



Oxidizing Agents: Hydrogen Peroxide and Sodium Chlorate

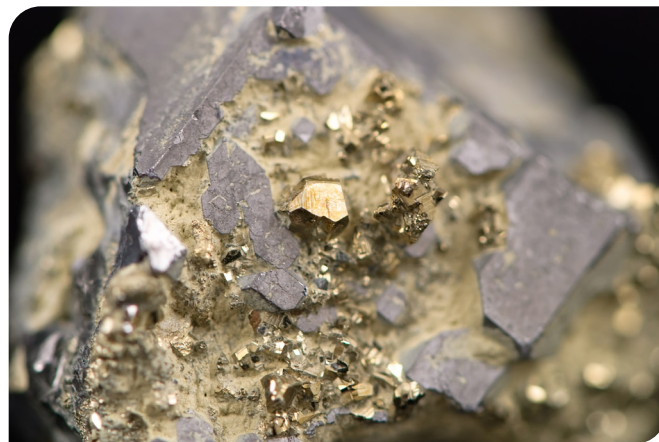
Extraction, refining, metal finishing, and waste (effluent, off-gas) management

Our Eka[®] hydrogen peroxide (HP) and Eka[®] sodium chlorate (SC) are versatile chemicals and relatively strong oxidants. Hydrogen peroxide can also act as a weak reducing agent. These chemicals are used in extraction, leaching, separation, and purification for improving the end-product and the environmental impact. They can increase material recovery from both primary and secondary resources and thus contribute to the circular economy.

Eka[®] HP and Eka[®] SC

Eka[®] HP stabilized hydrogen peroxide is available in several product grades (aseptic, chemical, food, technical) and concentrations (35%, 49%, 59%, 70%) from our plants in Brazil (from 2024), Norway, Sweden, and the USA. Eka[®] HP is delivered in bulk (ISO containers, railcars, and tanker trucks).

Eka[®] SC sodium chlorate is available both in crystal and liquid form from our plants in Brazil, Canada, Chile, Finland, France, Sweden, and the USA. Eka[®] SC is delivered in bulk (railcars and tanker trucks) and big bags/supersacks.



Hydrometallurgical processing

Hydrometallurgical processing involves the extraction and recovery of valuable metals using aqueous techniques. The technology can be applied to the primary processing of ores, concentrates, and related feedstocks, or to secondary recovery (recycling) of valuable elements from various sources ("urban mining"). In many cases, this leaching process will require the use of an oxidant/reductant to break down the mineral/crystal lattice to release the metals or convert them to a soluble/insoluble valence state.

Extraction

Eka® HP and Eka® SC can improve extraction/leaching efficiency by changing the valence state of an element or being a source of oxygen. Examples of applications:

- Uranium leaching and precipitation (Eka® HP and Eka® SC)
- Cyanide leaching of gold ore (Eka® HP)
- Avoidance of co-extracting cobalt and nickel from cobalt-nickel ore (Eka® HP)
- Substitution of nitric acid in aqua-regia-leaching (Eka® SC)
- Recycling of spent Li-ion batteries (Eka® HP)
- Extraction of copper from waste electrical and electronic equipment, WEEE (Eka® HP)
- Recovery of palladium from spent catalysts (Eka® HP and Eka® SC)
- Recovery of selenium and tellurium from electrorefining sludge (Eka® HP)

Refining

Eka® HP and Eka® SC can improve the purity of various species, often by changing the valence state of an element. Examples of applications:

- Purification of gold and silver (Eka® HP and Eka® SC)
- Separation of rare earth elements, REEs, from various sources (Eka® HP and Eka® SC)
- Purification of nickel and dissolution of nickel metal (Eka® HP)
- Purification and functionalization of graphite (Eka® HP)

Metal finishing & surface treatment

Eka® HP and Eka® SC can be used for surface treatments in the metal industry and are used for etching, polishing, and cleaning. Examples of applications:

- Removal of oxides from copper and copper alloys (Eka® HP)
- Promoting phosphating (Eka® SC)
- Reduces NOx formation in conventional pickling of stainless steel (Eka® HP)
- Nitric acid (NOx)-free pickling of stainless steel (Eka® HP)
- Regeneration of waste etchant when etching printed circuit boards, PCB (Eka® HP and Eka® SC)

Waste management

Eka® HP is a "pure chemical" that is suitable to use in environmental applications; the decomposition only forms two products – oxygen and water. Eka® HP can be used as is or in an advanced oxidation process, for example Nouryon's MicrOx™ hydrogen peroxide in combination with the Advanox™ ultraviolet reactors from Van Remmen UV Technology. Examples of applications:

- Cyanide detoxification (Eka® HP)
- Removal of organic material, arsenic, and lead from effluent (Eka® HP)
- Degradation of flotation chemicals (MicrOx™)
- Prevent formation and/or removal of sulfide (Eka® HP)
- Removal of iron in acid mine drainage (Eka® HP)
- Scrubbing NOx, SOx, hydrogen sulfide, mercaptans, aldehydes, odors etc. from off gases (Eka® HP)

Get in touch!

Please contact our experts for more information on our mining solutions and our products Eka® HP and Eka® SC.

We look forward hearing from you!

