SIEMENS

Siemens Industry, Inc.
Water Technologies Business Unit

Material Safety Data Sheet

SECTION 1 – CHEMICAL PRODUCT AND COMPANY INFORMATION

Product Name: Hydrogen Peroxide 20 – 40 % **Chemical Family:** Inorganic peroxide

Manufacturer's Name: Siemens Industry, Inc. - Water Technologies Business Unit
Address: 2650 Tallevast Road, Sarasota, FL 34243
Product/Technical Information Phone Number: 941.355.2971
Medical/Handling Emergency Phone Number: CHEMTREC 1.800.424.9300
24 hours a day
Transportation Emergency Phone Number: CHEMTREC 1.800.424.9300
24 hours a day

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SECTION 2 – COMPOSITION INFORMATION

Chemical Name	**Percent by Weight**	**CAS#**
Hydrogen peroxide	20 - 40	7722-84-1
Water	Balance	7732-18-5

SECTION 3 – HAZARDS IDENTIFICATION

Appearance & Odor: Clear, colorless solution with slightly pungent odor.

Emergency Overview: Oxidizer. Non-combustible but contact with combustibles may cause a fire. Decomposes yielding oxygen that supports combustion of organic matter and can cause overpressure if confined. Corrosive to eyes, nose, throat, lungs, and gastrointestinal tract. May be fatal if swallowed.

Fire & Explosion Hazards: Product is non-combustible but on decomposition releases oxygen which may intensify a fire. Temperatures above 100 ^{0} F may cause a violent decomposition.

Primary Route(s) of Exposure: Skin and eye contact, inhalation, and ingestion.

Inhalation – Acute Effects: Irritating to the nose, throat, and respiratory tract.

Skin Contact – Acute Effects: Irritation and temporary whitening at the contact area.

Eye Contact – Acute Effects: Irritating and may injure eyes causing corneal damage and possible blindness.

Ingestion – Acute Effects: Harmful and may be fatal if swallowed. This product will burn the mouth, throat, and stomach. Oxygen gas in the esophagus and stomach causes extreme swelling leading to severe injuries.

SECTION 4 – FIRST AID MEASURES

Inhalation First Aid: Remove victim to fresh air and provide oxygen if breathing is difficult. Give artificial respiration ONLY if breathing has stopped. **Obtain medical attention immediately.**

Skin Contact First Aid: Immediately flush for 15-20 minutes with flowing water while removing contaminated clothing and/or shoes. Remove goggles last to keep material from washing into eyes. Clothing should be washed before reuse. Do not allow contaminated clothing to dry before washing clothing on site. **Obtain medical attention immediately.**

Eye Contact First Aid: Immediately irrigate eyes with flowing water continuously for 15-20 minutes while holding eyes open. Contacts should be removed before or during flushing. DO NOT instruct person to neutralize. **Obtain medical attention immediately.**

Ingestion First Aid: Do not induce vomiting**.** Examine lips and mouth to determine whether the tissues are damaged which may indicate ingestion. Absence of such signs is not conclusive. Loosen clothing such as a collar, tie, belt, or waistband. If victim is not breathing, give artificial respiration. If victim is conscious, give plenty of water to dilute the stomach contents. **Obtain medical attention immediately.**

Note to Physician: Risk of permanent corneal injury and possible blindness if splashed into the eyes. Careful ophthalmologic evaluation is recommended and the possibility of local corticorsteriod therapy should be considered. Because of the likelihood of corrosive effects on the gastrointestinal tract after ingestion, and the unlikelihood of systemic effects, attempts at evacuating the stomach via emesis induction or gastric lavage should be avoided. There is a remote possibility, however, that a nasogastric or orogastric tube may be required for the reduction of severe distension due to gas formation.

SECTION 5 – FIRE FIGHTING MEASURES

Flash Point/Method: Not flammable

Auto Ignition Temperature: Not flammable but decomposes at about 100 ^{0} F.

Extinguishing Media: Flood with water.

Fire Fighting Procedures: Wear appropriate protective clothing to prevent contact with skin and eyes. Wear a self-contained breathing apparatus (SCBA) to prevent contact with thermal decomposition products. Use water with caution and in flooding amounts. Use water spray to cool nearby containers.

Fire & Explosion Hazards: This product is non-combustible but on decomposition releases oxygen which may intensify a surrounding fire. Temperatures about 100 ^{0} F may cause a violent decomposition leading to pressure burst in confined spaces or containers.

Hazardous Products of Decomposition and/or Combustion: Flammable oxygen gas.

NFPA Ratings: HEALTH - 3 FLAMMABILITY - 0 REACTIVITY - 1 OTHER - OX

SECTION 6 – ACCIDENTAL RELEASE MEASURES

Do not use adsorbents. Contain the spill using non-combustible materials, such as sand, and dilute with large volumes of water. Combustible materials exposed to hydrogen peroxide should be immediately submerged in or rinsed with large volumes of water to ensure that all hydrogen peroxide is removed. Residual hydrogen peroxide that is allowed to dry on organic materials such as paper, fabrics, cotton, leather, wood, or other combustibles can cause the material to ignite into a fire.

DO NOT DUMP ON THE GROUND OR INTO ANY BODY OF WATER. All disposal methods must be in compliance with all Federal, State, Local and Provincial laws and regulations. Regulations may vary in different locations. Waste characterizations and compliance with applicable laws are the responsibility solely of the waster generator.

SECTION 7 – HANDLING AND STORAGE

Handling: Keep away from heat, sources of ignition, and out of direct sunlight. Avoid contact with incompatible materials such as paper, fabrics, cotton, leather, wood, or other combustibles. Keep containers closed when not in use. Do not use pressure to empty containers. Do not return unused product to the container.

Storage: Store in the original vented containers. Store in a cool, dry, and fireproof area away from sources of heat and combustibles. Do not stack drums. Do not store on wooden pallets. Store drums on concrete.

SECTION 8 –PERSONAL PROTECTION/ EXPOSURE CONTROL

Respiratory Protection: If use conditions generate vapors or mists in concentrations exceeding exposure limits, wear a full-face supplied air respirator. Do not use any form of air purifying respirator or filtering face piece, especially those containing oxidizable substances such as activated carbon.

Skin Protection: Wear neoprene, nitrile, or PVC gloves, coveralls, and overboots.

Eye Protection: Chemical goggles. Wear chemical goggles and face shield if splashing is likely.

Ventilation Protection: Use process enclosures, local exhaust ventilation, or other engineering controls to keep airborne levels below recommended exposure limits.

Other Protection: Safety showers, with quick opening valves that stay open, and eye wash fountains or other means of washing the eyes with a gentle flow of cool to tepid tap water should be readily available in all areas where this material is handled or stored. Water should be supplied through insulated and heat-traced lines to prevent freeze-ups in cold weather.

Exposure Limits: OSHA PEL = 1 ppm TWA ACGIH TLV = 1 ppm TWA

SECTION 9 – PHYSICAL AND CHEMICAL PROPERTIES
Appearance & Odor: Clear, colorless solution with slightly pungent odor.

Boiling Point: 226 ^{0} F (for 35%) **Freezing Point:** negative 27 ^{0} F (for 35%)

Specific Gravity: 1.1 (for 35 %) **Solubility in Water:** Complete

SECTION 10 – STABILITY AND REACTIVITY
Stability: This material is stable under normal use conditions

Incompatibilities: Avoid dirt, organics, cyanides, and combustibles such as wood, paper, and oils.

Polymerization: Hazardous polymerization will not occur.

Hazardous Decomposition Products: Oxygen gas which supports combustion.

Conditions to Avoid: Avoid excessive heat or contamination which could cause the product to become unstable.

SECTION 11 – TOXICOLOGICAL INFORMATION
Toxicology Data:

Oral LD 50 (rat) = 1232 mg / kg (for 35 %)
Dermal LD 50 (rabbit) > 2000 mg / kg (for 35%)
Inhalation LC 50 (rat, 4 hr) = 2000 mg/m^3

Carcinogenicity/Mutagenicity: IARC Group 3: Inadequate Evidence for Carcinogenicity in Humans but Limited Evidence for Carcinogenicity in Experimental Animals.
ACGIH A3: Confirmed Animal Carcinogen with Unknown Relevance to Humans.

SECTION 12 – ECOLOGICAL INFORMATION
Acute Ecotoxicity: Channel catfish 96-hr LC 50 = 37.4 mg/l
Fathead minnow 96-hr LC 50 = 16.4 mg/l
Chemical Fate: This product undergoes oxidation or reduction processes in water and decomposes to water and oxygen gas. This product exhibits a half-life in freshwater and air of 8 hr – 20 days and 10 – 20 hr, respectively.

SECTION 13 – DISPOSAL CONSIDERATIONS
An acceptable method of disposal is to dilute with a large amount of water and allow the hydrogen peroxide to decompose followed by discharge into a suitable treatment system in accordance with all regulatory agencies.

Material that cannot be used, or reprocessed for use, and empty containers should be disposed of in accordance with all applicable regulations. Product containers should be thoroughly

emptied before disposal. Generators of waste material are required to evaluate all waste for compliance with RCRA and any local disposal procedures and regulations. NOTE: State and local regulations may be more stringent than federal regulations.

Empty Containers: Empty containers retain product residue including liquid and vapor. Empty drums should be completely drained, triple rinsed, and returned to a drum reconditioner or properly disposed.

SECTION 14 – TRANSPORTATION INFORMATION

DOT Shipping Name: Hydrogen Peroxide, aqueous solution
Hazard Class: 5.1
Identification Number: UN 2014
Packing Group: II
Labels: Oxidizer, Corrosive

SECTION 15 – REGULATORY INFORMATION

OSHA Hazard Communication: Corrosive, Oxidizer
TSCA Inventory: Yes
CERCLA Section 102 (a): No

SARA Section 302: No
SARA Section 311:
- Acute: Yes
- Chronic: No
- Fire: Yes
- Pressure Release: No
- Reactive: No

SARA Section 312 TPQ = 10,000 lb
SARA Section 313 No

SECTION 16 – OTHER INFORMATION

Disclaimer: The information contained herein is based on data considered accurate. However, no warranty is expressed or implied regarding the accuracy of these data or the results to be obtained from the user thereof. It is the buyer's responsibility to ensure that its activities comply with federal, state, provincial, and local laws.

Revision Indicator: Legal Entity name change 04/01/11