

**Etchant**

Revision: 10<sup>th</sup> of August, 2020

PRODUCT NAME	ITEM NO.	SUPPLEMENTARY DETAILS
<b>Murakami etchant</b>	95002408	1 l

<b>Description</b>	Cold etchant for the visualization microstructures. Commonly etched are carbide metals, Mo-alloys, Cr- and Co- alloys, tungsten and W-alloys as well as carbide ceramics.
<b>Material</b>	Sodium hydroxide 5-15%, sodium hexacyanoferrate(III) 5-15% Any further additives do not reach the threshold values for mandatory identification and can be considered nonhazardous additives.
<b>Properties</b>	Low viscosity, brown liquid, characteristic smell
<b>Application</b>	The etchant is used to visualize differing microstructures. 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 between seconds to several minutes. The sample is then rinsed under running water, cleaned with ethanol and dried with a hot airflow. A slightly matte surface should be present. The sample is rinsed with water and dried with ethanol. Microscopic analysis is done subsequently. In case of insufficient etching the procedure must be repeated as described above. Therefore, the etched layer has to be removed by polishing or grinding.
<b>Health and safety</b>	The etchant should only be used inside a suitable fume-cupboard. Protective clothing, protective gloves (fluorinated rubber, 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 (CO, cyanides etc.) are formed. A self-contained respiratory device should be worn. CO <sub>2</sub> , 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.
<b>Environmental precautions</b>	The etchant is classified as water toxicity class 2. 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. The waste has to be labeled cyanide containing.
<b>Storage</b>	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.