PRODUCT DATA SHEET

Etchant

Revision: 7th of August, 2020

PRODUCT NAME	ITEM NO.	SUPPLEMENTARY DETAILS
VisiPro-II	95014348 95014349	500 ml 1 l

Description	Cold etchant (***fast etching***) for the visualization of former austenitic grain boundaries for case-hardening steel and low-alloyed quenched and tempered steels as well as higher alloyed bearing steels.
Material	Mixture composed of wetting agent 2-3%, 2,4,6-trinitrophenol: (picric acid) 1-2% and disodium [[4-[disodium [[4-[to[4-[(sulphonatophenyl)amino] phenyl] methylene] cyclohexa-2,5-diene-1-ylidene] amino] benzenesulphonate 1-2% and copper (II)-chloride, dihydrate < 1%
Properties	State of matter: liquid, pH-value: 1.9 -3, color: green, odor: soap-like.
Application	VisiPro-II is used to visualize former austenitic grain boundaries (micro-photographic analysis of the visualized grain sizes). For the microscopic investigation a sample polished with grains of 3 µm or finer is needed. The sample is immersed in the etchant (at room temperature) and kept moving slowly. Etching durations vary according to material (5 s or longer, dependent on material). The sample is then rinsed under running water, cleaned with ethanol and dried with a hot airflow. A copper precipitate appears on the surface of the sample. This precipitate must be removed on a water-soaked polishing cloth by gently re-polishing (manual polish is enough) before drying with ethanol. A slightly yellowish, or whitish discoloration of the polished surface should remain visible. Microscopic analysis is done subsequently. In case of insufficient etching the procedure must be repeated as described above.
Health and safety	The etchant should only be applied inside a sufficient fume-cupboard. Protective clothing, protective gloves (NBR, 0.4 mm) and tightly sealed eye protection must be worn. Inhalative exposition should be prevented. In the case of dermal exposition, the affected area should be rinsed with water and soap thoroughly. During heating or in case of fire poisonous gases (CO, NOX etc.) are released. CO_2, water-spray and powders are suitable extinguishing agents. Further informations regarding first aid measures and safety instructions can be taken from the products SDS.
Environmental precautions	The etchant is classified as water hazard class 2 and has to be prevented from entering sewage-system, phreatic- and surface waters. It pollutes the drinking water strongly if even small quantities are released in the ground. The disposal of this hazardous waste has to be carried out in accordance with local legislation.
Storage	The etchant is assigned to storage class 8 B (TGRS 510). It should be stored tightly sealed in a ventilated, dry and cool (3-30°C) storage compartment. The storage should be protected from antistatic charging. The product should not be stored next to flammable substances. Further storage related information can be taken from the products SDS.