

## Safety Data Sheet

according to Regulation (EC) No 1907/2006

### Etching solution Wright for defect etching of silicon

Revision date: 31.05.2022

Product code: 26962

Page 1 of 16

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

### 1.1. Product identifier

Etching solution Wright for defect etching of silicon

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

#### Use of the substance/mixture

Laboratory chemicals

Industrial uses: Uses of substances as such or in preparations at industrial sites

Professional uses: Public domain (administration, education, entertainment, services, craftsmen)

#### Uses advised against

Do not use for private purposes (household).

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

Company name:	Fa. Bernd Kraft GmbH	
Street:	Stempelstraße 6	
Place:	D-47167 Duisburg	
Telephone:	0203/5194-0	Telefax: 0203/5194-290
e-mail:	info@berndkraft.de	
Contact person:	Abteilung Produktsicherheit	Telephone: 0203/5194-107/117
e-mail:	produktsicherheit@berndkraft.de	
Internet:	www.berndkraft.de	
Responsible Department:	Abteilung Produktsicherheit	

### 1.4. Emergency telephone number:

For Hazardous Materials [or Dangerous Goods] Incidents Spill, Leak, Fire, Exposure, or Accident Call CHEMTREC Day or Night Within USA and Canada: 1-800-424-9300 Outside USA and Canada: +1 703-741-5970 (collect calls accepted)

### Further Information

This product is a mixture. REACH Registration Number see section 3.

## SECTION 2: Hazards identification

### 2.1. Classification of the substance or mixture

#### Regulation (EC) No 1272/2008

Met. Corr. 1; H290

Acute Tox. 1; H310

Acute Tox. 2; H300

Acute Tox. 2; H330

Skin Corr. 1A; H314

Eye Dam. 1; H318

Resp. Sens. 1; H334

Skin Sens. 1; H317

Muta. 1B; H340

Carc. 1A; H350

Repr. 2; H361f

STOT SE 3; H335

STOT RE 2; H373

Aquatic Chronic 2; H411

Full text of hazard statements: see SECTION 16.

### 2.2. Label elements

#### Regulation (EC) No 1272/2008

**Etching solution Wright for defect etching of silicon**

Revision date: 31.05.2022

Product code: 26962

Page 2 of 16

**Hazard components for labelling**

chromium (VI) trioxide  
Hydrofluoric acid  
nitric acid  
acetic acid

**Signal word:** Danger

**Pictograms:**



**Hazard statements**

H290	May be corrosive to metals.
H300+H310+H330	Fatal if swallowed, in contact with skin or if inhaled.
H314	Causes severe skin burns and eye damage.
H334	May cause allergy or asthma symptoms or breathing difficulties if inhaled.
H317	May cause an allergic skin reaction.
H340	May cause genetic defects.
H350	May cause cancer.
H361f	Suspected of damaging fertility.
H335	May cause respiratory irritation.
H373	May cause damage to organs through prolonged or repeated exposure.
H411	Toxic to aquatic life with long lasting effects.

**Precautionary statements**

P201	Obtain special instructions before use.
P260	
P273	Avoid release to the environment.
P301+P310	IF SWALLOWED: Immediately call a POISON CENTER/doctor.
P303+P361+P353	IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower.
P305+P351+P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P405	Store locked up.
P501	Dispose of contents/container in accordance with local/regional/national/international regulations.

**Special labelling of certain mixtures**

Restricted to professional users.

**2.3. Other hazards**

No information available.

**SECTION 3: Composition/information on ingredients**

**3.2. Mixtures**

**Chemical characterization**

Mixtures in aqueous solution

**Safety Data Sheet**

according to Regulation (EC) No 1907/2006

**Etching solution Wright for defect etching of silicon**

Revision date: 31.05.2022

Product code: 26962

Page 3 of 16

**Hazardous components**

CAS No	Chemical name	Quantity
	EC No      Index No      REACH No	
	Classification (Regulation (EC) No 1272/2008)	
7664-39-3	hydrofluoric acid ... %	15 - < 20 %
	231-634-8      009-003-00-1	
	Acute Tox. 1, Acute Tox. 2, Acute Tox. 2, Skin Corr. 1A; H310 H330 H300 H314	
64-19-7	acetic acid	10 - < 15 %
	200-580-7      607-002-00-6      01-2119475328-30	
	Flam. Liq. 3, Skin Corr. 1A; H226 H314	
7697-37-2	nitric acid	10 - < 15 %
	231-714-2      007-030-00-3      01-2119487297-23	
	Ox. Liq. 3, Met. Corr. 1, Acute Tox. 3, Skin Corr. 1A; H272 H290 H331 H314 EUH071	
1333-82-0	chromium (VI) trioxide	5 - < 10 %
	215-607-8      024-001-00-0	
	Ox. Sol. 1, Carc. 1A, Muta. 1B, Repr. 2, Acute Tox. 2, Acute Tox. 3, Acute Tox. 3, Skin Corr. 1A, Resp. Sens. 1, Skin Sens. 1, STOT SE 3, STOT RE 1, Aquatic Acute 1, Aquatic Chronic 1; H271 H350 H340 H361f H330 H311 H301 H314 H334 H317 H335 H372 H400 H410	
10031-43-3	Copper(II) nitrate trihydrate	< 1 %
	01-2119969290-34	
	Ox. Sol. 2, Acute Tox. 4, Skin Irrit. 2, Eye Irrit. 2, Aquatic Acute 1, Aquatic Chronic 1; H272 H302 H315 H319 H400 H410	

Full text of H and EUH statements: see section 16.

**Specific Conc. Limits, M-factors and ATE**

CAS No	EC No	Chemical name	Quantity
		Specific Conc. Limits, M-factors and ATE	
7664-39-3	231-634-8	hydrofluoric acid ... %	15 - < 20 %
		inhalation: ATE = 0,5 mg/l (vapours); inhalation: ATE = 0,05 mg/l (dusts or mists); inhalation: LC50 = 1610 ppm (gases); dermal: ATE = 5 mg/kg; oral: ATE = 5 mg/kg Skin Corr. 1A; H314: >= 7 - 100 Skin Corr. 1B; H314: >= 1 - < 7 Eye Irrit. 2; H319: >= 0,1 - < 1	
64-19-7	200-580-7	acetic acid	10 - < 15 %
		inhalation: LC50 = 11,4 mg/l (vapours); oral: LD50 = 3310 mg/kg Skin Corr. 1A; H314: >= 90 - 100 Skin Corr. 1B; H314: >= 25 - < 90 Skin Irrit. 2; H315: >= 10 - < 25 Eye Irrit. 2; H319: >= 10 - < 25	
7697-37-2	231-714-2	nitric acid	10 - < 15 %
		inhalation: ATE 2,65 mg/kg (vapours) Ox. Liq. 3; H272: >= 65 - 100 Skin Corr. 1A; H314: >= 20 - 100 Skin Corr. 1B; H314: >= 5 - < 20	
1333-82-0	215-607-8	chromium (VI) trioxide	5 - < 10 %
		inhalation: ATE = 0,5 mg/l (vapours); inhalation: ATE = 0,05 mg/l (dusts or mists); dermal: LD50 = 57 mg/kg; oral: LD50 = 52 mg/kg STOT SE 3; H335: >= 1 - 100	
10031-43-3		Copper(II) nitrate trihydrate	< 1 %
		oral: ATE = 500 mg/kg	

**Further Information**

No data available

**SECTION 4: First aid measures**

**4.1. Description of first aid measures**

**General information**

First aider: Pay attention to self-protection! Remove affected person from the danger area and lay down. Put

## Safety Data Sheet

according to Regulation (EC) No 1907/2006

### Etching solution Wright for defect etching of silicon

Revision date: 31.05.2022

Product code: 26962

Page 4 of 16

victim at rest, cover with a blanket and keep warm.

#### After inhalation

Provide fresh air. No mouth-to-mouth or mouth-to-nose resuscitation. Use Ambu bag or ventilator. Call a physician immediately.

#### After contact with skin

After contact with skin, wash immediately with polyethylene glycol, followed by plenty of water. Take off immediately all contaminated clothing and wash it before reuse. Call a physician immediately.

#### After contact with eyes

In case of contact with eyes flush immediately with plenty of flowing water for 10 to 15 minutes holding eyelids apart and consult an ophthalmologist.

#### After ingestion

Never give anything by mouth to an unconscious person or a person with cramps. Rinse mouth immediately and drink plenty of water. Do NOT induce vomiting. Adverse human health effects and symptoms: Gastric perforation. Call a physician immediately.

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

No information available.

## SECTION 5: Firefighting measures

### **5.1. Extinguishing media**

#### **Suitable extinguishing media**

Co-ordinate fire-fighting measures to the fire surroundings.

#### **Unsuitable extinguishing media**

no restriction

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

Hazardous combustion products

In case of fire may be liberated:

Nitrogen oxides (NO<sub>x</sub>)

Metal oxide smoke, toxic

Hydrogen fluoride

### **5.3. Advice for firefighters**

In case of fire: Wear self-contained breathing apparatus.

In case of fire and/or explosion do not breathe fumes.

Avoid contact with skin, eyes and clothes.

#### **Additional information**

Collect contaminated fire extinguishing water separately. Do not allow entering drains or surface water.

Move undamaged containers from immediate hazard area if it can be done safely.

Use water spray jet to protect personnel and to cool endangered containers.

## SECTION 6: Accidental release measures

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

#### **General advice**

Corrosive to metals.

#### **For non-emergency personnel**

Provide adequate ventilation.

Use personal protection equipment.

Avoid contact with skin, eyes and clothes.

Remove persons to safety.

Emergency procedures

Do not breathe dust/fume/gas/mist/vapours/spray.

**Etching solution Wright for defect etching of silicon**

Revision date: 31.05.2022

Product code: 26962

Page 5 of 16

**For emergency responders**

Precautionary statements For emergency responders : Personal protection equipment: see section 8

**6.2. Environmental precautions**

Do not allow to enter into surface water or drains.

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

**For containment**

Cover drains.

Prevent spread over a wide area (e.g. by containment or oil barriers).

Collect in closed and suitable containers for disposal.

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

**For cleaning up**

Clean contaminated articles and floor according to the environmental legislation.

**Other information**

Provide adequate ventilation.

Do not breathe dust/fume/gas/mist/vapours/spray.

Wear breathing apparatus if exposed to vapours/dusts/aerosols.

**6.4. Reference to other sections**

Safe handling: see section 7

Personal protection equipment: see section 8

Disposal: see section 13

**SECTION 7: Handling and storage**

**7.1. Precautions for safe handling**

**Advice on safe handling**

Read label before use. Handle and open container with care.

When using do not eat, drink, smoke, sniff. Use personal protection equipment.

Provide adequate ventilation. Avoid contact with skin, eyes and clothes.

Do not breathe dust/fume/gas/mist/vapours/spray. If handled uncovered, arrangements with local exhaust ventilation have to be used.

**Advice on protection against fire and explosion**

Usual measures for fire prevention.

In case of warming: Vapours can form explosive mixtures with air.

**Advice on general occupational hygiene**

Remove contaminated, saturated clothing immediately. Draw up and observe skin protection programme.

Wash hands and face before breaks and after work and take a shower if necessary. When using do not eat or drink.

**Further information on handling**

Draw up and observe skin protection programme.

Wash hands and face before breaks and after work and take a shower if necessary.

Take off immediately all contaminated clothing and wash it before reuse.

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

**Requirements for storage rooms and vessels**

Keep container tightly closed.

Keep locked up.

Store in a place accessible by authorized persons only.

Provide adequate ventilation as well as local exhaustion at critical locations.

Unsuitable container/equipment material:

Metal.

Glass

**Etching solution Wright for defect etching of silicon**

Revision date: 31.05.2022

Product code: 26962

Page 6 of 16

**Further information on storage conditions**

Store in a dry place.

Store in a well-ventilated place.

**7.3. Specific end use(s)**

Laboratory chemicals

**SECTION 8: Exposure controls/personal protection**

**8.1. Control parameters**

**Occupational exposure limits**

CAS No	Substance	ppm	mg/m <sup>3</sup>	fib/cm <sup>3</sup>	Category	Origin
64-19-7	Acetic acid	10	25		TWA (8 h)	
		20	50		STEL (15 min)	
7664-39-3	Hydrogen fluoride (as F)	1.8	1.5		TWA (8 h)	
		3	2.5		STEL (15 min)	
7697-37-2	Nitric acid	1	2.6		STEL (15 min)	

**Biological limit values**

CAS No	Substance	Parameter	Value	Test material	Sampling time
7664-39-3	Hydrogen fluoride	Fluoride	2 mg/L	Urine	Prior to shift

**DNEL/DMEL values**

CAS No	Substance	DNEL type	Exposure route	Effect	Value
64-19-7	acetic acid	Worker DNEL, long-term	inhalation	local	25 mg/m <sup>3</sup>
		Worker DNEL, acute	inhalation	local	25 mg/m <sup>3</sup>
		Consumer DNEL, long-term	inhalation	local	25 mg/m <sup>3</sup>
		Consumer DNEL, acute	inhalation	local	25 mg/m <sup>3</sup>

**Etching solution Wright for defect etching of silicon**

Revision date: 31.05.2022

Product code: 26962

Page 7 of 16

**PNEC values**

CAS No	Substance	Value
Environmental compartment		
64-19-7	acetic acid	
Freshwater		3,058 mg/l
Freshwater (intermittent releases)		30,58 mg/l
Marine water		0,306 mg/l
Freshwater sediment		11,36 mg/kg
Marine sediment		1,136 mg/kg
Micro-organisms in sewage treatment plants (STP)		85 mg/l
Soil		0,47 mg/kg
1333-82-0	chromium (VI) trioxide	
Freshwater		0,003 mg/l
Marine water		0,003 mg/l
Freshwater sediment		0,15 mg/kg
Secondary poisoning		17000000 mg/kg
Micro-organisms in sewage treatment plants (STP)		0,21 mg/l
Soil		0,031 mg/kg
10031-43-3	Copper(II) nitrate trihydrate	
Freshwater		0,0078 mg/l
Marine water		0,0052 mg/l
Freshwater sediment		87 mg/kg
Marine sediment		676 mg/kg
Micro-organisms in sewage treatment plants (STP)		0,23 mg/l
Soil		65 mg/kg

**8.2. Exposure controls**

**Appropriate engineering controls**

If handled uncovered, arrangements with local exhaust ventilation have to be used. Do not breathe gas/fumes/vapour/spray.

**Individual protection measures, such as personal protective equipment**

**Eye/face protection**

Suitable eye protection: goggles.

**Hand protection**

When handling with chemical substances, protective gloves must be worn with the CE-label including the four control digits. The quality of the protective gloves resistant to chemicals must be chosen as a function of the specific working place concentration and quantity of hazardous substances. 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.

Protective gloves are recommended Company KCL GmbH, D-36124 Eichenzell, email: [vertrieb@kcl.de](mailto:vertrieb@kcl.de) With specification (test according to EN374):

By long-term hand contact: No data available

By short-term hand contact

**Etching solution Wright for defect etching of silicon**

Revision date: 31.05.2022

Product code: 26962

Page 8 of 16

Trade name/designation: KCL 897 Butoject®  
 Recommended material: Butyl caoutchouc (butyl rubber) 0,3 mm  
 Wearing time with occasional contact (splashes): > 120 min

The breakthrough times stated above were determined by KCL in laboratory tests acc. to EN374 with samples of the recommended glove types. This recommendation applies only to the product stated in the safety data sheet (>, <) supplied by us and for the designated use. When dissolving in or mixing with other substances and under conditions deviating from those stated in EN374 please contact the supplier of CE-approved gloves (e.g. KCL GmbH, D-36124 Eichenzell, Internet: www.kcl.de).

**Skin protection**

Wear suitable protective clothing. Take off immediately all contaminated clothing.  
 Wash hands before breaks and after work.

**Respiratory protection**

Wear breathing apparatus if exposed to vapours/dusts/aerosols.

**Environmental exposure controls**

Do not allow to enter into surface water or drains.

**SECTION 9: Physical and chemical properties**

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

Physical state: Liquid  
 Colour: clear  
 Odour: No data available  
 Odour threshold: No data available

**Changes in the physical state**

Melting point/freezing point: No data available  
 Boiling point or initial boiling point and boiling range: No data available  
 Sublimation point: No data available  
 Softening point: No data available  
 Pour point: No data available  
 No data available:  
 Flash point: No data available

**Flammability**

Solid/liquid: not applicable  
 Gas: not applicable

**Explosive properties**

No data available

Lower explosion limits: not determined  
 Upper explosion limits: not determined  
 Auto-ignition temperature: No data available

**Self-ignition temperature**

Solid: not applicable  
 Gas: not applicable

Decomposition temperature: not determined

pH-Value: acidic

Viscosity / dynamic: No data available

Viscosity / kinematic: No data available



**Etching solution Wright for defect etching of silicon**

Revision date: 31.05.2022

Product code: 26962

Page 9 of 16

Flow time:	No data available
Water solubility:	No data available
<b>Solubility in other solvents</b> not determined	
Partition coefficient n-octanol/water:	not determined
Vapour pressure:	No data available
Vapour pressure:	No data available
Density:	1,16000 g/cm <sup>3</sup>
Bulk density:	No data available
Relative vapour density:	not determined

**9.2. Other information**

**Information with regard to physical hazard classes**

Sustaining combustion:	No data available
Oxidizing properties Not oxidising.	

**Other safety characteristics**

Solvent separation test:	No data available
Solvent content:	No data available
Solid content:	No data available
Evaporation rate:	not determined

**Further Information**

Corrosive to metals.

**SECTION 10: Stability and reactivity**

**10.1. Reactivity**

Corrosive to metals.

**10.2. Chemical stability**

The product is stable under storage at normal ambient temperatures.

**10.3. Possibility of hazardous reactions**

Alkali (lye)

**10.4. Conditions to avoid**

none

**10.5. Incompatible materials**

Metal

Glass

The product develops hydrogen in an aqueous solution in contact with metals.

**10.6. Hazardous decomposition products**

In case of fire may be liberated:

SECTION 5: Firefighting measures

**Further information**

No data available

**SECTION 11: Toxicological information**

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

**Toxicokinetics, metabolism and distribution**

There are no data available on the preparation/mixture itself.

**Etching solution Wright for defect etching of silicon**

Revision date: 31.05.2022

Product code: 26962

Page 10 of 16

**Acute toxicity**

Fatal in contact with skin.  
Fatal if swallowed.  
Fatal if inhaled.

CAS No	Chemical name				
	Exposure route	Dose	Species	Source	Method
7664-39-3	hydrofluoric acid ... %				
	oral	ATE 5 mg/kg			
	dermal	ATE 5 mg/kg			
	inhalation vapour	ATE 0,5 mg/l			
	inhalation dust/mist	ATE 0,05 mg/l			
	inhalation (1 h) gas	LC50 1610 ppm	Rat		
64-19-7	acetic acid				
	oral	LD50 3310 mg/kg	Rat	J Ind Hyg Toxicol, Vol 23, PP 78-82 (194)	The sodium salt of acetic acid was admin
	inhalation (4 h) vapour	LC50 11,4 mg/l	Rat	Study report (1980)	OECD Guideline 403
7697-37-2	nitric acid				
	inhalation vapour	ATE 2,65 mg/kg			
1333-82-0	chromium (VI) trioxide				
	oral	LD50 52 mg/kg	Rat	Other company data (1987)	OECD Guideline 401
	dermal	LD50 57 mg/kg	Rabbit	Other company data (1987)	OECD Guideline 402
	inhalation vapour	ATE 0,5 mg/l			
	inhalation dust/mist	ATE 0,05 mg/l			
10031-43-3	Copper(II) nitrate trihydrate				
	oral	ATE 500 mg/kg			

**Irritation and corrosivity**

Causes severe skin burns and eye damage.  
Causes serious eye damage.  
Following ingestion Gastric perforation  
Irritating to respiratory system.

**Sensitising effects**

May cause allergy or asthma symptoms or breathing difficulties if inhaled. (chromium (VI) trioxide)  
May cause an allergic skin reaction. (chromium (VI) trioxide)

**Carcinogenic/mutagenic/toxic effects for reproduction**

May cause genetic defects. (chromium (VI) trioxide)  
May cause cancer. (chromium (VI) trioxide)  
Suspected of damaging fertility. (chromium (VI) trioxide)

**STOT-single exposure**

May cause respiratory irritation. (chromium (VI) trioxide)

**STOT-repeated exposure**

May cause damage to organs through prolonged or repeated exposure. (chromium (VI) trioxide)

**Aspiration hazard**

Based on available data, the classification criteria are not met.

**Etching solution Wright for defect etching of silicon**

Revision date: 31.05.2022

Product code: 26962

Page 11 of 16

**Specific effects in experiment on an animal**

There are no data available on the preparation/mixture itself.

**Additional information on tests**

There are no data available on the preparation/mixture itself.

**Practical experience**

There are no data available on the preparation/mixture itself.

**11.2. Information on other hazards**

**Other information**

There are no data available on the preparation/mixture itself.

**Further information**

There are no data available on the preparation/mixture itself.

**SECTION 12: Ecological information**

**12.1. Toxicity**

Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

**Etching solution Wright for defect etching of silicon**

Revision date: 31.05.2022

Product code: 26962

Page 12 of 16

CAS No	Chemical name					
	Aquatic toxicity	Dose	[h]   [d]	Species	Source	Method
64-19-7	acetic acid					
	Acute fish toxicity	LC50 > 1000 mg/l	96 h	Oncorhynchus mykiss	Study report (2005)	other: SOP E257
	Acute algae toxicity	ErC50 > 1000 mg/l	72 h	Skeletonema costatum	Study report (2005)	ISO 10253
	Acute crustacea toxicity	EC50 > 1000 mg/l	48 h	Daphnia magna	Study report (1990)	OECD Guideline 202
7697-37-2	nitric acid					
	Acute fish toxicity	LC50 1559 mg/l	96 h	Topeka shiner	Environmental Toxicology and Chemistry,	other: ASTM E729-26
	Fish toxicity	NOEC 268 mg/l	30 d	juvenile Topeka shiner and with juvenile Fathead m	Study report (2009)	Growth tests estimated the test chemical
	Algae toxicity	NOEC > 419 mg/l	10 d	several benthic diatoms; see results	Marine Biology 43:307-315 (1977)	Ten cultures of benthic diatoms were iso
	Acute bacteria toxicity	(EC50 > 1000 mg/l)	3 h	Activated sludge	Study report (2008)	OECD Guideline 209
10031-43-3	Copper(II) nitrate trihydrate					
	Acute fish toxicity	LC50 0,193 mg/l	96 h	Pimephales promelas	Study report (1996)	measurements were conducted by standard
	Acute algae toxicity	ErC50 0,152 mg/l	72 h	Pseudokirchneriella subcapitata	Publication (2005)	OECD Guideline 201
	Acute crustacea toxicity	EC50 0,007 mg/l	48 h	Daphnia magna	Study report (1978)	- Test were conducted on Daphnia magna t
	Fish toxicity	NOEC 0,123 mg/l	12 d	Atherinops affinis	Mar. Environ. Res. 31: 17-35 (1991)	Three tests are reported, designed to de
	Algae toxicity	NOEC 0,0102 mg/l	19 d	other aquatic plant: giant kelp Macrocystis pyrife	Mar. Ecol. Prog. Ser. 68: 147 - 156 (199)	Tests were conducted to determine the ef
	Crustacea toxicity	NOEC 0,033 mg/l	14 d	Penaeus mergulensis and Penaeus monodon	Bull. Environ. Contain. Toxicol. (1995)	The effects of dissolved copper on the g

**12.2. Persistence and degradability**

The product has not been tested.

**12.3. Bioaccumulative potential**

The product has not been tested.

**Partition coefficient n-octanol/water**

CAS No	Chemical name	Log Pow
64-19-7	acetic acid	-0,17

**BCF**

CAS No	Chemical name	BCF	Species	Source
64-19-7	acetic acid	3,16	fish	Environ. Toxicol. Ch
10031-43-3	Copper(II) nitrate trihydrate	0,02 - 20	Crangon crangon	Symp. Biologica. Hun

**Etching solution Wright for defect etching of silicon**

Revision date: 31.05.2022

Product code: 26962

Page 13 of 16

**12.4. Mobility in soil**

The product has not been tested.

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

The substances in the mixture do not meet the PBT/vPvB criteria according to REACH, annex XIII.

The product has not been tested.

**12.6. Endocrine disrupting properties**

This product does not contain a substance that has endocrine disrupting properties with respect to non-target organisms as no components meets the criteria.

**12.7. Other adverse effects**

Discharge into the environment must be avoided.

**Further information**

Do not allow to enter into surface water or drains.

**SECTION 13: Disposal considerations**

**13.1. Waste treatment methods**

**Disposal recommendations**

Waste disposal according to directive 2008/98/EC, covering waste and dangerous waste.

Send to a physico-chemical treatment facility under observation of official regulations.

Do not empty into drains.

**Contaminated packaging**

Handle contaminated packages in the same way as the substance itself.

The allocation of waste identity numbers/waste descriptions must be carried out according to the EEC, specific to the industry and process.

Dispose of waste according to "Kreislaufwirtschafts- und Abfallgesetz (KrW-/AbfG)".

**SECTION 14: Transport information**

**Land transport (ADR/RID)**

<b>14.1. UN number or ID number:</b>	UN 2922
<b>14.2. UN proper shipping name:</b>	CORROSIVE LIQUID, TOXIC, N.O.S. (nitric acid, Hydrofluoric acid)
<b>14.3. Transport hazard class(es):</b>	8
<b>14.4. Packing group:</b>	II
Hazard label:	8+6.1
Classification code:	CT1
Special Provisions:	274
Limited quantity:	1 L
Excepted quantity:	E2
Transport category:	2
Hazard No:	86
Tunnel restriction code:	E

**Inland waterways transport (ADN)**

<b>14.1. UN number or ID number:</b>	UN 2922
<b>14.2. UN proper shipping name:</b>	CORROSIVE LIQUID, TOXIC, N.O.S. (nitric acid, Hydrofluoric acid)
<b>14.3. Transport hazard class(es):</b>	8
<b>14.4. Packing group:</b>	II
Hazard label:	8+6.1
Classification code:	CT1
Special Provisions:	274 802
Limited quantity:	1 L
Excepted quantity:	E2

**Marine transport (IMDG)**

**Safety Data Sheet**

according to Regulation (EC) No 1907/2006

**Etching solution Wright for defect etching of silicon**

Revision date: 31.05.2022

Product code: 26962

Page 14 of 16

<b>14.1. UN number or ID number:</b>	UN 2922
<b>14.2. UN proper shipping name:</b>	CORROSIVE LIQUID, TOXIC, N.O.S. (Nitric acid, Hydrofluoric acid)
<b>14.3. Transport hazard class(es):</b>	8
<b>14.4. Packing group:</b>	II
Hazard label:	8+6.1
Special Provisions:	274
Limited quantity:	1 L
Excepted quantity:	E2
EmS:	F-A, S-B

**Air transport (ICAO-TI/IATA-DGR)**

<b>14.1. UN number or ID number:</b>	UN 2922
<b>14.2. UN proper shipping name:</b>	CORROSIVE LIQUID, TOXIC, N.O.S. (Nitric acid, Hydrofluoric acid)
<b>14.3. Transport hazard class(es):</b>	8
<b>14.4. Packing group:</b>	II
Hazard label:	8+6.1
Special Provisions:	A3 A803
Limited quantity Passenger:	0.5 L
Passenger LQ:	Y840
Excepted quantity:	E2
IATA-packing instructions - Passenger:	851
IATA-max. quantity - Passenger:	1 L
IATA-packing instructions - Cargo:	855
IATA-max. quantity - Cargo:	30 L

**14.5. Environmental hazards**

ENVIRONMENTALLY HAZARDOUS:	Yes
Danger releasing substance:	chromium trioxide

**14.6. Special precautions for user**

Warning: Toxic. strongly corrosive.

**14.7. Maritime transport in bulk according to IMO instruments**

not applicable

**SECTION 15: Regulatory information**

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

**EU regulatory information**

Authorisations (REACH, annex XIV):  
Substances of very high concern, SVHC (REACH, article 59):  
chromium (VI) trioxide

Restrictions on use (REACH, annex XVII):

Entry 3, Entry 28, Entry 40, Entry 75

Information according to 2012/18/EU (SEVESO III): H1 ACUTE TOXIC

Additional information: E2

**National regulatory information**

Employment restrictions: Observe restrictions to employment for juveniles according to the 'juvenile work protection guideline' (94/33/EC). Observe employment restrictions under the Maternity Protection Directive (92/85/EEC) for expectant or nursing mothers.

Water hazard class (D): 3 - highly hazardous to water

Skin resorption/Sensitization: Permeates easily through outer skin and causes poisoning. Causes allergic hypersensitivity reactions.

**Safety Data Sheet**

according to Regulation (EC) No 1907/2006

**Etching solution Wright for defect etching of silicon**

Revision date: 31.05.2022

Product code: 26962

Page 15 of 16

**SECTION 16: Other information****Changes**

This data sheet contains changes from the previous version in section(s): 1,3,7,8,9,11,12,13,14,15.

**Abbreviations and acronyms**

ADR: Accord européen sur le transport des marchandises dangereuses par Route  
(European Agreement concerning the International Carriage of Dangerous Goods by Road)  
IMDG: International Maritime Code for Dangerous Goods  
IATA: International Air Transport Association  
GHS: Globally Harmonized System of Classification and Labelling of Chemicals  
EINECS: European Inventory of Existing Commercial Chemical Substances  
ELINCS: European List of Notified Chemical Substances  
CAS: Chemical Abstracts Service  
LC50: Lethal concentration, 50%  
LD50: Lethal dose, 50%

**Relevant H and EUH statements (number and full text)**

H226	Flammable liquid and vapour.
H271	May cause fire or explosion; strong oxidiser.
H272	May intensify fire; oxidiser.
H290	May be corrosive to metals.
H300	Fatal if swallowed.
H300+H310+H330	Fatal if swallowed, in contact with skin or if inhaled.
H301	Toxic if swallowed.
H302	Harmful if swallowed.
H310	Fatal in contact with skin.
H311	Toxic 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.
H330	Fatal if inhaled.
H331	Toxic if inhaled.
H334	May cause allergy or asthma symptoms or breathing difficulties if inhaled.
H335	May cause respiratory irritation.
H340	May cause genetic defects.
H350	May cause cancer.
H361f	Suspected of damaging fertility.
H372	Causes damage to organs through prolonged or repeated exposure.
H373	May cause damage to organs through prolonged or repeated exposure.
H400	Very toxic to aquatic life.
H410	Very toxic to aquatic life with long lasting effects.
H411	Toxic to aquatic life with long lasting effects.
EUH071	Corrosive to the respiratory tract.

**Further Information**

The above information describes exclusively the safety requirements of the product and is based on our present-day knowledge. The information is intended to give you advice about the safe handling of the product named in this safety data sheet, for storage, processing, transport and disposal. The information cannot be transferred to other products. In the case of mixing the product with other products or in the case of processing, the information on this safety data sheet is not necessarily valid for the new made-up material.

## Safety Data Sheet

according to Regulation (EC) No 1907/2006

### Etching solution Wright for defect etching of silicon

Revision date: 31.05.2022

Product code: 26962

Page 16 of 16

*(The data for the hazardous ingredients were taken respectively from the last version of the sub-contractor's safety data sheet.)*