

## INTEROX® AG Spray 35-S Grade Hydrogen Peroxide for Vapor and Spray Aseptic Packaging Applications Technical Data Sheet

### Introduction

In recent years, new aseptic packaging machines have been developed that operate at faster speeds and utilize either a spray of hydrogen peroxide or vaporized hydrogen peroxide for sterilization. The operation of these machines requires a hydrogen peroxide product that is of a higher purity than that required for the bath type aseptic systems. Solvay has a goal to continuously improve its products in response to developments in packaging materials and equipment technologies and the increasing demands of the industry. Through its coordinated global approach to research and development of products and applications, resources have been spent developing a new product for this important market application.

Hydrogen peroxide is the most widely accepted sterilant for aseptic packaging applications. Its environmentally-compatible properties are of particular benefit in food applications: it decomposes into water and oxygen, leaves little or no residue and, unlike other more traditional chemical disinfectants, does not form harmful byproducts. Hydrogen peroxide's antimicrobial performance, its ease of handling and its low dry residue makes it the sterilant of choice for aseptic systems.

### Applications

INTEROX® AG SPRAY 35-S Grade hydrogen peroxide is of very high purity. It has a very low dry residue level making it particularly well suited for use in spray and vaporization style hydrogen peroxide machines. It reduces nozzle plugging and leaves little or no residue on vaporizer surfaces. This ensures optimum heat transfer throughout the production run, ensuring consistently high vaporization rates and dependable vapor concentrations, resulting in high sterilization efficiencies and easier maintenance.

### Product Specifications

INTEROX® AG SPRAY 35-S Grade hydrogen peroxide is a new, higher purity aseptic packaging grade hydrogen peroxide with higher performance stabilizers specially formulated for spray and vapor hydrogen peroxide applications. Its typical values (listed in Table 1) far exceed the hydrogen peroxide monograph of the Food Chemicals Codex. It is a clear, colorless liquid with a density slightly higher than that of water and is miscible with water in all proportions.

INTEROX® AG SPRAY 35-S Grade (Spray and Vaporization Applications)		
Parameter	Food Chemicals Codex Requirement	INTEROX® AG SPRAY 35-S Typical Values
Assay, (%w/w)		35.0 – 36.0
Acidity	<0.03% (<300 ppm)	<80 ppm
pH		1.8 – 3.2
Residue on Evaporation	<0.006% (<60 ppm)	<0.0005% (<5 ppm)
Phosphate	<0.005% (<50 ppm)	<0.001% (<10 ppm)
Tin, ppm	<10	<0.1
Iron, ppm	<0.5	<0.1
Lead, ppm	<4	<0.01

Typical analysis values are not guaranteed data.



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### Availability

INTEROX® AG SPRAY 35-S Grade Hydrogen Peroxide is available in 4,200 bulk tanker truck, 330 gallon HDPE tote tank or 55 gallon HDPE drum quantities from our Solvay Chemicals' Deer Park, Texas production facility. For more information, or to place an order, please contact Solvay Chemicals at 1-800-SOLVAY-C, 800-765-8292 or 713-525-6500.

### Stability

INTEROX® AG SPRAY 35-S Grade hydrogen peroxide loses less than 1% assay per year if stored in approved materials of construction, away from sources of direct heat and sunlight. The decomposition is accelerated by heat and decomposition catalysts, such as transition metals and their compounds, strong acids and strong alkalis. Metals such as iron, copper, chromium, nickel, other non-ferrous metals and their salts and oxides have a strong, catalytically decomposing effect on hydrogen peroxide. During decomposition, large quantities of oxygen can form, posing a fire danger if the product comes into contact with combustible materials.

Detailed information on this topic can be found in our Safety and Handling brochure and in our Material Safety Data Sheet which can be downloaded from our web site at [www.solvaychemicals.us](http://www.solvaychemicals.us).

Aseptic packaging systems constructed of stainless steel must be passivated before contact with hydrogen peroxide. This process further stabilizes hydrogen peroxide, reduces the rate of metallic leaching and slows the formation of residue. Contact your Solvay Chemicals' representative for additional information about proper passivation of stainless steel surfaces.

### Identification

Hydrogen Peroxide	H <sub>2</sub> O <sub>2</sub>
Molecular Weight	34
CAS Number	7722-84-1
CE (EINECS)	231-765-0

### Storage and Handling

- Store hydrogen peroxide in the original vented container, upright, in a cool, ventilated area where it is protected from damage, or in bulk storage tanks made from approved alloys of stainless steel.
- Do not store other chemicals, fuels, or combustible materials near hydrogen peroxide.
- Never return unused hydrogen peroxide to the storage container.
- When empty, rinse all peroxide containers thoroughly with clean water before discarding.
- Use only approved material for pumps, piping, and hoses.

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### Safety

- Persons working with hydrogen peroxide should be familiar with personal protective equipment, first aid measures and the proper safety and handling procedures. Consult the Material Safety Data Sheet (MSDS) for appropriate information.
- Prevent accidental decomposition by keeping the product free of contaminants.
- Prevent fires by avoiding accidental spills. Water is the preferred method for extinguishing fires in which hydrogen peroxide is present.
- Spills and leaks should be contained, diluted with copious amounts of water and disposed of in compliance with local regulations.
- Hydrogen peroxide storage or handling areas should be equipped with a safety shower, an eyewash station, and a water hose.

### First Aid

In case of product splashing into the eyes and face, treat eyes first.

**Eye contact:** Flush eyes immediately with water for at least 15 minutes. Call a physician.

**Skin contact:** Immediately flush skin with water while removing contaminated clothing and shoes. Call a physician if irritation persists.

**Inhalation:** Remove the victim from the contaminated area to fresh air. Call a physician in case of respiratory symptoms.

**Ingestion:** Consult with a physician immediately in all cases. DO NOT induce vomiting.

**Danger:** Hydrogen peroxide solutions are strong oxidizers and corrosive to the eyes, mucous membranes and skin. Consult the MSDS for the appropriate Personal Protective Equipment to wear when handling hydrogen peroxide. In case of contact with the eyes, skin or clothing, flush with large amount of water for 15 minutes. Product in contact with combustible materials may cause fires.

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Before using, read the Material Safety Data Sheet (MSDS) for the chemical.



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