

Formal Interpretation

# NFPA 430

## Code for the Storage of Liquid and Solid Oxidizers

2004 Edition

**Reference: Definition of “oxidizer”**

**F.I. No.: 430-00-1**

**BACKGROUND:** Sodium hypochlorite is manufactured by reacting chlorine with dilute sodium hydroxide solutions. Solutions are generally formulated in the range of 5.0 - 12.5% sodium hypochlorite by weight. The balance of the solutions consists of water, sodium chloride, and sodium hydroxide. Depending upon the residual quantity of sodium hydroxide in the finished product, it is classified as an “irritant” material or a “corrosive” material as those terms are defined in OSHA’s Hazard Communication Standard, 29 CFR §1910.1200. Generally speaking solutions with less than 1% residual caustic are “irritants,” while solutions containing more than 1% residual caustic are classified as “corrosives.” Total evaporation of sodium hypochlorite solutions yields water and sodium chloride. Unlike calcium hypochlorite, sodium hypochlorite does not exist outside of solution. Sodium hypochlorite solutions do not “readily” yield oxygen or other oxidizing gases and do not initiate or promote combustion of combustible materials. The major decomposition pathway of hypochlorite ion evolves chlorite ion which combines with additional hypochlorite ion to form chlorates, which in turn form chlorides. The formation of oxygen from decomposing hypochlorite ion is a very slow side reaction, although the rate may increase with exposure to transition metals. Other “oxidizing gases,” e.g., chlorine, are not evolved in the decomposition.

**Question:** Do sodium hypochlorite solutions in the 5.0 - 12.5% range by weight meet NFPA’s definition of “oxidizer”?

**Answer:** No

**Issue Edition:** 2000

**Reference:** Definition of “oxidizer”

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