

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

### 1.1. Product identifier

**Product name:** UNIVERSAL FLUORINE REAGENT

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

**Use of substance / mixture:** PC21: Laboratory chemicals.

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

**Company name:** Elemental Microanalysis Ltd  
1 Hameldown Road Okehampton  
Okehampton  
Devon  
EX20 1UB  
United Kingdom

**Tel:** 44(0)183754446

**Fax:** 44(0)183754544

**Email:** [info@microanalysis.co.uk](mailto:info@microanalysis.co.uk)

### 1.4. Emergency telephone number

**Emergency tel:** +44 (0) 7990 767375 (24 hours)

## Section 2: Hazards identification

### 2.1. Classification of the substance or mixture

**Classification under CLP:** Acute Tox. 4: H302; Carc. 1Ai: H350i; Eye Irrit. 2: H319; Skin Irrit. 2: H315; Skin Sens. 1: H317; STOT SE 3: H335

**Most important adverse effects:** Harmful if swallowed. Causes skin irritation. May cause an allergic skin reaction.  
Causes serious eye irritation. May cause respiratory irritation. May cause cancer by inhalation.

### 2.2. Label elements

**Label elements:**

**Hazard statements:** H302: Harmful if swallowed.  
H315: Causes skin irritation.  
H317: May cause an allergic skin reaction.  
H319: Causes serious eye irritation.  
H335: May cause respiratory irritation.  
H350i: May cause cancer by inhalation.

**Hazard pictograms:** GHS07: Exclamation mark  
GHS08: Health hazard

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**Signal words:** Danger

**Precautionary statements:** P280: Wear protective gloves/protective clothing/eye protection/face protection.  
P301+312: IF SWALLOWED: Call a POISON CENTER/doctor/ if you feel unwell.  
P302+352: IF ON SKIN: Wash with plenty of water/.  
P304+340: IF INHALED: Remove person to fresh air and keep comfortable for breathing.  
P305+351+338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.  
P308+313: IF exposed or concerned: Get medical attention.

### 2.3. Other hazards

**PBT:** This product is not identified as a PBT/vPvB substance.

## Section 3: Composition/information on ingredients

### 3.2. Mixtures

#### Hazardous ingredients:

##### COBALT (II,III) OXIDE

EINECS	CAS	PBT / WEL	CLP Classification	Percent
215-157-2	1308-06-1	-	Skin Sens. 1: H317; Carc. 2: H351; Carc. 1A: H350; Carc. 1Ai: H350i	30-50%

##### ZIRCONIUM OXIDE

215-227-2	1314-23-4	-	Skin Irrit. 2: H315; Eye Irrit. 2: H319; STOT SE 3: H335	10-30%
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##### MAGNESIUM OXIDE

215-171-9	1309-48-4	Substance with a Community workplace exposure limit.	-	10-30%
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##### SILVER VANADATE

236-820-2	13497-94-4	-	Acute Tox. 3: H301; Acute Tox. 3: H311; Skin Irrit. 2: H315; Eye Irrit. 2: H319; Acute Tox. 3: H331; STOT SE 3: H335	1-10%
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##### SILVER

231-131-3	7440-22-4	-	Aquatic Acute 1: H400; Aquatic Chronic 1: H410	1-10%
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SILVER TUNGSTATE

-	13465-93-5	-	Skin Irrit. 2: H315; Eye Irrit. 2: H319; STOT SE 3: H335	1-10%
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## Section 4: First aid measures

### 4.1. Description of first aid measures

**Skin contact:** Remove all contaminated clothes and footwear immediately unless stuck to skin. Wash immediately with plenty of soap and water.

**Eye contact:** Bathe the eye with running water for 15 minutes. Consult a doctor.

**Ingestion:** Wash out mouth with water. Consult a doctor.

**Inhalation:** Remove casualty from exposure ensuring one's own safety whilst doing so. Consult a doctor.

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

**Skin contact:** There may be irritation and redness at the site of contact.

**Eye contact:** There may be irritation and redness. The eyes may water profusely.

**Ingestion:** There may be soreness and redness of the mouth and throat.

**Inhalation:** There may be irritation of the throat with a feeling of tightness in the chest. Exposure may cause coughing or wheezing.

**Delayed / immediate effects:** Immediate effects can be expected after short-term exposure.

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

**Immediate / special treatment:** Eye bathing equipment should be available on the premises.

## Section 5: Fire-fighting measures

### 5.1. Extinguishing media

**Extinguishing media:** Suitable extinguishing media for the surrounding fire should be used.

### 5.2. Special hazards arising from the substance or mixture

**Exposure hazards:** In combustion emits toxic fumes.

### 5.3. Advice for fire-fighters

**Advice for fire-fighters:** Wear self-contained breathing apparatus. Wear protective clothing to prevent contact with skin and eyes.

## Section 6: Accidental release measures

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

**Personal precautions:** Refer to section 8 of SDS for personal protection details. If outside do not approach from downwind. If outside keep bystanders upwind and away from danger point. Mark out the contaminated area with signs and prevent access to unauthorised personnel. Do not create dust.

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### 6.2. Environmental precautions

**Environmental precautions:** Do not discharge into drains or rivers.

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

**Clean-up procedures:** Transfer to a closable, labelled salvage container for disposal by an appropriate method.

### 6.4. Reference to other sections

**Reference to other sections:** Refer to section 8 of SDS.

## Section 7: Handling and storage

### 7.1. Precautions for safe handling

**Handling requirements:** Avoid direct contact with the substance. Ensure there is sufficient ventilation of the area.  
Do not handle in a confined space. Avoid the formation or spread of dust in the air.

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

**Storage conditions:** Store in a cool, well ventilated area. Keep container tightly closed.

### 7.3. Specific end use(s)

**Specific end use(s):** No data available.

## Section 8: Exposure controls/personal protection

### 8.1. Control parameters

**Hazardous ingredients:**

**COBALT (II,III) OXIDE**

**Workplace exposure limits:**

**Respirable dust**

State	8 hour TWA	15 min. STEL	8 hour TWA	15 min. STEL
EU	0.1 mg/m <sup>3</sup>	-	-	-

**MAGNESIUM OXIDE**

UK	-	-	4mg/m <sup>3</sup>	-
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**SILVER**

EU	0.1mg/m <sup>3</sup>	-	-	-
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**SILVER TUNGSTATE**

UK	-	-	5mg/m <sup>3</sup>	-
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### DNEL/PNEC Values

**DNEL / PNEC** No data available.

### 8.2. Exposure controls

**Engineering measures:** Ensure there is sufficient ventilation of the area.

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**Respiratory protection:** Self-contained breathing apparatus must be available in case of emergency. Respiratory protective device with particle filter. Particle filter class P2S (EN143).

**Hand protection:** Protective gloves.

**Eye protection:** Safety glasses. Ensure eye bath is to hand.

**Skin protection:** Protective clothing.

## Section 9: Physical and chemical properties

### 9.1. Information on basic physical and chemical properties

**State:** Solid

**Colour:** Grey

**Odour:** Odourless

**Evaporation rate:** No data available.

**Oxidising:** No data available.

**Solubility in water:** No data available.

**Viscosity:** No data available.

**Boiling point/range°C:** No data available.

**Melting point/range°C:** No data available.

**Flammability limits %: lower:** No data available.

**upper:** No data available.

**Flash point°C:** No data available.

**Part.coeff. n-octanol/water:** No data available.

**Autoflammability°C:** No data available.

**Vapour pressure:** No data available.

**Relative density:** No data available.

**pH:** No data available.

**VOC g/l:** No data available.

### 9.2. Other information

**Other information:** No data available.

## Section 10: Stability and reactivity

### 10.1. Reactivity

**Reactivity:** Stable under recommended transport or storage conditions.

### 10.2. Chemical stability

**Chemical stability:** Stable under normal conditions.

### 10.3. Possibility of hazardous reactions

**Hazardous reactions:** Hazardous reactions will not occur under normal transport or storage conditions.  
Decomposition may occur on exposure to conditions or materials listed below.

### 10.4. Conditions to avoid

**Conditions to avoid:** Heat.

### 10.5. Incompatible materials

**Materials to avoid:** Strong oxidising agents. Strong acids.

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### 10.6. Hazardous decomposition products

**Haz. decomp. products:** In combustion emits toxic fumes.

## Section 11: Toxicological information

### 11.1. Information on toxicological effects

**Hazardous ingredients:**

#### COBALT (II,III) OXIDE

DERMAL	RAT	LD50	2000	mg/kg
DUST/MIST	RAT	4H LC50	5.06	mg/kg
ORAL	RAT	LD50	5000	mg/kg

#### SILVER

ORAL	MUS	LD50	10000	mg/kg
ORAL	RAT	LD50	2000	mg/kg

**Relevant hazards for substance:**

Hazard	Route	Basis
Acute toxicity (ac. tox. 4)	ING	Hazardous: calculated
Skin corrosion/irritation	DRM	Hazardous: calculated
Serious eye damage/irritation	OPT	Hazardous: calculated
Respiratory/skin sensitisation	DRM	Hazardous: calculated
Carcinogenicity	--	Hazardous: calculated
STOT-single exposure	INH	Hazardous: calculated

### Symptoms / routes of exposure

**Skin contact:** There may be irritation and redness at the site of contact.

**Eye contact:** There may be irritation and redness. The eyes may water profusely.

**Ingestion:** There may be soreness and redness of the mouth and throat.

**Inhalation:** There may be irritation of the throat with a feeling of tightness in the chest. Exposure may cause coughing or wheezing.

**Delayed / immediate effects:** Immediate effects can be expected after short-term exposure.

## Section 12: Ecological information

### 12.1. Toxicity

**Hazardous ingredients:**

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### COBALT (II,III) OXIDE

ALGAE	72H IC50	88	mg/l
Daphnia magna	48H EC50	136	mg/l

### SILVER

Daphnia magna	48H LC50	0.00022mg/kg	mg/l
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#### 12.2. Persistence and degradability

**Persistence and degradability:** Biodegradable.

#### 12.3. Bioaccumulative potential

**Bioaccumulative potential:** No bioaccumulation potential.

#### 12.4. Mobility in soil

**Mobility:** No data available.

#### 12.5. Results of PBT and vPvB assessment

**PBT identification:** This product is not identified as a PBT/vPvB substance.

#### 12.6. Other adverse effects

**Other adverse effects:** Negligible ecotoxicity.

## Section 13: Disposal considerations

#### 13.1. Waste treatment methods

**Disposal operations:** Transfer to a suitable container and arrange for collection by specialised disposal company.

**NB:** The user's attention is drawn to the possible existence of regional or national regulations regarding disposal.

## Section 14: Transport information

#### 14.1. UN number

**UN number:** UN3285

#### 14.2. UN proper shipping name

**Shipping name:** VANADIUM COMPOUND, N.O.S.

#### 14.3. Transport hazard class(es)

**Transport class:** 6.1

#### 14.4. Packing group

**Packing group:** III

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### 14.5. Environmental hazards

Environmentally hazardous: Yes

Marine pollutant: No

### 14.6. Special precautions for user

Special precautions: No special precautions.

Tunnel code: E

Transport category: 2

## Section 15: Regulatory information

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

Specific regulations: Not applicable.

### 15.2. Chemical Safety Assessment

**Chemical safety assessment:** A chemical safety assessment has not been carried out for the substance or the mixture by the supplier.

## Section 16: Other information

### Other information

**Other information:** This safety data sheet is prepared in accordance with Commission Regulation (EU) No 453/2010.

This safety data sheet is prepared in accordance with Commission Regulation (EC) No 1272/2008.

\* indicates text in the SDS which has changed since the last revision.

**Phrases used in s.2 and s.3:** H301: Toxic if swallowed.

H302: Harmful if swallowed.

H311: Toxic in contact with skin.

H315: Causes skin irritation.

H317: May cause an allergic skin reaction.

H319: Causes serious eye irritation.

H331: Toxic if inhaled.

H335: May cause respiratory irritation.

H350i: May cause cancer by inhalation.

H351: Suspected of causing cancer <state route of exposure if it is conclusively proven that no other routes of exposure cause the hazard>.

H400: Very toxic to aquatic life.

H410: Very toxic to aquatic life with long lasting effects.

**Legal disclaimer:** The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. This company shall not be held liable for any damage resulting from handling or from contact with the above product.