



SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

Print Date: 29.01.2014

Version 2

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

1.1. Product identifier

Product code: 1685071

Product name: **ECOTRI WF**

Further information: See chapter: 3

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

Identified uses

Chemical plating of metals / Surface treatment

Uses advised against

Consumer use

SECTION 2: HAZARDS IDENTIFICATION

2.1. Classification of the substance or mixture

REGULATION (EC) No 1272/2008:

Acute dermal toxicity	Category 2
Skin corrosion / irritation	Category 1 B
Respiratory sensitization	Category 1
Skin sensitization	Category 1
Germ cell mutagenicity	Category 2
Carcinogenicity	Category 1 B
Reproductive toxicity	Category 1 B
Acute aquatic toxicity	Category 1
Chronic aquatic toxicity	Category 1

Physical hazards:

Corrosive to metals - Category 1

Classification according to EU Directives 67/548/EEC or 1999/45/EC:

The preparation is classified as dangerous in accordance with Directive 1999/45/EC

T - Toxic

N - Dangerous for the environment.

2.2. Label elements

Hazard Pictograms



Signal word:

Danger

contains:

Hydrofluoric acid , chromium(III) nitrate, Cobalt (II) Nitrate

Hazard statements

- H290 - May be corrosive to metals
- H310 - Fatal in contact with skin
- H314 - Causes severe skin burns and eye damage
- H317 - May cause an allergic skin reaction
- H334 - May cause allergy or asthma symptoms or breathing difficulties if inhaled
- H341 - Suspected of causing genetic defects
- H350i - May cause cancer by inhalation
- H360F - May damage fertility
- H410 - Very toxic to aquatic life with long lasting effects

Precautionary statements

- P202 - Do not handle until all safety precautions have been read and understood
- P280 - Wear protective gloves/ protective clothing/ eye protection/ face protection
- P301 + P330 + P331 - IF SWALLOWED: rinse mouth. Do NOT induce vomiting
- P303 + P361 + P353 - IF ON SKIN (or hair): Remove/ Take off immediately all contaminated clothing. Rinse skin with water/ shower
- P304 + P340 - IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing
- P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
- P310 - Immediately call a POISON centre or doctor/ physician
- P405 - Store locked up
- P501 - Dispose of contents/ container to an approved waste disposal plant

according to EU Directives 67/548/EEC or 1999/45/EC:

Symbol(s)



Contains:

Cobalt (II) Nitrate, Hydrofluoric acid, chromium(III) nitrate

R-phrases

- R34 - Causes burns
- R49 - May cause cancer by inhalation
- R68 - Possible risk of irreversible effects
- R60 - May impair fertility
- R23/24/25 - Also toxic by inhalation, in contact with skin and if swallowed
- R42/43 - May cause sensitization by inhalation and skin contact
- R50/53 - Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment

S-phrase(s)

S23 - Do not breathe dust/fume/gas/mist/vapours/spray

S26 - In case of contact with eyes, rinse immediately with plenty of water and seek medical advice

S45 - In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible)

S53 - Avoid exposure - obtain special instructions before use

S60 - This material and its container must be disposed of as hazardous waste

S61 - Avoid release to the environment. Refer to special instructions/safety data sheets

S57 - Use appropriate container to avoid environmental contamination

S36/37/39 - Wear suitable protective clothing, gloves and eye/face protection

Labelling:

Restricted to professional users

2.3. Other hazards

None known

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS**Description**

Aqueous solution of chemicals

Components	Weight %	CAS-No	INDEX No	EC-No.	REACH No.	according to Regulation (EC) No. 1272/2008	Directive 67/548/EC
chromium(III) nitrate	10-30	13548-38-4	-	236-921-1	05-2114595058-38	Skin Corr. 1B (H314) Oxidising Solid, Cat.3 (H272)	O;R8 C;R34
Cobalt (II) Nitrate	2.5-5	10141-05-6	027-009-00-2	233-402-1	-	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) Oxidising Solid, Cat. 2 (H272) Acute Tox. 4 (H302)	Carc.Cat.2;R49 Muta.Cat.3;R68 Repr.Cat.2;R60 Xn;R42/43 N;R50/53
Acetic acid	2.5-5	64-19-7	607-002-00-6	200-580-7	-	Skin Corr. 1A (H314) B Flam. Liq. 3 (H226) B	R10 C;R35
Hydrofluoric acid	2.5-5	7664-39-3	009-003-00-1	231-634-8	-	Acute Tox. 2 (H300) Acute Tox. 1 (H310) Skin Corr. 1A (H314) Acute Tox. 2 (H330)	T+;R26/27/28 C;R35

For the full text of the H-Statements mentioned in this Section, see Section 16**For the full text of the R phrases mentioned in this Section, see Section 16****SECTION 4: FIRST AID MEASURES****4.1. Description of first aid measures****General advice:**

Call a physician immediately.

Skin contact:

Wash off immediately with plenty of water. First treatment with calcium gluconate paste. Take off all contaminated clothing immediately.

Inhalation:

Move to fresh air

Keep respiratory tract clear

Artificial respiration and/or oxygen may be necessary

Eye contact:

Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.

Ingestion:
Call a physician or Poison Control Center immediately. Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person.

Protection of first-aiders:
First aider needs to protect himself. Use personal protective equipment.

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

Irritation and corrosion. Cardiac irregularities. Circulatory collapse. Spasm.

4.3. Indication of immediate medical attention and special treatment needed

Health effects caused by fluorine, hydrofluoric acid and its mineral salts For specialist advice physicians should contact the Poisons Information Service

SECTION 5: FIRE-FIGHTING MEASURES

5.1. Extinguishing media

Suitable extinguishing media:
Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Extinguishing media which must not be used for safety reasons:
DO NOT use combustible materials such as sawdust.

5.2. Special hazards arising from the substance or mixture

In case of fire hazardous decomposition products may be produced such as. Hydrogen fluoride. Nitrogen oxides (NOx). Metal oxides.

5.3. Advice for fire-fighters

Wear self-contained breathing apparatus and protective suit. Suppress (knock down) gases/vapours/mists with a water spray jet. Dike and collect water used to fight fire. Prevent fire extinguishing water from contaminating surface water or the ground water system. Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures

May be fatal if inhaled, absorbed through skin, or swallowed. Avoid contact with skin, eyes and clothing. Evacuate personnel to safe areas. Prevent unauthorized access.

6.2. Environmental precautions

Should not be released into the environment.

6.3. Methods and materials for containment and cleaning up

DO NOT use combustible materials such as sawdust. Do not allow to dry. Avoid formation of dust and aerosols. Soak up with inert absorbent material. Keep in suitable, closed containers for disposal. Clean contaminated surface thoroughly. Dispose of in accordance with local regulations.

Prevent further leakage or spillage if safe to do so

6.4. Reference to other sections

For personal protection see section 8. See also section 13.

SECTION 7: HANDLING AND STORAGE

7.1. Precautions for safe handling

Use only in area provided with appropriate exhaust ventilation.

Do not breathe vapours/dust. Do not ingest. Remove and wash contaminated clothing before re-use. For personal protection see section 8.

Handle in accordance with good industrial hygiene and safety practise.

7.2. Conditions for safe storage, including any incompatibilities

Keep containers tightly closed in a dry, cool and well-ventilated place. Keep locked-up. See chapter: 10.

Storage Temperature

Keep above

-5 °C

Keep below

40°C

7.3. Specific end uses

None known

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION**8.1. Control parameters****Derived No Effect Level / Derived minimal effect level**

No information available.

Predicted No Effect Concentration

No information available.

National occupational exposure limits / Biological occupational exposure limits

Components	Australia	Austria	Belgium	Bulgaria	Croatia
Cobalt (II) Nitrate		Respiratory sensitizer Skin sensitizer			
Acetic acid	STEL: 15 ppm STEL: 37 mg/m ³ STEL: 15 ppm TWA: 10 ppm TWA: 25 mg/m ³	TWA: 10 ppm TWA: 25 mg/m ³ TWA: 10 ppm STEL: 20 ppm STEL: 50 mg/m ³	STEL: 15 ppm STEL: 38 mg/m ³ STEL: 15 ppm TWA: 10 TWA TWA: 25 TWA	STEL: 37.0 mg/m ³	TWA: 10 ppm TWA: 25 mg/m ³ TWA: 10 ppm
Hydrofluoric acid	Peak: 3 ppm Peak: 2.6 mg/m ³ Peak: 3 ppm	TWA: 1.8 ppm TWA: 1.5 mg/m ³ TWA: 1.8 ppm STEL: 3 ppm STEL: 2.5 mg/m ³ Skin	Maximum Limit Value: 3 ppm 15 minutes Maximum Limit Value: 2.5 mg/m ³ 15 minutes Maximum Limit Value: 1.8 ppm 8 hours Maximum Limit Value: 1.5 mg/m ³ 8 hours Maximum Limit Value: 3 ppm 15 minutes	STEL: 2.5 mg/m ³	STEL: 3 ppm STEL: 2.5 mg/m ³ STEL: 3 ppm TWA: 1.8 ppm TWA: 1.5 mg/m ³

Components	France	Germany	Hungary	Ireland	Italy
chromium(III) nitrate	0.03 mg/g creatinine urine end of shift at end of workweek Total Chromium soluble aerosol, Background noise on non-exposed subjects	skin sensitizer	TWA: 2 mg/m ³ TWA: 0.5 mg/m ³ STEL: 2 mg/m ³ sensitizer	TWA: 2 mg/m ³	
Cobalt (II) Nitrate	0.001 mg/L blood end of shift at end of workweek Cobalt	skin notation Carcinogen: Category 2 Mutagens: Category 3A respiratory and skin sensitizer	TWA: 0.1 mg/m ³ STEL: 0.4 mg/m ³ sensitizer	TWA: 0.1 mg/m ³ Sensitizer	

Components	Czech Republic	Denmark	EU	Estonia	Finland
chromium(III) nitrate	TWA: 0.5 mg/m ³ Ceiling: 1.5 mg/m ³		TWA: 2 mg/m ³		TWA: 0.5 mg/m ³
Cobalt (II) Nitrate	TWA: 0.05 mg/m ³ Ceiling: 0.1 mg/m ³ Sensitizer	TWA: 0.01 mg/m ³ Carcinogen: Present			TWA: 0.05 mg/m ³
Acetic acid	TWA: 25 mg/m ³ Ceiling: 35 mg/m ³	TWA: 10 ppm TWA: 25 mg/m ³ TWA: 10 ppm Organic Solvents with TWA: Present	Limit Values: 10 ppm TWA Limit Values: 25 mg/m ³ TWA Limit Values: 10 ppm TWA	STEL: 10 ppm STEL: 25 mg/m ³ STEL: 10 ppm TWA: 10 ppm TWA: 25 mg/m ³	TWA: 5 ppm TWA: 13 mg/m ³ TWA: 5 ppm STEL: 10 ppm STEL: 25 mg/m ³
Hydrofluoric acid	TWA: 1.5 mg/m ³ Ceiling: 2.5 mg/m ³	TWA: 1.8 ppm TWA: 1.5 mg/m ³ TWA: 1.8 ppm	TWA: 1.8 ppm TWA: 1.5 mg/m ³ TWA: 1.8 ppm STEL: 3 ppm STEL: 2.5 mg/m ³	STEL: 3 ppm STEL: 2.5 mg/m ³ STEL: 3 ppm TWA: 1.8 ppm TWA: 1.5 mg/m ³	TWA: 1.8 ppm TWA: 1.5 mg/m ³ TWA: 1.8 ppm STEL: 3 ppm STEL: 2.5 mg/m ³ Skin

Components	France	Germany	Hungary	Ireland	Italy
Acetic acid	STEL: 10 ppm STEL: 25 mg/m ³ STEL: 10 ppm	MAK: 10 ppm MAK: 25 mg/m ³ MAK: 10 ppm TWA: 10 ppm TWA: 25 mg/m ³ Peak: 20 ppm Peak: 50 mg/m ³ Pregnancy: no risk to embryo/fetus if exposure limits adhered to	TWA: 25 mg/m ³ STEL: 25 mg/m ³	TWA: 10 ppm TWA: 25 mg/m ³ TWA: 10 ppm STEL: 15 ppm STEL: 37 mg/m ³	
Hydrofluoric acid	TWA: 1.8 ppm TWA: 1.5 mg/m ³ TWA: 1.8 ppm STEL: 3 ppm STEL: 2.5 mg/m ³ 10 mg/g creatinine urine end of shift Fluorides Background noise on non-exposed subjects, Non-specific (observed after the exposure to other substances) 3 mg/g creatinine urine prior to shift Fluorides	MAK: 1 ppm MAK: 0.83 mg/m ³ MAK: 1 ppm TWA: 1 ppm TWA: 0.83 mg/m ³ skin notation BAT: 7.0 mg/g urine BAT: 4.0 mg/g urine Peak: 2 ppm Peak: 1.66 mg/m ³ Pregnancy: no risk to embryo/fetus if exposure limits adhered to	STEL: 2.5 mg/m ³ STEL: 10 mg/m ³ Skin	TWA: 1.8 ppm TWA: 1.5 mg/m ³ TWA: 1.8 ppm STEL: 3 ppm STEL: 2.5 mg/m ³ Skin	TWA: 1.8 ppm TWA: 1.5 mg/m ³ TWA: 1.8 ppm STEL: 3 ppm STEL: 2.5 mg/m ³

Components	Latvia	Lithuania	The Netherlands	Norway	Poland
chromium(III) nitrate			TWA: 0.06 mg/m ³ TWA: 0.5 mg/m ³	TWA: 0.5 mg/m ³ STEL: 1.5 mg/m ³	TWA: 0.5 mg/m ³ Allergenic substance Corrosive substance
Cobalt (II) Nitrate		Sensitizer TWA: 0.05 mg/m ³		TWA: 0.02 mg/m ³ Carcinogen Potential reproductive hazard Sensitizing substance STEL: 0.06 mg/m ³	
Acetic acid		TWA: 10 ppm TWA: 25 mg/m ³ TWA: 10 ppm		TWA: 10 ppm TWA: 25 mg/m ³ TWA: 10 ppm STEL: 20 ppm STEL: 37.5 mg/m ³	TWA: 15 mg/m ³ NDSch: 30 mg/m ³ Corrosive substance Fetotoxicity
Hydrofluoric acid		STEL: 2.5 mg/m ³	STEL: 1 mg/m ³	TWA: 0.5 mg/m ³ Skin STEL: 1.5 mg/m ³	Corrosive substance Irritant

Components	Spain	Sweden	Switzerland	United Kingdom	Turkey
chromium(III) nitrate				TWA: 0.5 mg/m ³	

Components	Portugal	Romania	Serbia	Slovakia	Slovenia
chromium(III) nitrate	A4 - Not Classifiable as a Human Carcinogen TWA: 0.5 mg/m ³				
Cobalt (II) Nitrate	A3 - Confirmed Animal Carcinogen with Unknown Relevance to Humans TWA: 0.02 mg/m ³				
Acetic acid	TWA: 10 ppm STEL: 15 ppm	TWA: 10 ppm TWA: 25 mg/m ³ TWA: 10 ppm	TWA: 10 ppm TWA: 25 mg/m ³ TWA: 10 ppm	TWA: 10 ppm TWA: 25 mg/m ³ TWA: 10 ppm	TWA: 10 ppm TWA: 25 mg/m ³ TWA: 10 ppm
Hydrofluoric acid	Ceiling: 2ppm TWA: 0.5 ppm	STEL: 3 ppm STEL: 2.50 mg/m ³ STEL: 3 ppm TWA: 1.8 ppm TWA: 1.5 mg/m ³	TWA: 1.8 ppm TWA: 1.5 mg/m ³ TWA: 1.8 ppm STEL: 3 ppm STEL: 2.5 mg/m ³	Ceiling: 2.5 mg/m ³	TWA: 1.8 ppm TWA: 1.5 mg/m ³ TWA: 1.8 ppm STEL: 2.7 ppm STEL: 2.25 mg/m ³

Components	Spain	Sweden	Switzerland	United Kingdom	Turkey
Cobalt (II) Nitrate	Suspected human carcinogen			TWA: 0.1 mg/m ³	
Acetic acid	VLA ED: 10 ppm VLA ED: 25 mg/m ³ VLA ED: 10 ppm VLA EC: 15 ppm VLA EC: 37 mg/m ³	LLV: 5 ppm LLV: 13 mg/m ³ LLV: 5 ppm STEL: 10 ppm STEL: 25 mg/m ³	Developmental Risk Group C TWA: 10 ppm MAK TWA: 25 mg/m ³ MAK STEL: 20 ppm KZW STEL: 50 mg/m ³ KZW		TWA: 10 ppm TWA: 25 mg/m ³ TWA: 10 ppm
Hydrofluoric acid	VLA ED: 1.8 ppm VLA ED: 1.5 mg/m ³ VLA ED: 1.8 ppm VLA EC: 3 ppm VLA EC: 2.5 mg/m ³ 8 mg/L urine end of shift Fluorides	Ceiling Limit Value: 2 ppm Ceiling Limit Value: 1.7 mg/m ³ Ceiling Limit Value: 2 ppm	Developmental Risk Group C TWA: 1 ppm MAK TWA: 0.83 mg/m ³ MAK STEL: 2 ppm KZW STEL: 1.66 mg/m ³ KZW BAT: 7 mg/g creatinine urine end of shift Fluoride BAT: 4 mg/g creatinine urine before subsequent shift Fluoride	TWA: 1.8 ppm TWA: 1.5 mg/m ³ TWA: 1.8 ppm STEL: 3 ppm STEL: 2.5 mg/m ³	STEL: 3 ppm STEL: 2.5 mg/m ³ STEL: 3 ppm TWA: 1.8 ppm TWA: 1.5 mg/m ³

Recommended monitoring procedures

Handle in accordance with good industrial hygiene and safety practise

8.2. Exposure controls

Appropriate engineering controls:

Ensure adequate ventilation

Apply technical measures to comply with the occupational exposure limits

Individual protection measures

Hygiene measures

Wash face, hands and any exposed skin thoroughly after handling. Barrier creams may help to protect the exposed areas of skin, they should however not be applied once exposure has occurred.

Eye protection:

Tightly fitting safety goggles. Ensure that eyewash stations and safety showers are close to the workstation location.

Skin protection / Hand protection

Suitable safety glove for not intended contact with the product during use pursuant to section 1:

Product name: e.g. KCL Camapren® 720

Material: Chloroprene

Thickness in mm: 0,65 +/- 0,1

Breakthrough time in min: > 120

The applied gloves must be in accordance with the specifications of EC 89/686/EEC and the resulting standard EN 374.

Increased temperature, reduced thickness through elongation, abrasion and/or repeated use of gloves leads to a modified breakthrough-time.

Furthermore, breakthrough times may also vary if the product delivered is diluted and/or used in conjunction with other chemicals. Therefore, please contact a supplier of CE-approved gloves to find the suitable glove for your conditions and to ensure safe use it is recommended to replace used gloves frequently. Do not wear leather gloves. Wear suitable protective clothing.

Respiratory protection:

In case of insufficient ventilation wear suitable respiratory equipment

When workers are facing concentrations above the exposure limit they must use appropriate certified respirators. Recommended Filter type: ABEK P3

Thermal hazards:

None known

Environmental exposure controls:

Do not empty into drains

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

Form	liquid
Colour:	dark green
Odour:	No information available
Odour Threshold	No information available
Melting point (°C):	No information available
Boiling point (°C):	> 100
Flash point (°C):	Not applicable
Evaporation rate:	No information available
Flammability	No information available
Lower explosion limit	Not applicable
Upper explosion limit	Not applicable
Vapour pressure:	No information available
Relative vapour density	No information available
Water solubility	miscible
Partition coefficient: n-octanol/water	No information available
Autoignition temperature (°C):	No information available
Decomposition temperature (°C):	No information available

Viscosity:	No information available
Explosive properties:	Not applicable
oxidising properties	No information available

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

pH: 2.00 - 3.00 (1% in H₂O)

Relative density 1.240 - 1.280

9.2. Other information

VOC Content(%):**
3

Solubility in other solvents:
No information available

Bulk density
No information available

Ignition temperature (°C):
No information available

Solidification point (°C):
Not required

** Volatile organic compounds (VOC) content 814.018

SECTION 10: STABILITY AND REACTIVITY

10.1. Reactivity
Corrosive in contact with metals

10.2. Chemical stability
Stable under recommended storage conditions

10.3. Possibility of hazardous reactions
Potential for exothermic hazard - Bases , Reducing agents

10.4. Conditions to Avoid
To avoid thermal decomposition, do not overheat. Do not allow to dry. The product is oxidizing when dried.

10.5. Incompatible materials:
glass.

10.6. Hazardous Decomposition Products
See chapter: 5.

SECTION 11: TOXICOLOGICAL INFORMATION

11.1. Information on toxicological effects

Skin contact
Fatal in contact with skin. Extremely corrosive and destructive to tissue.

Eye contact
Risk of serious damage to eyes

Inhalation

Inhaled corrosive substances can lead to a toxic oedema of the lungs.

Ingestion

Ingestion causes burns of the upper digestive and respiratory tracts.

Sensitisation

May cause sensitization by skin contact

May cause sensitization by inhalation

carcinogenic effects

May cause cancer

mutagenic effects

Suspected of causing genetic defects

Reproductive toxicity

May impair fertility May damage fertility or the unborn child

STOT - single exposure

No information available

STOT - repeated exposure

No information available

Aspiration hazard

No information available

Other information on acute toxicity

Components	LD50/oral/rat	LC50/inhalation/rat	LD50/dermal/rabbit
chromium(III) nitrate - 13548-38-4	3250 mg/kg	No information available	No information available
Cobalt (II) Nitrate - 10141-05-6	434 mg/kg	No information available	No information available
Acetic acid - 64-19-7	3310 mg/kg	11.4 mg/L 4h	1060 mg/kg
Hydrofluoric acid - 7664-39-3	No information available	1276 ppm 1h	No information available

Components	Type	Values	Test Method	Test period
chromium(III) nitrate 13548-38-4	NOAEL - Oral	no data available	no data available	no data available
Cobalt (II) Nitrate 10141-05-6	NOAEL - Oral	no data available	no data available	no data available
Acetic acid 64-19-7	NOAEL - Oral	no data available	no data available	no data available
Hydrofluoric acid 7664-39-3	NOAEL - Oral	no data available	no data available	no data available

Components	Type	Values	Test Method	Test period
chromium(III) nitrate 13548-38-4	NOAEL - Inhalation	no data available	no data available	no data available
Cobalt (II) Nitrate 10141-05-6	NOAEL - Inhalation	no data available	no data available	no data available
Acetic acid 64-19-7	NOAEL - Inhalation	no data available	no data available	no data available
Hydrofluoric acid 7664-39-3	NOAEL - Inhalation	no data available	no data available	no data available

Other information

Irritation and corrosion

Cardiac irregularities

Circulatory collapse

Spasm

SECTION 12: ECOLOGICAL INFORMATION

12.1. Toxicity

Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment. Avoid release to the environment.

Components	Type	Freshwater Fish Species	Test Method
chromium(III) nitrate - 13548-38-4	LC50	no data available	no data available
Cobalt (II) Nitrate - 10141-05-6	LC50	no data available	no data available
Acetic acid - 64-19-7	LC50	96 h LC50 (Lepomis macrochirus) = 75 mg/L 96 h LC50 (Pimephales promelas) = 88 mg/L	no data available
Hydrofluoric acid - 7664-39-3	LC50	48 h LC50 (Lepomis macrochirus) = 660 mg/L	no data available

Components	Type	Freshwater Algae	Test Method
chromium(III) nitrate 13548-38-4	EC50/72h/algae =	no data available	no data available
Cobalt (II) Nitrate 10141-05-6	EC50/72h/algae =	no data available	no data available
Acetic acid 64-19-7	EC50/72h/algae =	no data available	no data available
Hydrofluoric acid 7664-39-3	EC50/72h/algae =	no data available	no data available

Components	Type	Toxicity to algae	Test Method
chromium(III) nitrate 13548-38-4	NOEC/algae =	no data available	no data available
Cobalt (II) Nitrate 10141-05-6	NOEC/algae =	no data available	no data available
Acetic acid 64-19-7	NOEC/algae =	no data available	no data available
Hydrofluoric acid 7664-39-3	NOEC/algae =	no data available	no data available

Components	Type	Water Flea	Test Method
chromium(III) nitrate 13548-38-4	EC50/48h/daphnia =	no data available	no data available
Cobalt (II) Nitrate 10141-05-6	EC50/48h/daphnia =	no data available	no data available
Acetic acid 64-19-7	EC50/48h/daphnia =	24 h EC50 = 95 mg/L	no data available
Hydrofluoric acid 7664-39-3	EC50/48h/daphnia =	48 h EC50 = 270 mg/L	no data available

Components	Type	Toxicity to daphnia	Test Method
chromium(III) nitrate 13548-38-4	NOEC/Daphnia	no data available	no data available
Cobalt (II) Nitrate 10141-05-6	NOEC/Daphnia	no data available	no data available
Acetic acid 64-19-7	NOEC/Daphnia	no data available	no data available
Hydrofluoric acid 7664-39-3	NOEC/Daphnia	no data available	no data available

Components	Type	Toxicity to bacteria	Test Method
chromium(III) nitrate 13548-38-4	NOEC/Bacteria	no data available	no data available

Cobalt (II) Nitrate 10141-05-6	NOEC/Bacteria	no data available	no data available
Acetic acid 64-19-7	NOEC/Bacteria	no data available	no data available
Hydrofluoric acid 7664-39-3	NOEC/Bacteria	no data available	no data available

Components	Log Pow
chromium(III) nitrate 13548-38-4	No data available
Cobalt (II) Nitrate 10141-05-6	2
Acetic acid 64-19-7	-0.17
Hydrofluoric acid 7664-39-3	-1.4

12.2. Persistence and degradability

No information available

12.3. Bioaccumulative potential

Not determined.

12.4. Mobility in soil

No information available

12.5. Results of PBT and vPvB assessment

No information available

12.6. Other adverse effects

Do not allow contact with soil, surface or ground water

SECTION 13: DISPOSAL CONSIDERATIONS

13.1. Waste treatment methods

Waste from residues / unused products:

Dispose of in accordance with local regulations. Waste codes should be assigned by the user based on the application for which the product was used. Do not dispose of waste into sewer..

Contaminated packaging:

Empty containers should be taken for local recycling, recovery or waste disposal

SECTION 14: TRANSPORT INFORMATION

14.1. UN-Number

2922

14.2. UN proper shipping name

CORROSIVE LIQUID, TOXIC, N.O.S.

14.3. Transport hazard class(es)

8

Subsidiary Risk: 6.1

14.4. Packing group

SECTION 14: TRANSPORT INFORMATION

II

14.4.1. Further information for transport

IMDG
UN-No (IMO/IMDG): UN2922
Proper shipping name (IMDG): CORROSIVE LIQUID, TOXIC, N.O.S.
Technical Name (IMDG): hydrofluoric acid,cobalt(II) nitrate
Ems no.: F-A,S-B
Hazard Class (IMO/IMDG): 8
Subsidiary Class (IMO/IMDG): 6.1
Packing group (IMO/IMDG): II
Marine pollutant: P
Hazard Label (IMO/IMDG): 8
Hazard Label II (IMO/IMDG): 6.1

ADR/RID
UN-No: 2922
Proper shipping name: CORROSIVE LIQUID, TOXIC, N.O.S.
Technical Name (ADR): hydrofluoric acid,cobalt(II) nitrate
Hazard Class: 8
Subsidiary Risk: 6.1
Packing group: II
Classification Code: CT1
Kemler Number (ADR): 86
ADR/RID-Labels 8
Hazard Label II (ADR): 6.1

ICAO/IATA
Hazard Label: AIR TRANSPORT NOT ALLOWED

14.5. Environmental hazards:
 Marine pollutant

14.6. Special precautions for user
 Observe label precautions

14.7. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code:
 None known

SECTION 15: REGULATORY INFORMATION

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture
 Take note of Dir 94/33/EC on the protection of young people at work
 Take note of Directive 96/82/EC on the control of major-accident hazards involving dangerous substances

Further information:

This product contains an ingredient according to the candidate list of Annex XIV of the REACH Regulation 1907/2006/EC

German storage class (VCI) 6.1A
 Water contaminating class (Germany) 2

Substances currently restricted by WEEE/RoHS (European Directive 2012/19/EC , 2011/65/EC) or ELV (European Directive 2000/53/EC):

PBDE	PBB	CrVI	Hg	Pb	Cd
-	-	-	-	-	-

Please note: Current legislation restricting the use of certain substances applies to „homogeneous material“ in finished articles being supplied to the market. Substances deposited during surface finishing may have a composition (weight percent) higher than the weight percent of the substance in the operating solution from which the deposit is made. Atotech encourages its customers to implement systems to ensure their finished products comply with the regulations in force.

All of the components in this product are on or exempt from the following inventories:
US TSCA, CANADA DSL / NDSL, Europe (EINECS/ELINCS/NLP), Australia, Korea, China, Japan, Philippines.

International Inventory Legend

TSCA: US - Toxic Substance Control Act

DSL: Canada - Domestic Substance List

NDSL: Canada - Non-Domestic Substance List

IECSC: China - Inventory of Existing Chemical Substances China

EINECS: EU Inventory of Existing Commercial Chemical Substances

ELINCS: EU List of Notified Chemical Substances

ECL: Korea - Existing Chemicals List

AICS: Australia - Inventory of Chemical Substances

ENCS: Japan - Existing and New Chemical Substances

PICCS: Philippines - Inventory of Chemicals and Chemical Substances

15.2. Chemical Safety Assessment

None known

SECTION 16: OTHER INFORMATION

This safety datasheet has been prepared according to European Union legislation:

REGULATION (EC) No 453/2010

Text of R phrases mentioned in Section 3:

- R 8 - Contact with combustible material may cause fire.
- R10 - Flammable.
- R34 - Causes burns.
- R35 - Causes severe burns.
- R49 - May cause cancer by inhalation.
- R60 - May impair fertility.
- R68 - Possible risks of irreversible effects.
- R42/43 - May cause sensitization by inhalation and skin contact.
- R50/53 - Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
- R26/27/28 - Very toxic by inhalation, in contact with skin and if swallowed.

Hazard statements:

SECTION 16: OTHER INFORMATION

- H226 - Flammable liquid and vapour
- H272 - May intensify fire; oxidiser
- H300 - Fatal if swallowed
- H302 - Harmful if swallowed
- H310 - Fatal in contact with skin
- H314 - Causes severe skin burns and eye damage
- H317 - May cause an allergic skin reaction
- H330 - Fatal if inhaled
- H334 - May cause allergy or asthma symptoms or breathing difficulties if inhaled
- H341 - Suspected of causing genetic defects
- H350i - May cause cancer by inhalation
- H360F - May damage fertility
- H400 - Very toxic to aquatic life
- H410 - Very toxic to aquatic life with long lasting effects

This data sheet contains changes from the previous version in section(s) - 2 , 6 , 9 , 10 , 15 and Annex (eSDS)

Revision Date: 29.01.2014

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