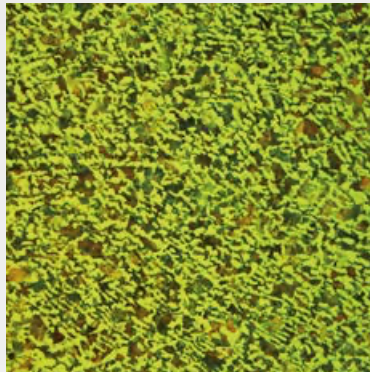




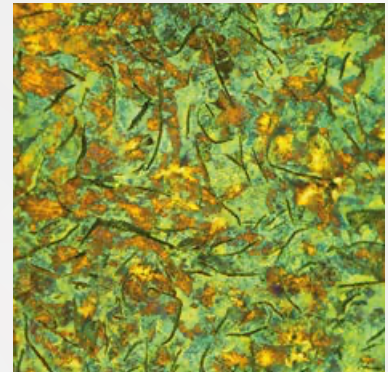
Metallographic reagents

Etching reagents are used to examine the structure of metallic materials. The objective of the micrographic analysis is to highlight the structure of the material (inclusions, grain boundaries, phases, ...) using an optical microscope.

These reagents act either by preferential chemical attack, or by coloration of certain constituents compared to others.



Steel etching nital 5 %



Lamellar cast iron nital attack 5 %

Packaging: 1 liter

Recommendations	Highlighting	Ref.
NITAL 5% REAGENT		
<p>Room temperature, a few seconds</p> <ul style="list-style-type: none"> - Iron and ferrous alloys (cast iron and steel) - Magnesium and its alloys - Tin and its alloys - Pure titanium - Cadmium and its alloys 	<ul style="list-style-type: none"> - Welding of steels - Ferrite grain boundaries and constituents - Segregation and case hardening zones 	08 RN050 20
NITRIC ACID 10% REAGENT		
<p>Room temperature</p> <ul style="list-style-type: none"> - Steels 	<ul style="list-style-type: none"> - Phases on ferritic welds in steels 	08 RR090 20
MURAKAMI REAGENT		
<p>Room temperature or hot, 60 seconds</p> <ul style="list-style-type: none"> - Iron and ferrous alloys (cast iron and steel) - Tungsten alloys 	<ul style="list-style-type: none"> - Carbide highlighting: to blacken carbides, Use at 80°C to boiling under fume hood. - Weakly revealed Σ (sigma) phase after 3 min at room temperature. 	08 RR030 20
KALLING N° 1 REAGENT		
<p>Room temperature</p> <ul style="list-style-type: none"> - Martensitic stainless steels 	<ul style="list-style-type: none"> - To color in black the martensite of stainless steels. - To color the ferrite - To highlight segregations and austenite grain boundaries. 	08 RR040 20
OBERHOFFER REAGENT		
<p>Room temperature, 20 seconds</p> <ul style="list-style-type: none"> - Non-alloyed steels - Low-alloyed steels 	<ul style="list-style-type: none"> - Primary structures (fiber layer) - Make phosphorus accumulations visible 	08 RR050 20

METALLOGRAPHIC REAGENTS

Packaging: 1 liter		
Recommendations	Highlighting	Ref.
KELLER REAGENT		
Room temperature - Aluminium and its alloys, - Titanium alloys	- Highlighting of the phases	08 RR060 20
KROLL'S REAGENT		
Room temperature - Aluminium and its alloys - Titanium alloys (mainly Ti-Al-V(-Sn))	- Highlighting of the phases	08 RR070 20
MARBLE REAGENT		
Room temperature, 10 seconds - Austenitic steels - High temperature steels - Cobalt superalloys	- Highlighting of the austenitic phase nuances - Attack of the Σ phase (sigma) - Highlighting of the grain structures	08 RR080 20
PICRAL-2 REAGENT		
Room temperature, few seconds - Iron and ferrous alloys (cast iron and steel)	- Structures composed of ferrite - Reveal carbides. - Reveal fine microstructures. - Revealing the grain boundaries	08 RR020 20
KLEMM I REAGENT		
Room temperature - Non-alloy and low-alloy steels - Cast iron - Manganese and zinc steels - Brass and bronze - Low alloyed zinc	Staining Reagent: - On steels: 40 to 100 sec to color the ferrite, blue and brown depending on the orientation of the grain. Carbides, cementite and phosphides are not colored and remain white - On brass and bronze: 3 min to color β phase, 10 to 60min for α phase - On zinc alloys: 30 sec	08 RR010 10
KLEMM II REAGENT		
Room temperature - Manganese alloys - Copper and its alloys (brass and bronze) - Tin and its alloys	To reveal the austenitic phase of manganese alloys. Reagent for staining and analyzing soft solder: Brass: 6 min for α phase Tin and alloys : 60 to 90 sec	08 RR010 20
10% SODA SOLUTION		
Room temperature or 5 sec. at 70°C For all aluminum and its wrought alloys.	Aluminium welding Phase identification	08 RS100 20

Products subject to shipping restrictions.