis</i> mg/L LC50	-	-
Calcium Nitrate	-	10000: 96 h <i>Lepomis macrochirus</i> mg/L LC50 static	-	2355: 120 h <i>Daphnia magna</i> mg/L LC50
Sodium Nitrate	-	2000: 96 h <i>Lepomis macrochirus</i> mg/L LC50 static 994.4 - 1107: 96 h <i>Oncorhynchus mykiss</i> mg/L LC50 static	-	-
Hydrofluoric Acid	-	660: 48 h <i>Leuciscus idus</i> mg/L LC50	-	270: 48 h <i>Daphnia</i> species mg/L EC50
Boric Acid	-	1020: 72 h <i>Carassius auratus</i> mg/L LC50 flow-through	-	115 - 153: 48 h <i>Daphnia magna</i> mg/L EC50
Zinc Nitrate	-	7.8: 96 h <i>Cyprinus carpio</i> mg/L LC50 static	-	-
Ammonium MetaVanadate	-	1.5: 144 h <i>Poecilia reticulata</i> mg/L LC50	-	-

12.2. Persistence and degradability

Persistence and degradability No information available.

12.3. Bioaccumulative potential

Bioaccumulation No information available.

Chemical name	Partition coefficient
Nitric Acid	-2.3
Sodium Nitrate	-3.8
Hydrofluoric Acid	-1.4
Boric Acid	-0.757

12.4. Mobility in soil

Mobility in soil No information available.

12.5. Results of PBT and vPvB assessment

PBT and vPvB assessment No information available.

12.6. Other adverse effects

Other adverse effects No information available.

Section 13: DISPOSAL CONSIDERATIONS

13.1. Waste treatment methods

Waste from residues/unused products Dispose of in accordance with local regulations. Dispose of waste in accordance with environmental legislation.

Contaminated packaging Do not reuse empty containers.

Section 14: TRANSPORT INFORMATION

IMDG

14.1 UN/ID no. UN3264
14.2 Proper shipping name Corrosive liquid, acidic, inorganic, n.o.s.
14.3 Hazard Class 8
14.4 Packing Group III
14.5 Marine pollutant No information available
14.6 Special Provisions No information available
14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code No information available

RID

14.1 UN/ID no. UN3264
14.2 Proper shipping name Corrosive liquid, acidic, inorganic, n.o.s.
14.3 Hazard Class 8
14.4 Packing Group III
14.5 Environmental hazard No information available
14.6 Special Provisions No information available

ADR

14.1 UN/ID no. UN3264
14.2 Proper shipping name Corrosive liquid, acidic, inorganic, n.o.s.
14.3 Hazard Class 8
14.4 Packing Group III
14.5 Environmental hazard No information available
14.6 Special Provisions No information available

IATA

14.1 UN/ID no. UN3264
14.2 Proper shipping name Corrosive liquid, acidic, inorganic, n.o.s.
14.3 Hazard Class 8
14.4 Packing Group III
14.5 Environmental hazard No information available
14.6 Special Provisions No information available

Section 15: REGULATORY INFORMATION

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

France

Occupational Illnesses (R-463-3, France)

Chemical name	French RG number	Title
Hydrofluoric Acid 7664-39-3	RG 32	-
Selenium Metal 7782-49-2	RG 75	-
Nickel Nitrate 13138-45-9	RG 37, RG 37bis	-
Lead Nitrate 10099-74-8	RG 1	-
Beryllium Nitrate 13597-99-4	RG 33	-
Arsenic Metal 7440-38-2	RG 20, RG 20bis	-

European Union

Take note of Directive 98/24/EC on the protection of the health and safety of workers from the risks related to chemical agents at work

Authorizations and/or restrictions on use:

This product contains one or more substance(s) subject to restriction (Regulation (EC) No. 1907/2006 (REACH), Annex XVII)

Chemical name	Restricted substance per REACH Annex XVII	Substance subject to authorization per REACH Annex XIV
Boric Acid - 10043-35-3	30.	
Nickel Nitrate - 13138-45-9	28. 30.	

Persistent Organic Pollutants

Not applicable

Ozone-depleting substances (ODS) regulation (EC) 1005/2009 Not applicable

International Inventories

TSCA	Does not comply
DSL/NDSL	Does not comply
EINECS/ELINCS	Does not comply
ENCS	Does not comply
IECSC	Does not comply
KECL	Does not comply
PICCS	Does not comply
AICS	Does not comply

Legend:

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory

DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List

EINECS/ELINCS - European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances

ENCS - Japan Existing and New Chemical Substances

IECSC - China Inventory of Existing Chemical Substances

KECL - Korean Existing and Evaluated Chemical Substances

LK1-CB102009-1L - (4 x 250 mL) USP 1 mg/L in 5%
HNO₃ + Tr HF 500 Ca 100 Al, B, K, Mg, Na, P 10 Ag,
As, Ba, Be, Bi, Cd, Co, Cr, Cu, Fe, Ga, Li, Mn Mo,
Ni, Pb, Rb, Se, Sr, Ti, V, Zn, Cs, Ge, Te, U

Revision Date 11-Nov-2016

PICCS - Philippines Inventory of Chemicals and Chemical Substances
AICS - Australian Inventory of Chemical Substances

15.2. Chemical safety assessment

Chemical Safety Report

A Chemical Safety Assessment has not been carried out for this substance

Section 16: OTHER INFORMATION

Key or legend to abbreviations and acronyms used in the safety data sheet

Full text of H-Statements referred to under section 3

H302 - Harmful if swallowed
H332 - Harmful if inhaled
H360FD - May damage fertility. May damage the unborn child
H360Df - May damage the unborn child. Suspected of damaging fertility
H373 - May cause damage to organs through prolonged or repeated exposure if inhaled
H400 - Very toxic to aquatic life
H410 - Very toxic to aquatic life with long lasting effects
H300 - Fatal if swallowed
H330 - Fatal if inhaled
H411 - Toxic to aquatic life with long lasting effects
H312 - Harmful in contact with skin
H315 - Causes skin irritation
H318 - Causes serious eye damage
H334 - May cause allergy or asthma symptoms or breathing difficulties if inhaled
H317 - May cause an allergic skin reaction
H341 - Suspected of causing genetic defects if swallowed
H350i - May cause cancer by inhalation
H360D - May damage the unborn child
H372 - Causes damage to organs through prolonged or repeated exposure if inhaled
H272 - May intensify fire; oxidizer
H301 - Toxic if swallowed
H319 - Causes serious eye irritation
H335 - May cause respiratory irritation
H331 - Toxic if inhaled
H310 - Fatal in contact with skin
H314 - Causes severe skin burns and eye damage
H413 - May cause long lasting harmful effects to aquatic life
EUH071 - Corrosive to the respiratory tract

Legend

SVHC: Substances of Very High Concern for Authorization:

Legend Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

TWA	TWA (time-weighted average)	STEL	STEL (Short Term Exposure Limit)
Ceiling	Maximum limit value	*	Skin designation

Prepared By LabKings B.V.

Issuing Date 11-Nov-2016

Revision Date 11-Nov-2016

Reason for revision SDS sections updated

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

LK1-CB102009-1L - (4 x 250 mL) USP 1 mg/L in 5%
HNO₃ + Tr HF 500 Ca 100 Al, B, K, Mg, Na, P 10 Ag,
As, Ba, Be, Bi, Cd, Co, Cr, Cu, Fe, Ga, Li, Mn Mo,
Ni, Pb, Rb, Se, Sr, Tl, V, Zn, Cs, Ge, Te, U

Revision Date 11-Nov-2016

Disclaimer

The information provided in 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 guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered 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 materials or in any process, unless specified in the text.

End of Safety Data Sheet