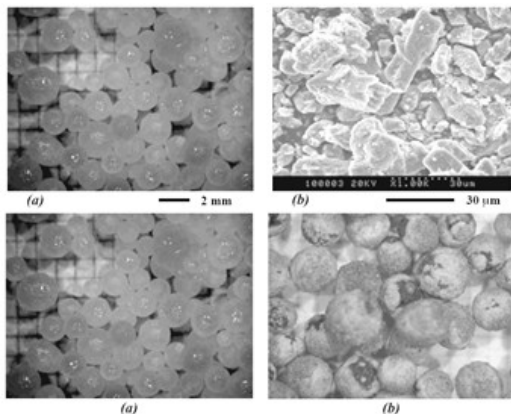




FERRATES SYNTHESIS



How does it work?

This process consists in making react an iron salt, an alkali metal hydroxide or alkaline earth metal and chlorine gas in a rotating reactor at stoichiometric and solid/dry conditions. This method also allows a stabilization of the said ferrates, by partial substitution of iron at high degree of oxidation by a stable cation.

Large scale production of ferrate granules is made possible by a single solid **particle coating method** of an alkali metal hydroxide or alkaline earth metal, with solid particles of one or more salts or iron oxides (Fe (II) and / or Fe (III)). These oxides are then **converted in Fe (VI) in a fluid bed reactor under a fluidization gas** containing chlorine.

A laboratory to accompany you...

This innovation was conceived at the Institut Jean Lamour (IJL), a laboratory specialized in research in materials and processes science, which brings together chemists and physicists. Its multi-thematic expertise encompasses: materials, metallurgy, plasmas, surfaces, nanomaterials and electronics.

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An innovation that brings to you...

- ✓ A **competitive and clean process**
- ✓ A **phenomenological and technical solution of large-scale industrial process**: Production of ferrates in a fluidized bed
- ✓ **Higher yield** than in wet conditions
- ✓ **Lower investment and production costs**
- ✓ **Easier to transport**: ferrates stabilized at solid state and ambient temperatures.

What is it for?

- ✓ Wastewater treatment and industrial effluent
- ✓ Decontamination and disinfection
- ✓ Bleaching textiles, organic and inorganic chemistry
- ✓ Oxidation of cyanides and hydrogen sulfide

Innovation availability...

- ✓ Patent EP2111373
- ✓ Collaboration sought: license for process industrialization and marketing of new molecules

