

# SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006



## KU F 280 Copper Powder

Version 2.1      Revision Date: 22.04.2020      SDS Number: 102000028913      Print Date: 28.12.2020  
Date of first issue: 08.02.2018

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

#### 1.1 Product identifier

Trade name : KU F 280 Copper Powder  
Product code : 060504VZ0

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

Use of the Substance/Mixture : Colouring agents, pigments

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

Company :  
  
E-mail address of person responsible for the SDS : msds.eckart@altana.com

#### 1.4 Emergency telephone number

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### SECTION 2: Hazards identification

#### 2.1 Classification of the substance or mixture

##### Classification (REGULATION (EC) No 1272/2008)

Acute toxicity, Category 4	H302: Harmful if swallowed.
Acute toxicity, Category 3	H331: Toxic if inhaled.
Eye irritation, Category 2	H319: Causes serious eye irritation.
Short-term (acute) aquatic hazard, Category 1	H400: Very toxic to aquatic life.
Long-term (chronic) aquatic hazard, Category 1	H410: Very toxic to aquatic life with long lasting effects.
Flammable solids, Category 1	H228: Flammable solid.

#### 2.2 Label elements

##### Labelling (REGULATION (EC) No 1272/2008)


# SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006



## KU F 280 Copper Powder

Version 2.1      Revision Date: 22.04.2020      SDS Number: 102000028913      Print Date: 28.12.2020  
Date of first issue: 08.02.2018

Hazard pictograms : 

Signal word : Danger

Hazard statements : H228 Flammable solid.  
H302 Harmful if swallowed.  
H319 Causes serious eye irritation.  
H331 Toxic if inhaled.  
H410 Very toxic to aquatic life with long lasting effects.

Precautionary statements : **Prevention:**  
P261 Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray.  
P273 Avoid release to the environment.  
P280 Wear eye protection/ face protection.  
**Response:**  
P370 + P378 In case of fire: Use for extinction: Special powder for metal fires.  
P370 + P378 In case of fire: Use for extinction: Dry sand.  
P304 + P340 + P311 IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER/doctor.  
P337 + P313 If eye irritation persists: Get medical advice/ attention.  
**Storage:**  
P403 + P233 Store in a well-ventilated place. Keep container tightly closed.

Hazardous components which must be listed on the label:  
copper flakes (coated with aliphatic acid)

### 2.3 Other hazards

This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

## SECTION 3: Composition/information on ingredients

### 3.1 Substances

Substance name : copper flakes (coated with aliphatic acid)

#### Hazardous components

Chemical name	CAS-No. EC-No. Index-No. Registration number	Classification REGULATION (EC) No 1272/2008	Concentration (% w/w)
copper flakes (coated with	Not Assigned	Acute Tox. 4; H302	>= 50 - <= 100

# SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006



## KU F 280 Copper Powder

Version 2.1      Revision Date: 22.04.2020      SDS Number: 102000028913      Print Date: 28.12.2020  
Date of first issue: 08.02.2018

aliphatic acid)	029-019-01-X	Acute Tox. 3; H331 Eye Irrit. 2; H319 Aquatic Acute 1; H400 Aquatic Chronic 1; H410
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For explanation of abbreviations see section 16.

### SECTION 4: First aid measures

#### 4.1 Description of first aid measures

- General advice : Move the victim to fresh air.  
Do not leave the victim unattended.  
Move out of dangerous area.  
Show this safety data sheet to the doctor in attendance.
- If inhaled : If unconscious, place in recovery position and seek medical advice.  
If symptoms persist, call a physician.
- In case of skin contact : Wash off immediately with soap and plenty of water.  
If on skin, rinse well with water.  
If on clothes, remove clothes.
- In case of eye contact : Immediately flush eye(s) with plenty of water.  
Remove contact lenses.  
Keep eye wide open while rinsing.  
If eye irritation persists, consult a specialist.
- If swallowed : Keep respiratory tract clear.  
Do not give milk or alcoholic beverages.  
Never give anything by mouth to an unconscious person.  
If symptoms persist, call a physician.

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

- Risks : Harmful if swallowed.  
Causes serious eye irritation.  
Toxic if inhaled.

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

This information is not available.

# SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006



## KU F 280 Copper Powder

Version 2.1      Revision Date: 22.04.2020      SDS Number: 102000028913      Print Date: 28.12.2020  
Date of first issue: 08.02.2018

---

### SECTION 5: Firefighting measures

#### 5.1 Extinguishing media

Suitable extinguishing media : Special powder against metal fire  
Dry sand  
ABC powder

Unsuitable extinguishing media : Water  
High volume water jet

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

Specific hazards during firefighting : Do not allow run-off from fire fighting to enter drains or water courses.

#### 5.3 Advice for firefighters

Special protective equipment for firefighters : Wear self-contained breathing apparatus for firefighting if necessary.

Further information : Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Standard procedure for chemical fires.

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

Collect contaminated fire extinguishing water separately. This must not be discharged into drains.

Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.

Use a water spray to cool fully closed containers.

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### SECTION 6: Accidental release measures

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

Personal precautions : Use personal protective equipment.  
Evacuate personnel to safe areas.  
Use personal protective equipment.  
Avoid dust formation.  
Avoid breathing dust.  
Remove all sources of ignition.

#### 6.2 Environmental precautions

Environmental precautions : Prevent product from entering drains.  
Prevent further leakage or spillage if safe to do so.  
If the product contaminates rivers and lakes or drains inform respective authorities.

# SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006



## KU F 280 Copper Powder

Version	Revision Date:	SDS Number:	Print Date: 28.12.2020
2.1	22.04.2020	102000028913	Date of first issue: 08.02.2018

---

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

- Methods for cleaning up : Use mechanical handling equipment.
- Pick up and transfer to properly labelled containers.
- Keep in suitable, closed containers for disposal.

### 6.4 Reference to other sections

For personal protection see section 8.

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## SECTION 7: Handling and storage

### 7.1 Precautions for safe handling

- Advice on safe handling : Avoid creating dust.  
Routine housekeeping should be instituted to ensure that dusts do not accumulate on surfaces.
- Avoid formation of respirable particles.  
Do not breathe vapours/dust.  
Avoid contact with skin and eyes.  
For personal protection see section 8.  
Smoking, eating and drinking should be prohibited in the application area.  
Dispose of rinse water in accordance with local and national regulations.
- Advice on protection against fire and explosion : Normal measures for preventive fire protection.
- Avoid dust formation. Keep away from open flames, hot surfaces and sources of ignition.
- Hygiene measures : General industrial hygiene practice. Do not smoke. Wash hands before breaks and at the end of workday. Keep away from food and drink. Keep away from tobacco products.
- When using do not eat or drink. When using do not smoke. Wash hands before breaks and at the end of workday.

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

- Requirements for storage areas and containers : Electrical installations / working materials must comply with the technological safety standards.
- Keep away from sources of ignition - No smoking. Do not store near combustible materials. Keep containers tightly closed in a cool, well-ventilated place. To maintain product quality, do not store in heat or direct sunlight.
- No smoking. Keep container tightly closed in a dry and well-ventilated place. Electrical installations / working materials
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# SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006



## KU F 280 Copper Powder

Version 2.1      Revision Date: 22.04.2020      SDS Number: 102000028913      Print Date: 28.12.2020  
Date of first issue: 08.02.2018

must comply with the technological safety standards.

Further information on storage conditions : Protect from humidity and water.

Advice on common storage : Keep away from oxidizing agents, strongly alkaline and strongly acid materials in order to avoid exothermic reactions. Do not store together with oxidizing and self-igniting products.

Dampness : Keep in a dry, cool and well-ventilated place.

Further information on storage stability : Keep in a dry place. No decomposition if stored and applied as directed.

### 7.3 Specific end use(s)

This information is not available.

## SECTION 8: Exposure controls/personal protection

### 8.1 Control parameters

#### Occupational Exposure Limits

Components	CAS-No.	Value type (Form of exposure)	Control parameters	Basis
copper flakes (coated with aliphatic acid)	Not Assigned	TWA (Fumes)	0.2 mg/m <sup>3</sup> (Copper)	GB EH40
		TWA (Dusts and mists)	1 mg/m <sup>3</sup> (Copper)	GB EH40
		STEL (Dusts and mists)	2 mg/m <sup>3</sup> (Copper)	GB EH40

#### Predicted No Effect Concentration (PNEC) according to Regulation (EC) No. 1907/2006:

Substance name	Environmental Compartment	Value
copper flakes (coated with aliphatic acid)	Soil	65.5 mg/kg
	Fresh water	0.0078 mg/l
	Fresh water sediment	87 mg/kg
	Marine water	0.0052 mg/l
	Marine sediment	676 mg/kg
	STP	0.230 mg/l

### 8.2 Exposure controls

#### Personal protective equipment

Eye protection : Safety glasses

Wear face-shield and protective suit for abnormal processing problems.

Hand protection  
Material : Leather

# SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006



## KU F 280 Copper Powder

Version 2.1      Revision Date: 22.04.2020      SDS Number: 102000028913      Print Date: 28.12.2020  
Date of first issue: 08.02.2018

---

Remarks : Leather gloves The choice of an appropriate glove does not only depend on its material but also on other quality features and is different from one producer to the other. The exact break through time can be obtained from the protective glove producer and this has to be observed. Recommended preventive skin protection  
The suitability for a specific workplace should be discussed with the producers of the protective gloves.

Skin and body protection : Long sleeved clothing  
Safety shoes  
  
Dust impervious protective suit  
Choose body protection according to the amount and concentration of the dangerous substance at the work place.

Respiratory protection : Use suitable breathing protection if workplace concentration requires.  
Respirator with a dust filter  
P1 filter

### Environmental exposure controls

Water : The product should not be allowed to enter drains, water courses or the soil.

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## SECTION 9: Physical and chemical properties

### 9.1 Information on basic physical and chemical properties

Appearance : powder  
Colour : copper  
Odour : odourless  
Odour Threshold : No data available  
pH : No data available  
Freezing point : No data available  
Boiling point/boiling range : 2,597 °C  
Flash point : No data available  
Evaporation rate : No data available  
Flammability (solid, gas) : The substance or mixture is a flammable solid with the

# SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006



## KU F 280 Copper Powder

Version  
2.1

Revision Date:  
22.04.2020

SDS Number:  
102000028913

Print Date: 28.12.2020  
Date of first issue: 08.02.2018

---

category 1.

Self-ignition	: No data available
Auto-ignition temperature	: No data available
Smoldering temperature	: No data available
Decomposition temperature	: No data available
Explosive properties	: No data available
Oxidizing properties	: No data available
Upper explosion limit / Upper flammability limit	: No data available
Lower explosion limit / Lower flammability limit	: No data available
Vapour pressure	: No data available
Relative vapour density	: No data available
Relative density	: No data available
Density	: 8.96 g/cm <sup>3</sup>
Bulk density	: No data available
Solubility(ies) Water solubility	: immiscible
Solubility in other solvents	: No data available
Partition coefficient: n-octanol/water	: No data available
Decomposition temperature	: No data available
Viscosity, dynamic	: No data available
Viscosity, kinematic	: No data available
Flow time	: No data available

### 9.2 Other information

No data available



# SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006



## KU F 280 Copper Powder

Version 2.1      Revision Date: 22.04.2020      SDS Number: 102000028913      Print Date: 28.12.2020  
Date of first issue: 08.02.2018

---

### SECTION 10: Stability and reactivity

#### 10.1 Reactivity

No decomposition if stored and applied as directed.  
No decomposition if stored and applied as directed.

#### 10.2 Chemical stability

No decomposition if stored and applied as directed.

#### 10.3 Possibility of hazardous reactions

Hazardous reactions : Stable under recommended storage conditions.  
No hazards to be specially mentioned.

No decomposition if stored and applied as directed.

Dust may form explosive mixture in air.

#### 10.4 Conditions to avoid

Conditions to avoid : No data available

Heat, flames and sparks.

Heat, flames and sparks.

#### 10.5 Incompatible materials

#### 10.6 Hazardous decomposition products

Contact with water or humid air : This information is not available.

Thermal decomposition : This information is not available.

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### SECTION 11: Toxicological information

#### 11.1 Information on toxicological effects

##### Acute toxicity

Harmful if swallowed.  
Toxic if inhaled.

##### Components:

##### **copper flakes (coated with aliphatic acid):**

Acute oral toxicity : LD50 Oral (Rat, male and female): 300 - 500 mg/kg  
Method: OECD Test Guideline 423  
Assessment: The component/mixture is moderately toxic after single ingestion.

Acute inhalation toxicity : LC50 (Rat, male): 0.7 mg/l

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# SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006



## KU F 280 Copper Powder

Version  
2.1

Revision Date:  
22.04.2020

SDS Number:  
102000028913

Print Date: 28.12.2020  
Date of first issue: 08.02.2018

---

Exposure time: 4 h  
Test atmosphere: dust/mist  
Method: OECD Test Guideline 403

Acute dermal toxicity : LD50 (Rat, male and female): > 2,000 mg/kg  
Method: OECD Test Guideline 402  
Assessment: The substance or mixture has no acute dermal toxicity

### **Skin corrosion/irritation**

Not classified based on available information.

#### **Product:**

Remarks: May cause skin irritation in susceptible persons.

### **Serious eye damage/eye irritation**

Causes serious eye irritation.

#### **Product:**

Remarks: Eye irritation

### **Components:**

#### **copper flakes (coated with aliphatic acid):**

Result: Eye irritation

### **Respiratory or skin sensitisation**

#### **Skin sensitisation**

Not classified based on available information.

#### **Respiratory sensitisation**

Not classified based on available information.

#### **Germ cell mutagenicity**

Not classified based on available information.

#### **Carcinogenicity**

Not classified based on available information.

#### **Reproductive toxicity**

Not classified based on available information.

#### **STOT - single exposure**

Not classified based on available information.

#### **STOT - repeated exposure**

Not classified based on available information.

#### **Aspiration toxicity**

Not classified based on available information.

# SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006



## KU F 280 Copper Powder

Version  
2.1

Revision Date:  
22.04.2020

SDS Number:  
102000028913

Print Date: 28.12.2020  
Date of first issue: 08.02.2018

---

### Further information

#### Product:

Remarks: No data available

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## SECTION 12: Ecological information

### 12.1 Toxicity

#### Components:

##### **copper flakes (coated with aliphatic acid):**

M-Factor (Short-term (acute) : 10  
aquatic hazard)

#### **Ecotoxicology Assessment**

Short-term (acute) aquatic : Very toxic to aquatic life.  
hazard

Long-term (chronic) aquatic : Very toxic to aquatic life with long lasting effects.  
hazard

### 12.2 Persistence and degradability

No data available

### 12.3 Bioaccumulative potential

No data available

### 12.4 Mobility in soil

No data available

### 12.5 Results of PBT and vPvB assessment

#### Product:

Assessment : This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher..

### 12.6 Other adverse effects

#### Product:

Additional ecological : An environmental hazard cannot be excluded in the event of  
information : unprofessional handling or disposal.  
Very toxic to aquatic life with long lasting effects.

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## SECTION 13: Disposal considerations

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# SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006



## KU F 280 Copper Powder

Version 2.1      Revision Date: 22.04.2020      SDS Number: 102000028913      Print Date: 28.12.2020  
Date of first issue: 08.02.2018

---

European Waste Catalogue : 12 01 04 - non-ferrous metal dust and particles  
European Waste Catalogue : 10 03 21 - other particulates and dust (including ball-mill dust) containing hazardous substances

### 13.1 Waste treatment methods

Product : The product should not be allowed to enter drains, water courses or the soil.  
Do not contaminate ponds, waterways or ditches with chemical or used container.  
Send to a licensed waste management company.  
In accordance with local and national regulations.

Contaminated packaging : Empty remaining contents.  
Dispose of as unused product.  
Do not re-use empty containers.  
Do not burn, or use a cutting torch on, the empty drum.  
In accordance with local and national regulations.

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## SECTION 14: Transport information

### 14.1 UN number

ADR : UN 3089  
IMDG : UN 3089  
IATA : UN 3089

### 14.2 UN proper shipping name

ADR : METAL POWDER, FLAMMABLE, N.O.S.  
(Copper metal powder)  
IMDG : METAL POWDER, FLAMMABLE, N.O.S.  
(Copper metal powder)  
IATA : Metal powder, flammable, n.o.s.

### 14.3 Transport hazard class(es)

ADR : 4.1  
IMDG : 4.1  
IATA : 4.1

### 14.4 Packing group

ADR  
Packing group : II  
Classification Code : F3  
Hazard Identification Number : 40  
Labels : 4.1  
Tunnel restriction code : (E)  
IMDG

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# SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006



## KU F 280 Copper Powder

Version 2.1      Revision Date: 22.04.2020      SDS Number: 102000028913      Print Date: 28.12.2020  
Date of first issue: 08.02.2018

---

Packing group : II  
Labels : 4.1  
EmS Code : F-G, S-G  
Remarks : IMDG Code segregation group 7 - Heavy metals and their salts, IMDG Code segregation group 15 - Powdered metals

### IATA (Cargo)

Packing instruction (cargo aircraft) : 448  
Packing instruction (LQ) : Y441  
Packing group : II  
Labels : Division 4.1 - Flammable solids

### IATA (Passenger)

Packing instruction (passenger aircraft) : 445  
Packing instruction (LQ) : Y441  
Packing group : II  
Labels : Division 4.1 - Flammable solids

### 14.5 Environmental hazards

#### ADR

Environmentally hazardous : yes

#### IMDG

Marine pollutant : yes

### 14.6 Special precautions for user

Not applicable

### 14.7 Transport in bulk according to Annex II of Marpol and the IBC Code

Not applicable for product as supplied.

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## SECTION 15: Regulatory information

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

REACH - Candidate List of Substances of Very High Concern for Authorisation (Article 59) : Not applicable

Regulation (EC) No 1005/2009 on substances that deplete the ozone layer : Not applicable

Regulation (EC) No 850/2004 on persistent organic pollutants : Not applicable

### 15.2 Chemical safety assessment

# SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006



## KU F 280 Copper Powder

Version	Revision Date:	SDS Number:	Print Date: 28.12.2020
2.1	22.04.2020	102000028913	Date of first issue: 08.02.2018

### SECTION 16: Other information

#### Full text of other abbreviations

GB EH40 : UK. EH40 WEL - Workplace Exposure Limits  
GB EH40 / TWA : Long-term exposure limit (8-hour TWA reference period)  
GB EH40 / STEL : Short-term exposure limit (15-minute reference period)

ADN - European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways; ADR - European Agreement concerning the International Carriage of Dangerous Goods by Road; AICS - Australian Inventory of Chemical Substances; ASTM - American Society for the Testing of Materials; bw - Body weight; CLP - Classification Labelling Packaging Regulation; Regulation (EC) No 1272/2008; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DSL - Domestic Substances List (Canada); ECHA - European Chemicals Agency; EC-Number - European Community number; ECx - Concentration associated with x% response; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; n.o.s. - Not Otherwise Specified; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RID - Regulations concerning the International Carriage of Dangerous Goods by Rail; SADT - Self-Accelerating Decomposition Temperature; SDS - Safety Data Sheet; SVHC - Substance of Very High Concern; TCSI - Taiwan Chemical Substance Inventory; TRGS - Technical Rule for Hazardous Substances; TSCA - Toxic Substances Control Act (United States); UN - United Nations; vPvB - Very Persistent and Very Bioaccumulative

#### Further information

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.

GB / EN

**KU F 280 Copper Powder**

Version	Revision Date:	SDS Number:	Print Date: 28.12.2020
2.1	22.04.2020	102000028913	Date of first issue: 08.02.2018

---