

Etchant

Revision: 19th of August, 2020

PRODUCT NAME	ITEM NO.	SUPPLEMENTARY DETAILS
Fry ´s etchant	92004493	1 kg

Description	Etchant for contrasting the microstructures steels. It is aminly used for macro etching of flow figures in N ₂ containing low-carbon and Thomas steels.
Material	Hydrogen chloride 40-60%, ethanol 15-30%, copper dichloride 1-10% All further additives are contained in amounts below the threshold values for mandatory identification and can be considered nonhazardous additives.
Properties	Low viscosity, dark liquid, characteristic acidic smell, pH<3, flash point > 80°C
Application	The etchant can be used as received or diluted with ethanol. It should be noted that the contrasting of flow-lines requires a previous heat treatment. The samples has to be heated between 150-200°C for up to 30min.This is necessary to make the flow-lines etchable. The prepared sample (polished 3µm) is immersed in the medium, while being moved. The etching time depends on the material. The etched sample is rinsed with water and ethanol. After drying with hot air, the microscopic investigation can be conducted. The etching process can be repeated if the last grinding or polishing step is carried out again until all etching residues are removed from the samples surface.
Health and safety	The etchant must be used in a fume cupboard. Inhalative exposition should be minimized. Suitable protective clothing, protective gloves (fluorinated rubber, 0.4 mm) and tightly closed eye protection should be worn. In case of dermal exposition, the affected area must be rinsed with water and soap. CO ₂ , extinguishing powders and water-spray are suitable extinguishing agents. Further information regarding first aid measures and safety instructions can be taken from the products SDS.
Environmental precautions	The product is classified in the water toxicity class 1. It must be kept away from surface-/phreatic waters and sewage systems. The etchant has to collected separately. It must be disposed of according to local legislation.
Storage	The product is assigned to storage class 3 (TGRS510). The etchant should be stored in tightly sealed containers in a dry and cool (3-30°C) storage compartment. It has to be secured against electrostatic charging. Further storage related information can be taken from the products SDS.