

**Etchants**

Revision: 19<sup>th</sup> of January, 2021

PRODUCT NAME	ITEM NO.	SUPPLEMENTARY DETAILS
<b>Etchant Copper A (chlorid version)</b>	95000508	250 ml

<b>Description</b>	The product is used for the macro- and microetching of copper, copper alloys, brass and bronzes. The visualization of copper solders also is a common application.
<b>Material</b>	Hydrogen chloride 5-15%, iron(III)chloride 2-10% All further additives are contained in amounts below the threshold values for mandatory identification and can be considered nonhazardous additives.
<b>Properties</b>	Dark brown liquid, low viscosity with characteristic acidic smell
<b>Application</b>	The etchant can be used as received or diluted with water. It may be used in glass or plastic (PE/PP) containers. The etched surfaces need to have a sufficient surface quality (usually oxide suspension based final polishing is necessary) has to be present for microstructural investigations. During etching the sample is immersed in the medium. The sample should be moved during this process. The etching time differs according to the chemical composition of the sample. The etching time ranges from seconds to minute. The etched sample should display a matte surface. The sample is then rinsed with water and ethanol. After drying, a microscopic evaluation can be conducted. The etching procedure can, after the removal of the etched layer, be repeated.
<b>Health and safety</b>	The etchant has to be applied in a sufficient fume-cupboard. The legal threshold values for the contained hazardous substances cannot be surpassed under any circumstances. Besides protective clothing, closed eye protection and sufficient protective gloves (fluororubber) have to be worn. In the case of dermal exposure, the exposed regions have to be cleaned with water and soap. Further instructions for safety and first aid can be taken from the SDS
<b>Environmental precautions</b>	The liquid should be neutralized with strong bases (e.g. NaOH) before deposition. The etchant must not be released into phreatic-/surface waters or concrete foundations. The product is classified as aquatic toxicity class 1. The product may not be deposited alongside domestic waste. The deposition has to be conducted according to the legal regulations.
<b>Storage</b>	The product belongs to storage class 8 B (TGRS 510). It has to be stored in tightly sealed containers in a cool (3-30°C) and dry storage. It must not be stored together with inflammable substances. The storage facility should prevent the contamination of phreatic and surface waters and soil in case of an accidental release of the etchant.