

Safety data sheet

according to Regulation (EC) No. 1907/2006 (REACH)



Multi Element ICP - Standard Solution XIII ROTI®Star 15 elements in 2 % HNO₃ - mg/l

article number: **2644**
Version: **2.0 en**
Replaces version of: 2016-10-10
Version: (1)

date of compilation: 2016-10-10
Revision: 2022-02-23

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

1.1 Product identifier

Identification of the substance **Multi Element ICP - Standard Solution XIII
ROTI®Star 15 elements in 2 % HNO₃ - mg/l**

Article number 2644

Registration number (REACH) not relevant (mixture)

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

Relevant identified uses: Laboratory chemical
Laboratory and analytical use

Uses advised against: Do not use for products which come into contact
with foodstuffs. Do not use for private purposes
(household).

1.3 Details of the supplier of the safety data sheet

Carl Roth GmbH + Co KG
Schoemperlenstr. 3-5
D-76185 Karlsruhe
Germany

Telephone:+49 (0) 721 - 56 06 0
Telefax: +49 (0) 721 - 56 06 149
e-mail: sicherheit@carlroth.de
Website: www.carlroth.de

Competent person responsible for the safety data sheet: :Department Health, Safety and Environment

e-mail (competent person): **sicherheit@carlroth.de**

1.4 Emergency telephone number

| Name | Street | Postal code/city | Telephone | Website |
|---|-----------|----------------------|--------------|---------|
| National Poisons Information Service City Hospital | Dudley Rd | B187QH Birmingham | 844 892 0111 | |

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

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

| Section | Hazard class | Cat-egory | Hazard class and category | Hazard statement |
|---------|--|-----------|---------------------------|------------------|
| 2.16 | Substance or mixture corrosive to metals | 1 | Met. Corr. 1 | H290 |
| 3.2 | Skin corrosion/irritation | 2 | Skin Irrit. 2 | H315 |
| 3.3 | Serious eye damage/eye irritation | 2 | Eye Irrit. 2 | H319 |

Safety data sheet

according to Regulation (EC) No. 1907/2006 (REACH)



Multi Element ICP - Standard Solution XIII ROTI®Star 15 elements in 2 % HNO₃ - mg/l

article number: 2644

| Section | Hazard class | Cat-egory | Hazard class and category | Hazard statement |
|---------|--------------------|-----------|---------------------------|------------------|
| 3.4S | Skin sensitisation | 1 | Skin Sens. 1 | H317 |

For full text of abbreviations: see SECTION 16

2.2 Label elements

Labelling according to Regulation (EC) No 1272/2008 (CLP)

Signal word

Warning

Pictograms

GHS05, GHS07



Hazard statements

H290 May be corrosive to metals
H315 Causes skin irritation
H317 May cause an allergic skin reaction
H319 Causes serious eye irritation

Precautionary statements

Precautionary statements - prevention

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

Hazardous ingredients for labelling: Nickel dinitrate, Ammonium dichromate

Labelling of packages where the contents do not exceed 125 ml

Signal word: **Warning**

Symbol(s)



H317 May cause an allergic skin reaction.
P280 Wear protective gloves/protective clothing/eye protection/face protection.
contains: Nickel dinitrate, Ammonium dichromate

2.3 Other hazards

Results of PBT and vPvB assessment

This mixture does not contain any substances that are assessed to be a PBT or a vPvB.

Safety data sheet

according to Regulation (EC) No. 1907/2006 (REACH)



Multi Element ICP - Standard Solution XIII ROTI®Star 15 elements in 2 % HNO₃ - mg/l

article number: 2644

SECTION 3: Composition/information on ingredients

3.1 Substances

not relevant (mixture)

3.2 Mixtures

Description of the mixture

| Name of substance | Identifier | Wt% | Classification acc. to GHS | Pictograms | Notes |
|-----------------------------|--|--------------|--|------------|---|
| Nitric acid ...% [C ≤ 70 %] | CAS No 7697-37-2 EC No 231-714-2 Index No 007-030-00-3 | 2 | Ox. Liq. 3 / H272 Met. Corr. 1 / H290 Acute Tox. 3 / H331 Skin Corr. 1A / H314 Eye Dam. 1 / H318 EUH071 | | B(a) GHS-HC IOELV |
| nickel dinitrate | CAS No 13138-45-9 EC No 236-068-5 Index No 028-012-00-1 | 0,01 – < 0,1 | Ox. Sol. 2 / H272 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 | | GHS-HC |
| ammonium dichromate | CAS No 7789-09-5 EC No 232-143-1 Index No 024-003-00-1 | 0,048 | Ox. Sol. 2 / H272 Acute Tox. 3 / H301 Acute Tox. 4 / H312 Acute Tox. 2 / H330 Skin Corr. 1B / H314 Resp. Sens. 1 / H334 Skin Sens. 1 / H317 Muta. 1B / H340 Carc. 1B / H350 Repr. 1B / H360FD STOT SE 3 / H335 STOT RE 1 / H372 Aquatic Acute 1 / H400 Aquatic Chronic 1 / H410 | | 3 G(b) GHS-HC IARC: 1 IOELV RoC "Known" |
| Lead(II) nitrate | CAS No 10099-74-8 EC No 233-245-9 Index No 082-001-00-6 | 0,016 | Acute Tox. 4 / H302 Acute Tox. 4 / H332 Repr. 1A / H360Df STOT RE 1 / H372 Aquatic Acute 1 / H400 Aquatic Chronic 1 / H410 | | 1(a) A(a) GHS-HC IARC: 2A IOELV |
| cobalt dinitrate | CAS No 10141-05-6 EC No 233-402-1 Index No 027-009-00-2 | < 0,01 | Resp. Sens. 1 / H334 Skin Sens. 1 / H317 Muta. 2 / H341 Carc. 1B / H350i Repr. 1B / H360F Aquatic Acute 1 / H400 Aquatic Chronic 1 / H410 | | 1(a) GHS-HC |

Notes

1(a): The concentration stated is the percentage by weight of the metallic element calculated with reference to the total weight of the mixture

Safety data sheet

according to Regulation (EC) No. 1907/2006 (REACH)



Multi Element ICP - Standard Solution XIII ROTI®Star 15 elements in 2 % HNO₃ - mg/l

article number: 2644

Notes

- 3: The concentration stated is the percentage by weight of chromate ions dissolved in water calculated with reference to the total weight of the mixture.
- A(a): The name of substance is a general description. It is required that the correct name is stated on the label
- B(a): The classification refers to an aqueous solution
- G(b): Shall not be classified as explosive
- GHS-HC: Harmonised classification (the classification of the substance corresponds to the entry in the list according to 1272/2008/EC, Annex VI)
- IARC: 1: IARC group 1: carcinogenic to humans (International Agency for Research on Cancer)
- IARC: IARC group 2A: probably carcinogenic to humans (International Agency for Research on Cancer)
- 2A:
- IOELV: Substance with a community indicative occupational exposure limit value
- RoC NTP-RoC: Known To Be A Human Carcinogen
- "Known"
- :

| Name of substance | Identifier | Specific Conc. Limits | M-Factors | ATE | Exposure route |
|-----------------------------|--|---|---|--|---|
| Nitric acid ...% [C ≤ 70 %] | CAS No 7697-37-2 EC No 231-714-2 Index No 007-030-00-3 | Ox. Liq. 3; H272: C ≥ 65 % Skin Corr. 1A; H314: C ≥ 20 % Skin Corr. 1B; H314: 5 % ≤ C < 20 % | - | 2,65 mg/l/4h | inhalation: vapour |
| ammonium dichromate | CAS No 7789-09-5 EC No 232-143-1 Index No 024-003-00-1 | Resp. Sens. 1; H334: C ≥ 0,2 % Skin Sens. 1; H317: C ≥ 0,2 % STOT SE 3; H335: C ≥ 5 % | - | 100 mg/kg 1.100 mg/kg 0,05 mg/l/4h | oral dermal inhalation: dust/ mist |
| nickel dinitrate | CAS No 13138-45-9 EC No 236-068-5 Index No 028-012-00-1 | Skin Irrit. 2; H315: C ≥ 20 % Skin Sens. 1; H317: C ≥ 0,01 % STOT RE 1; H372: C ≥ 1 % STOT RE 2; H373: 0,1 % ≤ C < 1 % | - | 1.620 mg/kg 1,5 mg/l/4h | oral inhalation: dust/ mist |
| cobalt dinitrate | CAS No 10141-05-6 EC No 233-402-1 Index No 027-009-00-2 | Carc. 1B; H350i: C ≥ 0,01 % | M-factor (acute) = 10.0 M-factor (chronic) = 10.0 | - | |
| Lead(II) nitrate | CAS No 10099-74-8 EC No 233-245-9 Index No 082-001-00-6 | Repr. 1A; H360D: C ≥ 0,3 % Repr. 2; H361f: C ≥ 2,5 % STOT RE 2; H373: C ≥ 0,5 % | M-factor (acute) = 10.0 | 500 mg/kg 1,5 mg/l/4h | oral inhalation: dust/ mist |

For full text of abbreviations: see SECTION 16

Safety data sheet

according to Regulation (EC) No. 1907/2006 (REACH)



Multi Element ICP - Standard Solution XIII ROTI®Star 15 elements in 2 % HNO₃ - mg/l

article number: 2644

SECTION 4: First aid measures

4.1 Description of first aid measures



General notes

Take off contaminated clothing.

Following inhalation

Provide fresh air. In all cases of doubt, or when symptoms persist, seek medical advice.

Following skin contact

Rinse skin with water/shower. After contact with skin, wash immediately with plenty of water. In case of skin reactions, consult a physician. In case of skin irritation, consult a physician.

Following eye contact

Irrigate copiously with clean, fresh water for at least 10 minutes, holding the eyelids apart. In case of eye irritation consult an ophthalmologist.

Following ingestion

Rinse mouth. Call a doctor if you feel unwell.

4.2 Most important symptoms and effects, both acute and delayed

Irritation, Allergic reactions

4.3 Indication of any immediate medical attention and special treatment needed

none

SECTION 5: Firefighting measures

5.1 Extinguishing media



Suitable extinguishing media

co-ordinate firefighting measures to the fire surroundings
water spray, alcohol resistant foam, dry extinguishing powder, BC-powder, carbon dioxide (CO₂)

Unsuitable extinguishing media

water jet

5.2 Special hazards arising from the substance or mixture

Non-combustible.

Hazardous combustion products

In case of fire may be liberated: Nitrogen oxides (NO_x)

5.3 Advice for firefighters

In case of fire and/or explosion do not breathe fumes. Fight fire with normal precautions from a reasonable distance. Wear self-contained breathing apparatus.

Safety data sheet

according to Regulation (EC) No. 1907/2006 (REACH)



**Multi Element ICP - Standard Solution XIII ROTI®Star 15 elements in 2 %
HNO₃ - mg/l**

article number: 2644

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures



For non-emergency personnel

Avoid contact with skin, eyes and clothes. Do not breathe vapour/spray.

6.2 Environmental precautions

Keep away from drains, surface and ground water. The product is an acid. Before discharge into sewage plants the product normally needs to be neutralised.

6.3 Methods and material for containment and cleaning up

Advice on how to contain a spill

Covering of drains.

Advice on how to clean up a spill

Absorb with liquid-binding material (sand, diatomaceous earth, acid- or universal binding agents).

Other information relating to spills and releases

Place in appropriate containers for disposal. Ventilate affected area.

6.4 Reference to other sections

Hazardous combustion products: see section 5. Personal protective equipment: see section 8. Incompatible materials: see section 10. Disposal considerations: see section 13.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

No special measures are necessary.

Advice on general occupational hygiene

Wash hands before breaks and after work. Keep away from food, drink and animal feedingstuffs.

7.2 Conditions for safe storage, including any incompatibilities

Keep container tightly closed.

Incompatible substances or mixtures

Observe hints for combined storage.

Consideration of other advice:

Specific designs for storage rooms or vessels

Recommended storage temperature: 15 – 25 °C

7.3 Specific end use(s)

No information available.

Safety data sheet

according to Regulation (EC) No. 1907/2006 (REACH)



Multi Element ICP - Standard Solution XIII ROTI®Star 15 elements in 2 % HNO₃ - mg/l

article number: 2644

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

National limit values

Occupational exposure limit values (Workplace Exposure Limits)

| Country | Name of agent | CAS No | Identifier | TWA [ppm] | TWA [mg/m ³] | STEL [ppm] | STEL [mg/m ³] | Ceiling-C [ppm] | Ceiling-C [mg/m ³] | Notation | Source |
|---------|--------------------------------|------------|------------|-----------|--------------------------|------------|---------------------------|-----------------|--------------------------------|----------------|--------------|
| EU | lead compounds | | IOELV | | 0,15 | | | | | | 98/24/EC |
| EU | beryllium, inorganic compounds | 1304-56-9 | IOELV | | 0,0002 | | | | | i, Be-limit | 2019/983/EU |
| EU | nitric acid | 7697-37-2 | IOELV | | | 1 | 2,6 | | | | 2006/15/EC |
| EU | arsenic acid | 7778-39-4 | IOELV | | 0,01 | | | | | i, As-limit | 2019/983/EU |
| EU | chromium(VI) compounds | 7789-09-5 | IOELV | | 0,005 | | | | | Cr, CrVI-limit | 2017/2398/EU |
| GB | lead compounds | | OEL-NIR | | 0,15 | | | | | Pb | CLWR-NIR |
| GB | lead compounds | | OEL | | 0,15 | | | | | Pb | CLWR |
| GB | cobalt compounds | | WEL | | 0,1 | | | | | Co | EH40/2005 |
| GB | beryllium compounds | 1304-56-9 | WEL | | 0,002 | | | | | Be | EH40/2005 |
| GB | nickel, soluble compounds | 13138-45-9 | WEL | | 0,1 | | | | | Ni | EH40/2005 |
| GB | nitric acid | 7697-37-2 | WEL | | | 1 | 2,6 | | | | EH40/2005 |
| GB | arsenic compounds | 7778-39-4 | WEL | | 0,1 | | | | | As | EH40/2005 |
| GB | chromium(VI) compounds | 7789-09-5 | WEL | | 0,01 | | | | | Cr | EH40/2005 |
| GB | chromium(VI) compounds | 7789-09-5 | WEL | | 0,025 | | | | | Cr, CrVI-pg | EH40/2005 |

Notation

| | |
|------------|--|
| As | Calculated as As (arsenic) |
| As-limit | For the copper smelting sector, the limit value shall apply from 11 July 2023 |
| Be | Calculated as Be (beryllium) |
| Be-limit | Limit value 0,0006 mg/m ³ until 11 July 2026 |
| Ceiling-C | Ceiling value is a limit value above which exposure should not occur |
| Co | Calculated as Co (cobalt) |
| Cr | Calculated as Cr (chromium) |
| CrVI-limit | Limit value 0,010 mg/m ³ until 17 January 2025 Limit value: 0,025 mg/m ³ for welding or plasma cutting processes or similar work processes that generate fume until 17 January 2025 |
| CrVI-pg | Chromium (VI) compounds generated as a result of a work process, such as fumes from welding (process generated) |
| i | Inhalable fraction |
| Ni | Calculated as Ni (nickel) |
| Pb | Calculated as Pb (lead) |

Safety data sheet

according to Regulation (EC) No. 1907/2006 (REACH)



Multi Element ICP - Standard Solution XIII ROTI®Star 15 elements in 2 % HNO₃ - mg/l

article number: 2644

Notation

| | |
|------|--|
| STEL | Short-term exposure limit: a limit value above which exposure should not occur and which is related to a 15-minute period (unless otherwise specified) |
| TWA | Time-weighted average (long-term exposure limit): measured or calculated in relation to a reference period of 8 hours time-weighted average (unless otherwise specified) |

Biological limit values

| Country | Name of agent | CAS No | Parameter | Notation | Identifier | Value | Material | Source |
|---------|------------------------|--------|-----------|---|------------|-------------|-------------|-----------|
| GB | chromium(VI) compounds | | chromium | crea | BMGV | 10 µmol/mol | urine | EH40/2005 |
| GB | lead compounds | | lead | Pb-bio-2, Pb-med-2, wmn<45y | AL_NIR | 250 µg/l | whole blood | CLWR-NIR |
| GB | lead compounds | | lead | Pb-bio-2, Pb-med-2, wmn<45y | AL | 250 µg/l | whole blood | CLWR |
| GB | lead compounds | | lead | Pb-bio-2, Pb-med-3, wmn>45y, men | AL_NIR | 400 µg/l | whole blood | CLWR-NIR |
| GB | lead compounds | | lead | Pb-bio-2, Pb-med-3, wmn>45y, men | AL | 400 µg/l | whole blood | CLWR |
| GB | lead compounds | | lead | Pb-bio-2, Pb-med-4, young | AL_NIR | 500 µg/l | whole blood | CLWR-NIR |
| GB | lead compounds | | lead | Pb-bio-2, Pb-med-4, young | AL | 500 µg/l | whole blood | CLWR |

Notation

| | |
|----------|---|
| crea | Creatinine |
| Pb-bio-2 | Biological monitoring: (a) in respect of an employee other than a young person or a woman of reproductive capacity, at least every 6 months, but where the results of the measurements for individuals or for groups of workers have shown on the previous two consecutive occasions on which monitoring was carried out a lead in air exposure greater than 0.075 mg/m ³ but less than 0.100 mg/m ³ and where the blood-lead concentration of any individual employee is less than 30 µg/dl, the frequency of monitoring may be reduced to once a year; or (b) in respect of any young person or a woman of reproductive capacity, at such intervals as the relevant doctor shall specify, being not greater than 3 months |
| Pb-med-2 | Medical surveillance: in respect of a woman of reproductive capacity, 20 g/dl (blood-lead concentration) or 20 g Pb/g creatinine (urinary lead concentration) |

Safety data sheet

according to Regulation (EC) No. 1907/2006 (REACH)



Multi Element ICP - Standard Solution XIII ROTI®Star 15 elements in 2 % HNO₃ - mg/l

article number: 2644

Notation

| | |
|-----------------|---|
| Pb-med-3 | Medical surveillance: in respect of any other employee, 35 µg/dl (blood-lead concentration) or 40 µg Pb/g creatinine (urinary lead concentration) suspension level: in respect of a woman of reproductive capacity, 60 µg/dl (blood-lead concentration) or 110 µg Pb/g creatinine (urinary lead concentration) |
| Pb-med-4 | Medical surveillance: in respect of any other employee, 35 µg/dl (blood-lead concentration) or 40 µg Pb/g creatinine (urinary lead concentration) suspension level: in respect of a young person, 50 µg/dl (blood-lead concentration) or 110 µg Pb/g creatinine (urinary lead concentration) |
| wmn<45y | Women of reproductive capacity (women < 45 years) |
| wmn>45y, men | Women of non-reproductive capacity, men (women > 45 years) |
| young | Adolescents (young person < 18 years) |

8.2 Exposure controls

Individual protection measures (personal protective equipment)

Eye/face protection



Use safety goggle with side protection.

Skin protection



• hand protection

Wear suitable gloves. Chemical protection gloves are suitable, which are tested according to EN 374. For special purposes, it is recommended to check the resistance to chemicals of the protective gloves mentioned above together with the supplier of these gloves. The times are approximate values from measurements at 22 ° C and permanent contact. Increased temperatures due to heated substances, body heat etc. and a reduction of the effective layer thickness by stretching can lead to a considerable reduction of the breakthrough time. If in doubt, contact manufacturer. At an approx. 1.5 times larger / smaller layer thickness, the respective breakthrough time is doubled / halved. The data apply only to the pure substance. When transferred to substance mixtures, they may only be considered as a guide.

• type of material

NBR (Nitrile rubber)

• material thickness

>0,11 mm

• breakthrough times of the glove material

>480 minutes (permeation: level 6)

• other protection measures

Take recovery periods for skin regeneration. Preventive skin protection (barrier creams/ointments) is recommended.

Respiratory protection



Safety data sheet

according to Regulation (EC) No. 1907/2006 (REACH)



Multi Element ICP - Standard Solution XIII ROTI®Star 15 elements in 2 % HNO₃ - mg/l

article number: 2644

Respiratory protection necessary at: Aerosol or mist formation. Type: Hg (against mercury vapour, colour code: Red).

Environmental exposure controls

Keep away from drains, surface and ground water.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

| | |
|--|---|
| Physical state | liquid |
| Colour | colourless |
| Odour | characteristic |
| Melting point/freezing point | ~0 °C at 1.013 mPa |
| Boiling point or initial boiling point and boiling range | ~100 °C at 1.013 mPa |
| Flammability | non-combustible |
| Lower and upper explosion limit | not determined |
| Flash point | not determined |
| Auto-ignition temperature | not determined |
| Decomposition temperature | not relevant |
| pH (value) | <2 |
| Kinematic viscosity | not determined |
| <u>Solubility(ies)</u> | |
| Water solubility | miscible in any proportion |
| <u>Partition coefficient</u> | |
| Partition coefficient n-octanol/water (log value): | not relevant (inorganic) |
| Vapour pressure | not determined |
| <u>Density and/or relative density</u> | |
| Density | ~1 g/cm ³ at 20 °C |
| Relative vapour density | information on this property is not available |
| Particle characteristics | not relevant (liquid) |
| <u>Other safety parameters</u> | |
| Oxidising properties | none |

Safety data sheet

according to Regulation (EC) No. 1907/2006 (REACH)



Multi Element ICP - Standard Solution XIII ROTI®Star 15 elements in 2 % HNO₃ - mg/l

article number: 2644

9.2 Other information

Information with regard to physical hazard classes:

Corrosive to metals category 1: corrosive to metals

Other safety characteristics:

Miscibility completely miscible with water

SECTION 10: Stability and reactivity

10.1 Reactivity

Substance or mixture corrosive to metals.

10.2 Chemical stability

The material is stable under normal ambient and anticipated storage and handling conditions of temperature and pressure.

10.3 Possibility of hazardous reactions

Violent reaction with: Ammonia (NH₃), Bases, Metals, Reducing agents, Strong alkali, Organic solvents

10.4 Conditions to avoid

Keep away from heat.

10.5 Incompatible materials

different metals (due to the release of hydrogen in an acid/alkaline medium)

10.6 Hazardous decomposition products

Hazardous combustion products: see section 5.

SECTION 11: Toxicological information

11.1 Information on hazard classes as defined in Regulation (EC) No 1272/2008

Test data are not available for the complete mixture.

Classification procedure

The method for classification of the mixture is based on ingredients of the mixture (additivity formula).

Classification according to GHS (1272/2008/EC, CLP)

Acute toxicity

Shall not be classified as acutely toxic.

| Acute toxicity estimate (ATE) of components of the mixture | | | |
|--|-----------|-----------------------|--------------------------|
| Name of substance | CAS No | Exposure route | ATE |
| Nitric acid ...% [C ≤ 70 %] | 7697-37-2 | inhalation: vapour | 2,65 mg _i /4h |
| ammonium dichromate | 7789-09-5 | oral | 100 mg _{kg} |
| ammonium dichromate | 7789-09-5 | dermal | 1.100 mg _{kg} |
| ammonium dichromate | 7789-09-5 | inhalation: dust/mist | 0,05 mg _i /4h |

Safety data sheet

according to Regulation (EC) No. 1907/2006 (REACH)



Multi Element ICP - Standard Solution XIII ROTI®Star 15 elements in 2 % HNO₃ - mg/l

article number: 2644

| Acute toxicity estimate (ATE) of components of the mixture | | | |
|--|------------|-----------------------|-------------|
| Name of substance | CAS No | Exposure route | ATE |
| nickel dinitrate | 13138-45-9 | oral | 1.620 mg/kg |
| nickel dinitrate | 13138-45-9 | inhalation: dust/mist | 1,5 mg/l/4h |
| Lead(II) nitrate | 10099-74-8 | oral | 500 mg/kg |
| Lead(II) nitrate | 10099-74-8 | inhalation: dust/mist | 1,5 mg/l/4h |

| Acute toxicity of components of the mixture | | | | | |
|---|------------|--------------------|----------|---------------|---------|
| Name of substance | CAS No | Exposure route | Endpoint | Value | Species |
| Nitric acid ...% [C ≤ 70 %] | 7697-37-2 | inhalation: vapour | LC50 | >2,65 mg/l/4h | rat |
| nickel dinitrate | 13138-45-9 | oral | LD50 | 1.620 mg/kg | rat |
| Lead(II) nitrate | 10099-74-8 | oral | LD50 | >2.000 mg/kg | rat |
| Lead(II) nitrate | 10099-74-8 | dermal | LD50 | >2.000 mg/kg | rat |

Skin corrosion/irritation

Causes skin irritation.

Serious eye damage/eye irritation

Causes serious eye irritation.

Respiratory or skin sensitisation

May cause an allergic skin reaction.

Germ cell mutagenicity

Shall not be classified as germ cell mutagenic.

Carcinogenicity

Shall not be classified as carcinogenic.

Reproductive toxicity

Shall not be classified as a reproductive toxicant.

Specific target organ toxicity - single exposure

Shall not be classified as a specific target organ toxicant (single exposure).

Specific target organ toxicity - repeated exposure

Shall not be classified as a specific target organ toxicant (repeated exposure).

Aspiration hazard

Shall not be classified as presenting an aspiration hazard.

Symptoms related to the physical, chemical and toxicological characteristics

• If swallowed

Data are not available.

Safety data sheet

according to Regulation (EC) No. 1907/2006 (REACH)



Multi Element ICP - Standard Solution XIII ROTI®Star 15 elements in 2 % HNO₃ - mg/l

article number: 2644

- **If in eyes**

Causes serious eye irritation

- **If inhaled**

Data are not available.

- **If on skin**

causes skin irritation, May produce an allergic reaction, pruritis, localised redness

- **Other information**

This information is based upon the present state of our knowledge.

11.2 Endocrine disrupting properties

None of the ingredients are listed.

11.3 Information on other hazards

There is no additional information.

SECTION 12: Ecological information

12.1 Toxicity

Shall not be classified as hazardous to the aquatic environment.

| Aquatic toxicity (acute) of components of the mixture | | | | | |
|---|------------|----------|-----------|---------|---------------|
| Name of substance | CAS No | Endpoint | Value | Species | Exposure time |
| Lead(II) nitrate | 10099-74-8 | LC50 | 107 µg/l | fish | 96 h |
| Lead(II) nitrate | 10099-74-8 | ErC50 | 35,9 µg/l | algae | 48 h |

Biodegradation

The methods for determining the biological degradability are not applicable to inorganic substances.

12.2 Process of degradability

Data are not available.

12.3 Bioaccumulative potential

Data are not available.

12.4 Mobility in soil

Data are not available.

12.5 Results of PBT and vPvB assessment

Data are not available.

12.6 Endocrine disrupting properties

None of the ingredients are listed.

12.7 Other adverse effects

Data are not available.

Safety data sheet

according to Regulation (EC) No. 1907/2006 (REACH)



Multi Element ICP - Standard Solution XIII ROTI®Star 15 elements in 2 % HNO₃ - mg/l

article number: 2644

SECTION 13: Disposal considerations

13.1 Waste treatment methods



This material and its container must be disposed of as hazardous waste. Dispose of contents/container in accordance with local/regional/national/international regulations.

Sewage disposal-relevant information

Do not empty into drains.

Waste treatment of containers/packagings

It is a dangerous waste; only packagings which are approved (e.g. acc. to ADR) may be used.

13.2 Relevant provisions relating to waste

The allocation of waste identity numbers/waste descriptions must be carried out according to the EEC, specific to the industry and process. Waste catalogue ordinance (Germany).

13.3 Remarks

Waste shall be separated into the categories that can be handled separately by the local or national waste management facilities. Please consider the relevant national or regional provisions.

SECTION 14: Transport information

14.1 UN number or ID number

| | |
|-----------|---------|
| ADRRID | UN 3264 |
| IMDG-Code | UN 3264 |
| ICAO-TI | UN 3264 |

14.2 UN proper shipping name

| | |
|--|--|
| ADRRID | CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. |
| IMDG-Code | CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. |
| ICAO-TI | Corrosive liquid, acidic, inorganic, n.o.s. |
| Technical name (hazardous ingredients) | Nitric acid ...% [C ≤ 70 %], Aluminium nitrate |

14.3 Transport hazard class(es)

| | |
|-----------|---|
| ADRRID | 8 |
| IMDG-Code | 8 |
| ICAO-TI | 8 |

14.4 Packing group

| | |
|-----------|-----|
| ADRRID | III |
| IMDG-Code | III |
| ICAO-TI | III |

14.5 Environmental hazards

non-environmentally hazardous acc. to the dangerous goods regulations

Safety data sheet

according to Regulation (EC) No. 1907/2006 (REACH)



Multi Element ICP - Standard Solution XIII ROTI®Star 15 elements in 2 % HNO₃ - mg/l

article number: 2644

14.6 Special precautions for user

Provisions for dangerous goods (ADR) should be complied within the premises.

14.7 Maritime transport in bulk according to IMO instruments

The cargo is not intended to be carried in bulk.

14.8 Information for each of the UN Model Regulations

Transport of dangerous goods by road, rail and inland waterway (ADR/RID/ADN) - Additional information

Proper shipping name CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S.

Particulars in the transport document UN3264, CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S., (contains: Nitric acid ...% [C ≤ 70 %], Aluminium nitrate), 8, III, (E)

Classification code C1

Danger label(s) 8



Special provisions (SP) 274

Excepted quantities (EQ) E1

Limited quantities (LQ) 5 L

Transport category (TC) 3

Tunnel restriction code (TRC) E

Hazard identification No 80

Emergency Action Code 2X

Regulations concerning the International Carriage of Dangerous Goods by Rail (RID) Additional information

Classification code 8

Danger label(s) 8



Special provisions (SP) 274

Excepted quantities (EQ) E1

Limited quantities (LQ) 5 L

Transport category (TC) 3

Hazard identification No 80

Safety data sheet


according to Regulation (EC) No. 1907/2006 (REACH)




Multi Element ICP - Standard Solution XIII ROTI®Star 15 elements in 2 % HNO₃ - mg/l

article number: 2644

International Maritime Dangerous Goods Code (IMDG) - Additional information

| | |
|---|---|
| Proper shipping name | CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. |
| Particulars in the shipper's declaration | UN3264, CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S., (contains: Nitric acid ...% [C ≤ 70 %], Aluminium nitrate), 8, III |
| Marine pollutant | - |
| Danger label(s) | 8 |
|  | |
| Special provisions (SP) | 223, 274 |
| Excepted quantities (EQ) | E1 |
| Limited quantities (LQ) | 5 L |
| EmS | F-A, S-B |
| Stowage category | A |
| Segregation group | 1 - Acids |

International Civil Aviation Organization (ICAO-IATA/DGR) - Additional information

| | |
|---|---|
| Proper shipping name | Corrosive liquid, acidic, inorganic, n.o.s. |
| Particulars in the shipper's declaration | UN3264, Corrosive liquid, acidic, inorganic, n.o.s., (contains: Nitric acid ...% [C ≤ 70 %], Aluminium nitrate), 8, III |
| Danger label(s) | 8 |
|  | |
| Special provisions (SP) | A3 |
| Excepted quantities (EQ) | E1 |
| Limited quantities (LQ) | 1 L |

SECTION 15: Regulatory information

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

Relevant provisions of the European Union (EU)

Restrictions according to REACH, Annex XVII

| Dangerous substances with restrictions (REACH, Annex XVII) | | | | |
|--|--|--------|-------------|----|
| Name of substance | Name acc. to inventory | CAS No | Restriction | No |
| Multi Element | this product meets the criteria for classification in accordance with Regulation No 1272/2008/EC | | R3 | 3 |
| Lead(II) nitrate | toxic for reproduction | | R28-30 | 30 |
| Lead(II) nitrate | substances in tattoo inks and permanent make-up | | R75 | 75 |

Safety data sheet

according to Regulation (EC) No. 1907/2006 (REACH)



Multi Element ICP - Standard Solution XIII ROTI®Star 15 elements in 2 % HNO₃ - mg/l

article number: 2644

| Dangerous substances with restrictions (REACH, Annex XVII) | | | | |
|--|---|--------|-------------|----|
| Name of substance | Name acc. to inventory | CAS No | Restriction | No |
| Lead(II) nitrate | lead compounds | | R63 | 63 |
| Lead(II) nitrate | lead compounds | | R72 | 72 |
| cobalt dinitrate | carcinogenic | | R28-30 | 28 |
| cobalt dinitrate | toxic for reproduction | | R28-30 | 30 |
| nickel dinitrate | carcinogenic | | R28-30 | 28 |
| nickel dinitrate | toxic for reproduction | | R28-30 | 30 |
| nickel dinitrate | nickel compounds | | R27 | 27 |
| Nitric acid ...% [C ≤ 70 %] | substances in tattoo inks and permanent make-up | | R75 | 75 |
| ammonium dichromate | chromium(VI) compounds | | R47 | 47 |
| ammonium dichromate | chromium(VI) compounds | | R72 | 72 |
| ammonium dichromate | inorganic ammonium salts | | R65 | 65 |
| ammonium dichromate | carcinogenic | | R28-30 | 28 |
| ammonium dichromate | germ cell mutagenic (mutagenic) | | R28-30 | 29 |
| ammonium dichromate | toxic for reproduction | | R28-30 | 30 |
| ammonium dichromate | substances in tattoo inks and permanent make-up | | R75 | 75 |

Legend

- R27
1. Shall not be used:
 - (a) in any post assemblies which are inserted into pierced ears and other pierced parts of the human body unless the rate of nickel release from such post assemblies is less than 0,2 µg/cm²/week (migration limit);
 - (b) in articles intended to come into direct and prolonged contact with the skin such as:
 - earrings,
 - necklaces, bracelets and chains, anklets, finger rings,
 - wrist-watch cases, watch straps and tighteners,
 - rivet buttons, tighteners, rivets, zippers and metal marks, when these are used in garments,if the rate of nickel release from the parts of these articles coming into direct and prolonged contact with the skin is greater than 0,5 µg/cm²/week.
 - (c) in articles referred to in point (b) where these have a non-nickel coating unless such coating is sufficient to ensure that the rate of nickel release from those parts of such articles coming into direct and prolonged contact with the skin will not exceed 0,5 µg/cm²/week for a period of at least two years of normal use of the article.
 2. Articles which are the subject of paragraph 1 shall not be placed on the market unless they conform to the requirements set out in that paragraph.
 3. The standards adopted by the European Committee for Standardisation (CEN) shall be used as the test methods for demonstrating the conformity of articles to paragraphs 1 and 2.

Safety data sheet

according to Regulation (EC) No. 1907/2006 (REACH)



Multi Element ICP - Standard Solution XIII ROTI®Star 15 elements in 2 % HNO₃ - mg/l

article number: 2644

Legend

- R28-30 1. Shall not be placed on the market, or used,
- as substances,
- as constituents of other substances, or,
- in mixtures,
for supply to the general public when the individual concentration in the substance or mixture is equal to or greater than:
- either the relevant specific concentration limit specified in Part 3 of Annex VI to Regulation (EC) No 1272/2008, or,
- the relevant concentration specified in Directive 1999/45/EC where no specific concentration limit is set out in Part 3 of Annex VI to Regulation (EC) No 1272/2008.
Without prejudice to the implementation of other Community provisions relating to the classification, packaging and labelling of substances and mixtures, suppliers shall ensure before the placing on the market that the packaging of such substances and mixtures is marked visibly, legibly and indelibly as follows:
'Restricted to professional users'.
2. By way of derogation, paragraph 1 shall not apply to:
(a) medicinal or veterinary products as defined by Directive 2001/82/EC and Directive 2001/83/EC;
(b) cosmetic products as defined by Directive 76/768/EEC;
(c) the following fuels and oil products:
- motor fuels which are covered by Directive 98/70/EC,
- mineral oil products intended for use as fuel in mobile or fixed combustion plants,
- fuels sold in closed systems (e.g. liquid gas bottles);
(d) artists' paints covered by Directive 1999/45/EC;
(e) the substances listed in Appendix 11, column 1, for the applications or uses listed in Appendix 11, column 2. Where a date is specified in column 2 of Appendix 11, the derogation shall apply until the said date;
(f) devices covered by Regulation (EU) 2017/745.
- R3 1. Shall not be used in:
- ornamental articles intended to produce light or colour effects by means of different phases, for example in ornamental lamps and ashtrays,
- tricks and jokes,
- games for one or more participants, or any article intended to be used as such, even with ornamental aspects,
2. Articles not complying with paragraph 1 shall not be placed on the market.
3. Shall not be placed on the market if they contain a colouring agent, unless required for fiscal reasons, or perfume, or both, if they:
— can be used as fuel in decorative oil lamps for supply to the general public, and
— present an aspiration hazard and are labelled with H304.
4. Decorative oil lamps for supply to the general public shall not be placed on the market unless they conform to the European Standard on Decorative oil lamps (EN 14059) adopted by the European Committee for Standardisation (CEN).
5. Without prejudice to the implementation of other Union provisions relating to the classification, labelling and packaging of substances and mixtures, suppliers shall ensure, before the placing on the market, that the following requirements are met:
(a) lamp oils, labelled with H304, intended for supply to the general public are visibly, legibly and indelibly marked as follows: "Keep lamps filled with this liquid out of the reach of children"; and, by 1 December 2010, "Just a sip of lamp oil – or even sucking the wick of lamps – may lead to life-threatening lung damage";
(b) grill lighter fluids, labelled with H304, intended for supply to the general public are legibly and indelibly marked by 1 December 2010 as follows: 'Just a sip of grill lighter fluid may lead to life threatening lung damage';
(c) lamps oils and grill lighters, labelled with H304, intended for supply to the general public are packaged in black opaque containers not exceeding 1 litre by 1 December 2010.;
- R47 1. Cement and cement-containing mixtures shall not be placed on the market, or used, if they contain, when hydrated, more than 2 mg/kg (0,0002 %) soluble chromium VI of the total dry weight of the cement.
2. If reducing agents are used, then without prejudice to the application of other Community provisions on the classification, packaging and labelling of substances and mixtures, suppliers shall ensure before the placing on the market that the packaging of cement or cement-containing mixtures is visibly, legibly and indelibly marked with information on the packing date, as well as on the storage conditions and the storage period appropriate to maintaining the activity of the reducing agent and to keeping the content of soluble chromium VI below the limit indicated in paragraph 1.
3. By way of derogation, paragraphs 1 and 2 shall not apply to the placing on the market for, and use in, controlled closed and totally automated processes in which cement and cement-containing mixtures are handled solely by machines and in which there is no possibility of contact with the skin.
4. The standard adopted by the European Committee for Standardization (CEN) for testing the water-soluble chromium (VI) content of cement and cement-containing mixtures shall be used as the test method for demonstrating conformity with paragraph 1.
5. Leather articles coming into contact with the skin shall not be placed on the market where they contain chromium VI in concentrations equal to or greater than 3 mg/kg (0,0003 % by weight) of the total dry weight of the leather.
6. Articles containing leather parts coming into contact with the skin shall not be placed on the market where any of those leather parts contains chromium VI in concentrations equal to or greater than 3 mg/kg (0,0003 % by weight) of the total dry weight of that leather part.
7. Paragraphs 5 and 6 shall not apply to the placing on the market of second-hand articles which were in end-use in the Union before 1 May 2015.

Safety data sheet

according to Regulation (EC) No. 1907/2006 (REACH)



Multi Element ICP - Standard Solution XIII ROTI®Star 15 elements in 2 % HNO₃ - mg/l

article number: 2644

Legend

- R63
1. Shall not be placed on the market or used in any individual part of jewellery articles if the concentration of lead (expressed as metal) in such a part is equal to or greater than 0,05 % by weight.
 2. For the purposes of paragraph 1:
 - (i) 'jewellery articles' shall include jewellery and imitation jewellery articles and hair accessories, including:
 - (a) bracelets, necklaces and rings;
 - (b) piercing jewellery;
 - (c) wrist watches and wrist-wear;
 - (d) brooches and cufflinks;
 - (ii) 'any individual part' shall include the materials from which the jewellery is made, as well as the individual components of the jewellery articles.
 3. Paragraph 1 shall also apply to individual parts when placed on the market or used for jewellery-making.
 4. By way of derogation, paragraph 1 shall not apply to:
 - (a) crystal glass as defined in Annex I (categories 1, 2, 3 and 4) to Council Directive 69/493/EEC (14);
 - (b) internal components of watch timepieces inaccessible to consumers;
 - (c) non-synthetic or reconstructed precious and semiprecious stones (CN code 7103, as established by Regulation (EEC) No 2658/87), unless they have been treated with lead or its compounds or mixtures containing these substances;
 - (d) enamels, defined as vitrifiable mixtures resulting from the fusion, vitrification or sintering of minerals melted at a temperature of at least 500 °C.
 5. By way of derogation, paragraph 1 shall not apply to jewellery articles placed on the market for the first time before 9 October 2013 and jewellery articles produced before 10 December 1961.
 6. By 9 October 2017, the Commission shall re-evaluate paragraphs 1 to 5 of this entry in the light of new scientific information, including the availability of alternatives and the migration of lead from the articles referred to in paragraph 1 and, if appropriate, modify this entry accordingly.
 7. Shall not be placed on the market or used in articles supplied to the general public, if the concentration of lead (expressed as metal) in those articles or accessible parts thereof is equal to or greater than 0,05 % by weight, and those articles or accessible parts thereof may, during normal or reasonably foreseeable conditions of use, be placed in the mouth by children.

That limit shall not apply where it can be demonstrated that the rate of lead release from such an article or any such accessible part of an article, whether coated or uncoated, does not exceed 0,05 µg/cm² per hour (equivalent to 0,05 µg/g/h), and, for coated articles, that the coating is sufficient to ensure that this release rate is not exceeded for a period of at least two years of normal or reasonably foreseeable conditions of use of the article.

For the purposes of this paragraph, it is considered that an article or accessible part of an article may be placed in the mouth by children if it is smaller than 5 cm in one dimension or has a detachable or protruding part of that size.
 8. By way of derogation, paragraph 7 shall not apply to:
 - (a) jewellery articles covered by paragraph 1;
 - (b) crystal glass as defined in Annex I (categories 1, 2, 3 and 4) to Directive 69/493/EEC;
 - (c) non-synthetic or reconstructed precious and semi-precious stones (CN code 7103 as established by Regulation (EEC) No 2658/87) unless they have been treated with lead or its compounds or mixtures containing these substances;
 - (d) enamels, defined as vitrifiable mixtures resulting from the fusion, vitrification or sintering of mineral melted at a temperature of at least 500 °C;
 - (e) keys and locks, including padlocks;
 - (f) musical instruments;
 - (g) articles and parts of articles comprising brass alloys, if the concentration of lead (expressed as metal) in the brass alloy does not exceed 0,5 % by weight;
 - (h) the tips of writing instruments;
 - (i) religious articles;
 - (j) portable zinc-carbon batteries and button cell batteries;
 - (k) articles within the scope of:
 - (i) Directive 94/62/EC;
 - (ii) Regulation (EC) No 1935/2004;
 - (iii) Directive 2009/48/EC of the European Parliament and of the Council (1);
 - (iv) Directive 2011/65/EU of the European Parliament and of the Council (2)
 9. By 1 July 2019, the Commission shall re-evaluate paragraphs 7 and 8(e), (f), (i) and (j) of this entry in the light of new scientific information, including the availability of alternatives and the migration of lead from the articles referred to in paragraph 7, including the requirement on coating integrity, and, if appropriate, modify this entry accordingly.
 10. By way of derogation paragraph 7 shall not apply to articles placed on the market for the first time before 1 June 2016.
 11. Doing either of the following acts after 15 February 2023 in or within 100 metres of wetlands is prohibited:
 - (a) discharging gunshot containing a concentration of lead (expressed as metal) equal to or greater than 1 % by weight;
 - (b) carrying any such gunshot where this occurs while out wetland shooting or as part of going wetland shooting.

For the purposes of the first subparagraph:

 - (a) "within 100 metres of wetlands" means within 100 metres outward from any outer boundary point of a wetland;
 - (b) "wetland shooting" means shooting in or within 100 metres of wetlands;
 - (c) if a person is found carrying gunshot in or within 100 metres of wetlands while out shooting or as part of going shooting, the shooting concerned shall be presumed to be wetland shooting unless that person can demonstrate that it was some other type of shooting.

The restriction laid down in the first subparagraph shall not apply in a Member State if that Member State notifies the Commission in accordance with paragraph 12 that it intends to make use of the option granted by that paragraph.
 12. If at least 20 % in total of the territory, excluding the territorial waters, of a Member State are wetlands, that Member State may, in place of the restriction laid down in the first subparagraph of paragraph 11, prohibit the following acts throughout the whole of its territory from 15 February 2024:
 - (a) the placing on the market of gunshot containing a concentration of lead (expressed as metal) equal to or greater than 1 % by weight;
 - (b) the discharging of any such gunshot;
 - (c) carrying any such gunshot while out shooting or as part of going shooting.

Any Member State intending to make use of the option granted by the first subparagraph shall notify the Commission of this intention by 15 August 2021. The Member State shall communicate the text of the national measures adopted by it to the Commission without delay and in any event by 15 August 2023. The Commission shall make publicly available without delay any such notices of intention and texts of national measures received by it.

Safety data sheet

according to Regulation (EC) No. 1907/2006 (REACH)



Multi Element ICP - Standard Solution XIII ROTI®Star 15 elements in 2 % HNO₃ - mg/l

article number: 2644

Legend

13. For the purposes of paragraphs 11 and 12:
(a) "wetlands" means areas of marsh, fen, peatland or water, whether natural or artificial, permanent or temporary, with water that is static or flowing, fresh, brackish or salt, including areas of marine water the depth of which at low tide does not exceed 6 metres;
(b) "gunshot" means pellets used or intended for use in a single charge or cartridge in a shotgun;
(c) "shotgun" means a smooth-bore gun, excluding airguns;
(d) "shooting" means any shooting with a shotgun;
(e) "carrying" means any carrying on the person or carrying or transporting by any other means;
(f) in determining whether a person found with gunshot is carrying gunshot "as part of going shooting":
(i) regard shall be had to all the circumstances of the case;
(ii) the person found with the gunshot need not necessarily be the same person as the person shooting.
14. Member States may maintain national provisions for protection of the environment or human health in force on 15 February 2021 and restricting lead in gunshot more severely than provided for in paragraph 11.
The Member State shall communicate the text of those national provisions to the Commission without delay. The Commission shall make publicly available without delay any such texts of national provisions received by it.
- R65 1. Shall not be placed on the market, or used, in cellulose insulation mixtures or cellulose insulation articles after 14 July 2018 unless the emission of ammonia from those mixtures or articles results in a concentration of less than 3 ppm by volume (2,12 mg/m³) under the test conditions specified in paragraph 4.
A supplier of a cellulose insulation mixture containing inorganic ammonium salts shall inform the recipient or consumer of the maximum permissible loading rate of the cellulose insulation mixture, expressed in thickness and density.
A downstream user of a cellulose insulation mixture containing inorganic ammonium salts shall ensure that the maximum permissible loading rate communicated by the supplier is not exceeded.
2. By way of derogation, paragraph 1 shall not apply to placing on the market of cellulose insulation mixtures intended to be used solely for the production of cellulose insulation articles, or to the use of those mixtures in the production of cellulose insulation articles.
3. In the case of a Member State that, on 14 July 2016, has national provisional measures in place that have been authorised by the Commission pursuant to Article 129(2)(a), the provisions of paragraphs 1 and 2 shall apply from that date.
4. Compliance with the emission limit specified in the first subparagraph of paragraph 1 shall be demonstrated in accordance with Technical Specification CEN/TS 16516, adapted as follows:
(a) the duration of the test shall be at least 14 days instead of 28 days;
(b) the ammonia gas emission shall be measured at least once per day throughout the test;
(c) the emission limit shall not be reached or exceeded in any measurement taken during the test;
(d) the relative humidity shall be 90 % instead of 50 %;
(e) an appropriate method to measure the ammonia gas emission shall be used;
(f) the loading rate, expressed in thickness and density, shall be recorded during the sampling of the cellulose insulation mixtures or articles to be tested.
- R72 1. Shall not be placed on the market after 1 November 2020 in any of the following:
(a) clothing or related accessories;
(b) textiles other than clothing which, under normal or reasonably foreseeable conditions of use, come into contact with human skin to an extent similar to clothing;
(c) footwear;
if the clothing, related accessory, textile other than clothing or footwear is for use by consumers and the substance is present in a concentration, measured in homogeneous material, equal to or greater than that specified for that substance in Appendix 12.
2. By way of derogation, in relation to the placing on the market of formaldehyde [CAS No 50-00-0] in jackets, coats or upholstery, the relevant concentration for the purposes of paragraph 1 shall be 300 mg/kg during the period between 1 November 2020 and 1 November 2023. The concentration specified in Appendix 12 shall apply thereafter.
3. Paragraph 1 shall not apply to:
(a) clothing, related accessories or footwear, or parts of clothing, related accessories or footwear, made exclusively of natural leather, fur or hide;
(b) non-textile fasteners and non-textile decorative attachments;
(c) second-hand clothing, related accessories, textiles other than clothing or footwear
(d) wall-to-wall carpets and textile floor coverings for indoor use, rugs and runners.
4. Paragraph 1 shall not apply to clothing, related accessories, textiles other than clothing, or footwear within the scope of Regulation (EU) 2016/425 of the European Parliament and of the Council (*) or Regulation (EU) 2017/745 of the European Parliament and of the Council (**).
5. Paragraph 1(b) shall not apply to disposable textiles. 'Disposable textiles' means textiles that are designed to be used only once or for a limited time and are not intended for subsequent use for the same or a similar purpose.
6. Paragraphs 1 and 2 shall apply without prejudice to the application of any stricter restrictions set out in this Annex or in other applicable Union legislation.
7. The Commission shall review the exemption in paragraph 3(d) and, if appropriate, modify that point accordingly.
(*) Regulation (EU) 2016/425 of the European Parliament and of the Council of 9 March 2016 on personal protective equipment and repealing Council Directive 89/686/EEC (OJ L 81, 31.3.2016, p. 51).
(**) Regulation (EU) 2017/745 of the European Parliament and of the Council of 5 April 2017 on medical devices, amending Directive 2001/83/EC, Regulation (EC) No 178/2002 and Regulation (EC) No 1223/2009 and repealing Council Directives 90/385/EEC and 93/42/EEC (OJ L 117, 5.5.2017, p. 1).

Safety data sheet

according to Regulation (EC) No. 1907/2006 (REACH)



Multi Element ICP - Standard Solution XIII ROTI®Star 15 elements in 2 % HNO₃ - mg/l

article number: 2644

Legend

- R75
1. Shall not be placed on the market in mixtures for use for tattooing purposes, and mixtures containing any such substances shall not be used for tattooing purposes, after 4 January 2022 if the substance or substances in question is or are present in the following circumstances:
 - (a) in the case of a substance classified in Part 3 of Annex VI to Regulation (EC) No 1272/2008 as carcinogen category 1A, 1B or 2, or germ cell mutagen category 1A, 1B or 2, the substance is present in the mixture in a concentration equal to or greater than 0,00005 % by weight;
 - (b) in the case of a substance classified in Part 3 of Annex VI to Regulation (EC) No 1272/2008 as reproductive toxicant category 1A, 1B or 2, the substance is present in the mixture in a concentration equal to or greater than 0,001 % by weight;
 - (c) in the case of a substance classified in Part 3 of Annex VI to Regulation (EC) No 1272/2008 as skin sensitiser category 1, 1A or 1B, the substance is present in the mixture in a concentration equal to or greater than 0,001 % by weight;
 - (d) in the case of a substance classified in Part 3 of Annex VI to Regulation (EC) No 1272/2008 as skin corrosive category 1, 1A, 1B or 1C or skin irritant category 2, or as serious eye damage category 1 or eye irritant category 2, the substance is present in the mixture in a concentration equal to or greater than:
 - (i) 0,1 % by weight, if the substance is used solely as a pH regulator;
 - (ii) 0,01 % by weight, in all other cases;
 - (e) in the case of a substance listed in Annex II to Regulation (EC) No 1223/2009 (*1), the substance is present in the mixture in a concentration equal to or greater than 0,00005 % by weight;
 - (f) in the case of a substance for which a condition of one or more of the following kinds is specified in column g (Product type, Body parts) of the table in Annex IV to Regulation (EC) No 1223/2009, the substance is present in the mixture in a concentration equal to or greater than 0,00005 % by weight:
 - (i) "Rinse-off products";
 - (ii) "Not to be used in products applied on mucous membranes";
 - (iii) "Not to be used in eye products";
 - (g) in the case of a substance for which a condition is specified in column h (Maximum concentration in ready for use preparation) or column i (Other) of the table in Annex IV to Regulation (EC) No 1223/2009, the substance is present in the mixture in a concentration, or in some other way, that does not accord with the condition specified in that column;
 - (h) in the case of a substance listed in Appendix 13 to this Annex, the substance is present in the mixture in a concentration equal to or greater than the concentration limit specified for that substance in that Appendix.
 2. For the purposes of this entry use of a mixture "for tattooing purposes" means injection or introduction of the mixture into a person's skin, mucous membrane or eyeball, by any process or procedure (including procedures commonly referred to as permanent make-up, cosmetic tattooing, micro-blading and micro-pigmentation), with the aim of making a mark or design on his or her body.
 3. If a substance not listed in Appendix 13 falls within more than one of points (a) to (g) of paragraph 1, the strictest concentration limit laid down in the points in question shall apply to that substance. If a substance listed in Appendix 13 also falls within one or more of points (a) to (g) of paragraph 1, the concentration limit laid down in point (h) of paragraph 1 shall apply to that substance.
 4. By way of derogation, paragraph 1 shall not apply to the following substances until 4 January 2023:
 - (a) Pigment Blue 15:3 (CI 74160, EC No 205-685-1, CAS No 147-14-8);
 - (b) Pigment Green 7 (CI 74260, EC No 215-524-7, CAS No 1328-53-6).
 5. If Part 3 of Annex VI to Regulation (EC) No 1272/2008 is amended after 4 January 2021 to classify or re-classify a substance such that the substance then becomes caught by point (a), (b), (c) or (d) of paragraph 1 of this entry, or such that it then falls within a different one of those points from the one within which it fell previously, and the date of application of that new or revised classification is after the date referred to in paragraph 1 or, as the case may be, paragraph 4 of this entry, that amendment shall, for the purposes of applying this entry to that substance, be treated as taking effect on the date of application of that new or revised classification.
 6. If Annex II or Annex IV to Regulation (EC) No 1223/2009 is amended after 4 January 2021 to list or change the listing of a substance such that the substance then becomes caught by point (e), (f) or (g) of paragraph 1 of this entry, or such that it then falls within a different one of those points from the one within which it fell previously, and the amendment takes effect after the date referred to in paragraph 1 or, as the case may be, paragraph 4 of this entry, that amendment shall, for the purposes of applying this entry to that substance, be treated as taking effect from the date falling 18 months after entry into force of the act by which that amendment was made.
 7. Suppliers placing a mixture on the market for use for tattooing purposes shall ensure that, after 4 January 2022, the mixture is marked with the following information:
 - (a) the statement "Mixture for use in tattoos or permanent make-up";
 - (b) a reference number to uniquely identify the batch;
 - (c) the list of ingredients in accordance with the nomenclature established in the glossary of common ingredient names pursuant to Article 33 of Regulation (EC) No 1223/2009, or in the absence of a common ingredient name, the IUPAC name. In the absence of a common ingredient name or IUPAC name, the CAS and EC number. Ingredients shall be listed in descending order by weight or volume of the ingredients at the time of formulation. "Ingredient" means any substance added during the process of formulation and present in the mixture for use for tattooing purposes. Impurities shall not be regarded as ingredients. If the name of a substance, used as ingredient within the meaning of this entry, is already required to be stated on the label in accordance with Regulation (EC) No 1272/2008, that ingredient does not need to be marked in accordance with this Regulation;
 - (d) the additional statement "pH regulator" for substances falling under point (d)(i) of paragraph 1;
 - (e) the statement "Contains nickel. Can cause allergic reactions." if the mixture contains nickel below the concentration limit specified in Appendix 13;
 - (f) the statement "Contains chromium (VI). Can cause allergic reactions." if the mixture contains chromium (VI) below the concentration limit specified in Appendix 13;
 - (g) safety instructions for use insofar as they are not already required to be stated on the label by Regulation (EC) No 1272/2008.
- The information shall be clearly visible, easily legible and marked in a way that is indelible.
The information shall be written in the official language(s) of the Member State(s) where the mixture is placed on the market, unless the Member State(s) concerned provide(s) otherwise.
Where necessary because of the size of the package, the information listed in the first subparagraph, except for point (a), shall be included instead in the instructions for use.
Before using a mixture for tattooing purposes, the person using the mixture shall provide the person undergoing the procedure with the information marked on the package or included in the instructions for use pursuant to this paragraph.

Safety data sheet

according to Regulation (EC) No. 1907/2006 (REACH)



Multi Element ICP - Standard Solution XIII ROTI®Star 15 elements in 2 % HNO₃ - mg/l

article number: 2644

Legend

8. Mixtures that do not contain the statement "Mixture for use in tattoos or permanent make-up" shall not be used for tattooing purposes.
9. This entry does not apply to substances that are gases at temperature of 20 °C and pressure of 101,3 kPa, or generate a vapour pressure of more than 300 kPa at temperature of 50 °C, with the exception of formaldehyde (CAS No 50-00-0, EC No 200-001-8).
10. This entry does not apply to the placing on the market of a mixture for use for tattooing purposes, or to the use of a mixture for tattooing purposes, when placed on the market exclusively as a medical device or an accessory to a medical device, within the meaning of Regulation (EU) 2017/745, or when used exclusively as a medical device or an accessory to a medical device, within the same meaning. Where the placing on the market or use may not be exclusively as a medical device or an accessory to a medical device, the requirements of Regulation (EU) 2017/745 and of this Regulation shall apply cumulatively.

Seveso Directive

| 2012/18/EU (Seveso III) | | | |
|-------------------------|---------------------------------------|---|-------|
| No | Dangerous substance/hazard categories | Qualifying quantity (tonnes) for the application of lower and upper-tier requirements | Notes |
| | not assigned | | |

Deco-Paint Directive

| | |
|-------------|--------------|
| VOC content | 0 % 0 g/l |
|-------------|--------------|

Industrial Emissions Directive (IED)

| | |
|--|-------|
| VOC content | 0 % |
| VOC content (Water content was discounted) | 0 g/l |

Directive on the restriction of the use of certain hazardous substances in electrical and electronic equipment (RoHS)

none of the ingredients are listed

Regulation concerning the establishment of a European Pollutant Release and Transfer Register (PRTR)

none of the ingredients are listed

Water Framework Directive (WFD)

| List of pollutants (WFD) | | | | |
|--------------------------|---|-----------|-----------|---------|
| Name of substance | Name acc. to inventory | CAS No | Listed in | Remarks |
| Lead(II) nitrate | lead compounds | | b) | |
| Lead(II) nitrate | lead compounds | 7439-92-1 | c) | |
| Lead(II) nitrate | Substances which contribute to eutrophication (in particular, nitrates and phosphates) | | a) | |
| Lead(II) nitrate | Substances and preparations, or the breakdown products of such, which have been proved to possess carcinogenic or mutagenic properties or properties which may affect steroidogenic, thyroid, reproduction or other endocrine-related functions in or via the aquatic environment | | a) | |

Safety data sheet

according to Regulation (EC) No. 1907/2006 (REACH)



Multi Element ICP - Standard Solution XIII ROTI®Star 15 elements in 2 % HNO₃ - mg/l

article number: 2644

| List of pollutants (WFD) | | | | |
|--------------------------|---|-----------|-----------|---------|
| Name of substance | Name acc. to inventory | CAS No | Listed in | Remarks |
| Lead(II) nitrate | Metals and their compounds | | a) | |
| cobalt dinitrate | Substances which contribute to eutrophication (in particular, nitrates and phosphates) | | a) | |
| cobalt dinitrate | Substances and preparations, or the breakdown products of such, which have been proved to possess carcinogenic or mutagenic properties or properties which may affect steroidogenic, thyroid, reproduction or other endocrine-related functions in or via the aquatic environment | | a) | |
| cobalt dinitrate | Metals and their compounds | | a) | |
| nickel dinitrate | nickel compounds | | b) | |
| nickel dinitrate | nickel compounds | 7440-02-0 | c) | |
| nickel dinitrate | Substances which contribute to eutrophication (in particular, nitrates and phosphates) | | a) | |
| nickel dinitrate | Substances and preparations, or the breakdown products of such, which have been proved to possess carcinogenic or mutagenic properties or properties which may affect steroidogenic, thyroid, reproduction or other endocrine-related functions in or via the aquatic environment | | a) | |
| nickel dinitrate | Metals and their compounds | | a) | |
| ammonium dichromate | Substances which contribute to eutrophication (in particular, nitrates and phosphates) | | a) | |
| ammonium dichromate | Substances and preparations, or the breakdown products of such, which have been proved to possess carcinogenic or mutagenic properties or properties which may affect steroidogenic, thyroid, reproduction or other endocrine-related functions in or via the aquatic environment | | a) | |
| ammonium dichromate | Metals and their compounds | | a) | |

Legend

- A) Indicative list of the main pollutants
- B) List of priority substances in the field of water policy
- C) Environmental Quality Standards for Priority Substances and certain other pollutants

Safety data sheet

according to Regulation (EC) No. 1907/2006 (REACH)



Multi Element ICP - Standard Solution XIII ROTI®Star 15 elements in 2 % HNO₃ - mg/l

article number: 2644

Regulation on the marketing and use of explosives precursors

| Explosives precursors which are subject to restrictions | | | | | |
|---|-----------|----------------------|---------|-------------|---|
| Name of substance | CAS No | Type of registration | Remarks | Limit value | Upper limit value for the purpose of licensing under Article 5(3) |
| Nitric acid ...% [C ≤ 70 %] | 7697-37-2 | Annex I | | 3 % w/w | 10 % w/w |

Legend

annex I Substances which shall not be made available to members of the general public on their own, or in mixtures or substances including them, except if the concentration is equal to or lower than the limit values set out below

Additional statements

If the product is passed on to third parties, in accordance with Article 7 "Notification of the supply chain" of Regulation EU 2019/1148, the information obligation is subject to the entire supply chain and all other provisions mentioned in Article 7 on restricted and regulated raw materials.

Regulation on drug precursors

none of the ingredients are listed

Regulation on substances that deplete the ozone layer (ODS)

none of the ingredients are listed

Regulation concerning the export and import of hazardous chemicals (PIC)

chemicals subject to the international prior informed consent (PIC) procedure (the 'PIC procedure').

| Name of substance | Name acc. to inventory | CAS No | Category / subcategory | Use limitation |
|-------------------|------------------------|--------|------------------------|----------------|
| Lead(II) nitrate | lead compounds | | i(2) | sr |

Legend

i(2) Sub-category: i(2) - industrial chemical for public use
sr Use limitation: severe restriction (for the sub-category or sub-categories concerned) according to Union legislation

Regulation on persistent organic pollutants (POP)

none of the ingredients are listed

Other information

Directive 94/33/EC on the protection of young people at work. Observe employment restrictions under the Maternity Protection Directive (92/85/EEC) for expectant or nursing mothers.

National inventories

| Country | Inventory | Status |
|---------|-----------|--------------------------------|
| AU | AICS | all ingredients are listed |
| CA | DSL | not all ingredients are listed |
| CA | NDSL | not all ingredients are listed |
| CN | IECSC | all ingredients are listed |
| EU | ECSI | all ingredients are listed |

Safety data sheet

according to Regulation (EC) No. 1907/2006 (REACH)



Multi Element ICP - Standard Solution XIII ROTI®Star 15 elements in 2 % HNO₃ - mg/l

article number: 2644

| Country | Inventory | Status |
|---------|------------|--------------------------------|
| EU | REACH Reg. | not all ingredients are listed |
| JP | CSCL-ENCS | not all ingredients are listed |
| JP | ISHA-ENCS | not all ingredients are listed |
| KR | KECI | all ingredients are listed |
| MX | INSQ | not all ingredients are listed |
| NZ | NZIoC | all ingredients are listed |
| PH | PICCS | not all ingredients are listed |
| TR | CICR | not all ingredients are listed |
| TW | TCSI | all ingredients are listed |
| US | TSCA | all ingredients are listed |

Legend

| | |
|------------|---|
| AICS | Australian Inventory of Chemical Substances |
| CICR | Chemical Inventory and Control Regulation |
| CSCL-ENCS | List of Existing and New Chemical Substances (CSCL-ENCS) |
| DSL | Domestic Substances List (DSL) |
| ECSI | EC Substance Inventory (EINECS, ELINCS, NLP) |
| IECSC | Inventory of Existing Chemical Substances Produced or Imported in China |
| INSQ | National Inventory of Chemical Substances |
| ISHA-ENCS | Inventory of Existing and New Chemical Substances (ISHA-ENCS) |
| KECI | Korea Existing Chemicals Inventory |
| NDSL | Non-domestic Substances List (NDSL) |
| NZIoC | New Zealand Inventory of Chemicals |
| PICCS | Philippine Inventory of Chemicals and Chemical Substances (PICCS) |
| REACH Reg. | REACH registered substances |
| TCSI | Taiwan Chemical Substance Inventory |
| TSCA | Toxic Substance Control Act |

15.2 Chemical Safety Assessment

Chemical safety assessments for substances in this mixture were not carried out.

SECTION 16: Other information

Indication of changes (revised safety data sheet)

Alignment to regulation: Regulation (EC) No. 1907/2006 (REACH), amended by 2020/878/EU

Restructuring: section 9, section 14

| Section | Former entry (text/value) | Actual entry (text/value) | Safety-relevant |
|---------|--|--|-----------------|
| 2.1 | | Classification according to Regulation (EC) No 1272/2008 (CLP); change in the listing (table) | yes |
| 2.1 | Remarks: For full text of Hazard- and EU Hazard-statements: see SECTION 16. | | yes |
| 2.2 | | Pictograms: change in the listing (table) | yes |
| 2.2 | | Precautionary statements - prevention: change in the listing (table) | yes |
| 2.2 | Precautionary statements - response | | yes |

Safety data sheet

according to Regulation (EC) No. 1907/2006 (REACH)



Multi Element ICP - Standard Solution XIII ROTI®Star 15 elements in 2 % HNO₃ - mg/l

article number: 2644

| Section | Former entry (text/value) | Actual entry (text/value) | Safety-relevant |
|---------|--|---|-----------------|
| 2.2 | | Precautionary statements - response: change in the listing (table) | yes |
| 2.2 | Hazardous ingredients for labelling: nickel dinitrate | Hazardous ingredients for labelling: Nickel dinitrate, Ammonium dichromate | yes |
| 2.2 | | Labelling of packages where the contents do not exceed 125 ml: change in the listing (table) | yes |
| 2.2 | contains: Nickel dinitrate | contains: Nickel dinitrate, Ammonium dichromate | yes |
| 2.3 | Other hazards: There is no additional information. | Other hazards | yes |
| 2.3 | | Results of PBT and vPvB assessment: This mixture does not contain any substances that are assessed to be a PBT or a vPvB. | yes |

Abbreviations and acronyms

| Abbr. | Descriptions of used abbreviations |
|-----------------|---|
| 2006/15/EC | Commission Directive establishing a second list of indicative occupational exposure limit values in implementation of Council Directive 98/24/EC and amending Directives 91/322/EEC and 2000/39/EC |
| 2017/2398/EU | Directive of the European Parliament and of the Council amending Directive 2004/37/EC on the protection of workers from the risks related to exposure to carcinogens or mutagens at work |
| 2019/983/EU | Directive of the European Parliament and of the Council amending Directive 2004/37/EC on the protection of workers from the risks related to exposure to carcinogens or mutagens at work |
| 98/24/EC | Council Directive on the protection of the health and safety of workers from the risks related to chemical agents at work |
| Acute Tox. | Acute toxicity |
| ADN | Accord européen relatif au transport international des marchandises dangereuses par voies de navigation intérieures (European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways) |
| ADR | Accord relatif au transport international des marchandises dangereuses par route (Agreement concerning the International Carriage of Dangerous Goods by Road) |
| Aquatic Acute | Hazardous to the aquatic environment - acute hazard |
| Aquatic Chronic | Hazardous to the aquatic environment - chronic hazard |
| ATE | Acute Toxicity Estimate |
| Carc. | Carcinogenicity |
| CAS | Chemical Abstracts Service (service that maintains the most comprehensive list of chemical substances) |
| Ceiling-C | Ceiling value |
| CLP | Regulation (EC) No 1272/2008 on classification, labelling and packaging of substances and mixtures |
| CLWR | Control of Lead at Work Regulations |
| CLWR-NIR | Control of Lead at Work Regulations (Northern Ireland) |
| DGR | Dangerous Goods Regulations (see IATA/DGR) |

Safety data sheet

according to Regulation (EC) No. 1907/2006 (REACH)



Multi Element ICP - Standard Solution XIII ROTI®Star 15 elements in 2 % HNO₃ - mg/l

article number: 2644

| Abbr. | Descriptions of used abbreviations |
|------------|--|
| EC No | The EC Inventory (EINECS, ELINCS and the NLP-list) is the source for the seven-digit EC number, an identifier of substances commercially available within the EU (European Union) |
| EH40/2005 | EH40/2005 Workplace exposure limits (http://www.nationalarchives.gov.uk/doc/open-government-licence/) |
| EINECS | European Inventory of Existing Commercial Chemical Substances |
| ELINCS | European List of Notified Chemical Substances |
| EmS | Emergency Schedule |
| ErC50 | ≡ EC50: in this method, that concentration of test substance which results in a 50 % reduction in either growth (EbC50) or growth rate (ErC50) relative to the control |
| Eye Dam. | Seriously damaging to the eye |
| Eye Irrit. | Irritant to the eye |
| GHS | "Globally Harmonized System of Classification and Labelling of Chemicals" developed by the United Nations |
| IARC | International Agency for Research on Cancer |
| IATA | International Air Transport Association |
| IATA/DGR | Dangerous Goods Regulations (DGR) for the air transport (IATA) |
| ICAO | International Civil Aviation Organization |
| ICAO-TI | Technical instructions for the safe transport of dangerous goods by air |
| IMDG | International Maritime Dangerous Goods Code |
| IMDG-Code | International Maritime Dangerous Goods Code |
| index No | The Index number is the identification code given to the substance in Part 3 of Annex VI to Regulation (EC) No 1272/2008 |
| IOELV | Indicative occupational exposure limit value |
| LC50 | Lethal Concentration 50%: the LC50 corresponds to the concentration of a tested substance causing 50 % lethality during a specified time interval |
| LD50 | Lethal Dose 50 %: the LD50 corresponds to the dose of a tested substance causing 50 % lethality during a specified time interval |
| Met. Corr. | Substance or mixture corrosive to metals |
| M-factor | Means a multiplying factor. It is applied to the concentration of a substance classified as hazardous to the aquatic environment acute category 1 or chronic category 1, and is used to derive by the summation method the classification of a mixture in which the substance is present |
| Muta. | Germ cell mutagenicity |
| NLP | No-Longer Polymer |
| NTP-RoC | National Toxicology Program: Report on Carcinogens |
| OEL | Workplace exposure limit |
| Ox. Liq. | Oxidising liquid |
| Ox. Sol. | Oxidising solid |
| PBT | Persistent, Bioaccumulative and Toxic |
| ppm | Parts per million |

Safety data sheet

according to Regulation (EC) No. 1907/2006 (REACH)



Multi Element ICP - Standard Solution XIII ROTI®Star 15 elements in 2 % HNO₃ - mg/l

article number: 2644

| Abbr. | Descriptions of used abbreviations |
|-------------|---|
| REACH | Registration, Evaluation, Authorisation and Restriction of Chemicals |
| Repr. | Reproductive toxicity |
| Resp. Sens. | Respiratory sensitisation |
| RID | Règlement concernant le transport International ferroviaire des marchandises Dangereuses (Regulations concerning the International carriage of Dangerous goods by Rail) |
| Skin Corr. | Corrosive to skin |
| Skin Irrit. | Irritant to skin |
| Skin Sens. | Skin sensitisation |
| STEL | Short-term exposure limit |
| STOT RE | Specific target organ toxicity - repeated exposure |
| STOT SE | Specific target organ toxicity - single exposure |
| TWA | Time-weighted average |
| VOC | Volatile Organic Compounds |
| vPvB | Very Persistent and very Bioaccumulative |
| WEL | Workplace exposure limit |

Key literature references and sources for data

Regulation (EC) No 1272/2008 on classification, labelling and packaging of substances and mixtures.
Regulation (EC) No. 1907/2006 (REACH), amended by 2020/878/EU.

Agreement concerning the International Carriage of Dangerous Goods by Road (ADR). Regulations concerning the International Carriage of Dangerous Goods by Rail (RID). International Maritime Dangerous Goods Code (IMDG). Dangerous Goods Regulations (DGR) for the air transport (IATA).

Classification procedure

Physical and chemical properties. The classification is based on tested mixture.

Health hazards. Environmental hazards. The method for classification of the mixture is based on ingredients of the mixture (additivity formula).

List of relevant phrases (code and full text as stated in section 2 and 3)

| Code | Text |
|------|--|
| H272 | May intensify fire; oxidiser. |
| H290 | May be corrosive to metals. |
| H301 | Toxic if swallowed. |
| H302 | Harmful if swallowed. |
| H312 | Harmful in contact with skin. |
| H314 | Causes severe skin burns and eye damage. |
| H315 | Causes skin irritation. |
| H317 | May cause an allergic skin reaction. |
| H318 | Causes serious eye damage. |
| H319 | Causes serious eye irritation. |

Safety data sheet

according to Regulation (EC) No. 1907/2006 (REACH)



Multi Element ICP - Standard Solution XIII ROTI®Star 15 elements in 2 % HNO₃ - mg/l

article number: 2644

| Code | Text |
|--------|--|
| H330 | Fatal if inhaled. |
| H331 | Toxic if inhaled. |
| H332 | Harmful if inhaled. |
| H334 | May cause allergy or asthma symptoms or breathing difficulties if inhaled. |
| H335 | May cause respiratory irritation. |
| H340 | May cause genetic defects. |
| H341 | Suspected of causing genetic defects. |
| H350 | May cause cancer. |
| H350i | May cause cancer by inhalation. |
| H360D | May damage the unborn child. |
| H360Df | May damage the unborn child. Suspected of damaging fertility. |
| H360F | May damage fertility. |
| H360FD | May damage fertility. May damage the unborn child. |
| H372 | Causes damage to organs through prolonged or repeated exposure. |
| H400 | Very toxic to aquatic life. |
| H410 | Very toxic to aquatic life with long lasting effects. |

Disclaimer

This information is based upon the present state of our knowledge. This SDS has been compiled and is solely intended for this product.