

MATERIAL SAFETY DATA SHEET
COPPER ANODE

5. Fire fighting and explosion hazard data

Auto-Ignition Temperature : N/A
 Flash point (closed cup) : N/A
 Flammable limits : Upper - N/A % Lower - N/A %
 Fire extinguishing media : Use extinguishing media appropriate for surrounding fire.
 SMALL FIRE: Use DRY chemical powder. LARGE FIRE: Use water spray, fog or foam. Do not use water jet.
 Toxic gases produced : Copper fumes

6. ACCIDENTAL RELEASE MEASURES

General protection and Usual precautions for chemical processing must be taken.
 Environmental Precaution : Not application to copper in solid
 Do not flush into surface water or sanitary sewer system.
 Methods for Clean up : Solid copper does not pose any problems. If dust spills should be cleaned up avoid dust Generation. Wash down with water if contract.
 hygiene measures If dust or fumes are emitted:
 - Keep away from food and drink
 - Wash hands before a break and after working period
 - Store working clothes separately
 - Remove contaminated clothing and launder before re-use
 - Do not inhale powder, dust or fumes
 - Do not eat, drink or smoke
 Prevent long and intensive skin contact.

7. HANDLING AND STORAGE

Information for safe handling : Filtering extractors and/or personal protection must be provided if dust or smoke are formed during processing (see No. 8). Do not breath in the dust or fumes.
 Information concerning fire and explosion protection : Have breathing apparatus/ respirator ready
 Requirements to store-rooms and tanks : No special requirements
 Information concerning storage with other products : Not applicable
 Further information concerning storage conditions : None
 Storage class : Not applicable

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Additional information on the design of technical equipment :
 Filtering extractors are recommended if dusts or smoke are formed.
 Constituents with monitored, workplace-related limiting values:

CAS-No.	Description	Content	Type	Value	Unit
7440-50-8	Copper	-	MAC	1,0	mg/m3
7440-50-8	Copper (smoke)	-	MAC	0,1	mg/m3
7723-14-0	Phosphorus	-	-	0,1	mg/m3

Respiratory protection : Filter P3 when smoke or dusts are formed above MAC-Limits
 Hand protection : Protective gloves
 Eye protection : Goggles
 Body protection : Industrial safety clothing

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9. PHYSICAL AND CHEMICAL PROPERTIES

Boiling Point	: 2,595 °C (Cu), 280 °C (P)	Vapor pressure (mm Hg)	: N/A
Melting Point	: 1,083 °C (Cu), 44.1 °C (P)	Vapor density (Air=1)	: N/A
Specific Gravity (H ₂ O=1)	: 8.9 (Cu), 2.34 (P)	Evaporation rate (Butyl acetate = 1)	: N/A
Solubility (H ₂ O)	: Negligible (Less than 0.1%)	% Volatiles by volume	: 0
Appearance & Odor	: Bright to dull silvery gray color. No odor.		

10. STABILITY AND REACTIVITY

Stability	: Stable
Hazardous polymerization	: Will not occur
Conditions to avoid	: None
Incompatibles	: Strong acids, Active halogen compounds, Chlorine, Fluorine, Iodine, Bromine, Ammonia
Decomposition products	: Copper fumes

11. TOXICOLOGICAL INFORMATION

Effects of Overexposure : Dust may cause sneezing and coughing.
 Dust may irritate skin or eyes.
 Prolonged exposure may cause dermatitis.
 Ingestion may cause nausea, vomiting, headaches, dizziness, gastrointestinal irritation.
Note : Fine powder, granules and fumes from welding or abrasive operations may pose a health hazard. When burned, soldered or brazed tin plated copper busbar and solder or brazing material may give off fumes that cause eye and/or respiratory irritation. Use adequate local exhaust to prevent irritation and maintain fume levels below OSHA ceiling limits.

Target organs	: None identified
Medical conditions generally aggravated by exposure	: None identified
Routes of entry	: None indicated

12. ECOLOGICAL INFORMATION

: Not application to copper in solid

13. DISPOSAL CONSIDERATIONS

Product	
Recommendation	: Collect left-overs and return to manufacturer or scrap dealer. Not to be discharged with the household waste.
Waste code number	
Recommendation	: 12 01 03 acc. to the European Waste Catalogue "Non-ferrous chips and cuttings". The waste code number has been assigned according to the usual purpose of use and the constituents of the product. Depending on the branch and purpose of application another waste code number may possibly be relevant.

14. TRANSPORT INFORMATION

General remarks : Dangerous goods transport regulations not required.

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15. REGULATORY INFORMATION

Recommendation : 12 01 03 acc. to the European Waste Catalogue "Non-ferrous chips and cuttings".
The waste code number has been assigned according to the usual purpose of use and the constituents of the product. Depending on the branch and purpose of application another waste code number may possibly be relevant.

16. OTHER INFORMATION

This Data Sheet defines our current knowledge concerning the environmental relevance and labour safety of our products in their as-shipped form.

However, the Data Sheet does not guarantee the assurance of certain properties in a legally binding sense.

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