PRODUCT DATA SHEET

Etchant

Revision: 10th of August, 2020

PRODUCT NAME	ITEM NO.	SUPPLEMENTARY DETAILS
Etchant VisiPro-I	950143,46 95014347	500 ml 1 l

Description	Cold etchant for the visualization of former austenitic grain boundaries for case-hardening steel and low-alloyed quenched and tempered steels
Material	2,4,6-trinitrophenol 1-2% Any further additives do not reach the threshold values for mandatory identification and can be considered nonhazardous additives.
Properties	Low viscosity, green liquid, pH 1.9 -3, characteristic, soap-like smell
Application	VisiPro-I 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 (10-40 min). (Heat treatment, alloy constituents, solubility of the elements). The sample is then rinsed under running water, cleaned with ethanol and dried with a hot airflow. A gray / black precipitate can appear 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. Microscopic analysis is done subsequently. In case of insufficient etching the procedure must be repeated as described above. Suitable for low-alloyed steels (e.g.): 14NiCrMo 13-4, 16MnCr 5 (case-hardened), 17NiCrMo 6-4 (case-hardened), 18CrNiMo7-6 20, 26MnCrNiMo 6-5-4 (case-hardened), 30CrMoV9+QT, 30CrNiMo8+QT, 32CrB 4, 42CrMo 4+QT -> up to 100Cr6.
Health and safety	The etchant should only be used inside a suitable fume-cupboard. Protective clothing, protective gloves (NBR, 0.4mm) and a tightly sealed eye protection should be worn. Inhalative exposition should be minimized. In case of dermal exposition, the affected area should be thoroughly rinsed with soap and water. During heating or fire hazardous gases are formed. A self-contained respiratory device should be worn. CO_2, water-spray and extinguishing powders are suitable extinguishing agents. Further information regarding first aid measures and safety instructions can be taken from the products SDS.
Environmental precautions	The etchant is classified as water toxicity class 1. It has to be prevented from entering sewage systems, phreatic- and surface waters. It has to be collected and disposed of as hazardous waste. In any case the deposition must be conducted according to local legislation.
Storage	The product is assigned to storage class 8 B (TGRS 510). It should be stored in tightly sealed containers in a ventilated, dry and cool (3-30°C) storage compartment, which has been secured against antistatic charging. The product should not be stored together with flammable substances. Further storage related information can be taken from the products SDS.