



Scientific Documentation

HY115, Hydrogen Peroxide, 35 Percent
Solution, FCC

Not appropriate for regulatory submission.
Please visit www.spectrumchemical.com or
contact Tech Services for the most up-to-date
information contained in this information
package.

Spectrum Chemical Mfg Corp

769 Jersey Avenue
New Brunswick, NJ 08901
Phone 732.214.1300

Ver4.02 4.May.2016



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In the following pages, we have designed and prepared documented scientific information to aid you in your initial qualification or your continual use of our products. Please do not hesitate to contact us if further information or the most up-to-date documentation is desired from any of the covered areas.

We appreciate your business and we look forward to hearing from you.

Sincerely,

A handwritten signature in black ink, appearing to read "Alan Wang", with a large, sweeping flourish at the end.

Alan Wang, MSQA, ASQ CQA
Senior Manager of Technical Services
techservices@spectrumchemical.com

4.May.2016

HY115, Hydrogen Peroxide, 35 Percent Solution, FCC

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Specification for Hydrogen Peroxide, 35 Percent Solution, FCC (HY115)

Item Number	HY115
Item	Hydrogen Peroxide, 35 Percent Solution, FCC
CAS Number	7722-84-1
Molecular Formula	H ₂ O ₂
Molecular Weight	34.01
MDL Number	
Synonyms	

Test	Specification	
	Min	Max
ASSAY (H ₂ O ₂)	35.0 %	
ACIDITY (as H ₂ SO ₄)		0.03 %
IRON (Fe)		0.5 mg/kg
LEAD (Pb)		4 mg/kg
PHOSPHATE (PO ₄)		0.005 %
RESIDUE ON EVAPORATION		0.006 %
TIN (Sn)		10 mg/kg
IDENTIFICATION	TO PASS TEST	
EXPIRATION DATE		

Spectrum Chemical Mfg Corp

Corporate Headquarters:
769 Jersey Ave.
New Brunswick, NJ 08901
732.214.1300

West Coast Facility:
14422 S. San Pedro St.
Gardena, CA 90248
310.516.8000

SAFETY DATA SHEET

Preparation Date: 05/08/2015

Revision Date: 05/08/2015

Revision Number: G1

1. IDENTIFICATION

Product identifier

Product code: HY115
Product Name: HYDROGEN PEROXIDE, 35 PERCENT SOLUTION, FCC

Other means of identification

Synonyms: Hydrogen Peroxide Solution
CAS #: Mixture
RTECS # MX0899500 (Hydrogen Peroxide, 20% to 60%)
CI#: Not available

Recommended use of the chemical and restrictions on use

Recommended use: No information available.
Uses advised against No information available

Supplier: Spectrum Chemical Mfg. Corp
 14422 South San Pedro St.
 Gardena, CA 90248
 (310) 516-8000

Order Online At: <https://www.spectrumchemical.com>

Emergency telephone number Chemtrec 1-800-424-9300
Contact Person: Martin LaBenz (West Coast)
Contact Person: Ibad Tirmiz (East Coast)

2. HAZARDS IDENTIFICATION

Classification

This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

Acute toxicity - Oral	Category 4
Skin corrosion/irritation	Category 1
Serious eye damage/eye irritation	Category 1
Oxidizing liquids	Category 2

Label elements

Danger

Hazard statements

Causes severe skin burns and eye damage
Harmful if swallowed
May intensify fire; oxidizer



Hazards not otherwise classified (HNOC)

Not Applicable

Other hazards

May be harmful in contact with skin
May be harmful if inhaled
May contain gas under pressure

Precautionary Statements - Prevention

Wash face, hands and any exposed skin thoroughly after handling
Do not eat, drink or smoke when using this product
Do not breathe dust/fume/gas/mist/vapors/spray
Wear protective gloves/protective clothing/eye protection/face protection
Keep away from heat/sparks/open flames/hot surfaces. — No smoking
Keep/Store away from clothing/ .? /combustible materials
Take any precaution to avoid mixing with combustibles .?

Precautionary Statements - Response

Immediately call a POISON CENTER or doctor/physician

Specific treatment (see .? on this label)

In case of fire: Use CO₂, dry chemical, or foam to extinguish.

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

Immediately call a POISON CENTER or doctor/physician.

IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower

Wash contaminated clothing before reuse

IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Immediately call a POISON CENTER or doctor/physician.

IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell

Rinse mouth

Do NOT induce vomiting

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Precautionary Statements - Storage

Store locked up

Precautionary Statements - Disposal

Dispose of contents/container to an approved waste disposal plant

3. COMPOSITION/INFORMATION ON INGREDIENTS

Components	CAS-No.	Weight %	Trade Secret
Water 7732-18-5	7732-18-5	65	*
Hydrogen peroxide 7722-84-1	7722-84-1	35	*

4. FIRST AID MEASURES**First aid measures****General Advice:**

Poison information centers in each State capital city can provide additional assistance for scheduled poisons (13 1126). Ensure that medical personnel are aware of the material(s) involved and take precautions to protect themselves. First aider needs to protect himself.

Skin Contact:

Wash off immediately with soap and plenty of water. Continue flushing with plenty of water for at least 15 minutes. Remove and wash contaminated clothing before re-use. Immediate medical attention is required. Call a physician or Poison Control Centre immediately.

Eye Contact:

Flush eye with water for 15 minutes. Immediate medical attention is required. Call a physician or Poison Control Centre immediately.

Inhalation:

Move to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. **WARNING!** It may be hazardous to the person providing aid to give mouth-to-mouth resuscitation when the inhaled or ingested material is toxic, infectious or corrosive. Do not use mouth-to-mouth resuscitation if victim ingested or inhaled the substance; induce artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. Immediate medical attention is required.

Ingestion:

Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Immediate medical attention is required. Call a physician or Poison Control Center immediately.

Most important symptoms and effects, both acute and delayed**Symptoms**

Causes severe skin burns. Skin contact may result in redness, pain, inflammation, itching, scaling. Causes eye damage. Causes eye burns. Inflammation of the eye is characterized by redness, watering and itching. Moderate irritant to mucous membranes on inhalation. May cause irritation of respiratory tract. Coughing. Choking sensation. Dyspnea (Shortness of breath and difficulty breathing).

Indication of any immediate medical attention and special treatment needed**Notes to Physician:**

Treat symptomatically

Protection of first-aiders

First-Aid Providers: Avoid exposure to blood or body fluids. Wear gloves and other necessary protective clothing. Dispose of contaminated clothing and equipment as bio-hazardous waste

5. FIRE-FIGHTING MEASURES**Extinguishing Media**

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5. FIRE-FIGHTING MEASURES

Suitable Extinguishing Media: Water. CO2 or Halon may provide limited control.

Unsuitable Extinguishing Media: Dry chemical. Foam.

Specific hazards arising from the chemical

Hazardous Combustion Products: No information available.

Specific hazards:

Slightly explosive in presence of open flames, sparks, of heat, of organic materials, of metals and of acids
Oxidizer. Keep away from combustible materials (wood, paper, oil, clothing, etc.)
Can cause spontaneous combustion of flammable materials and continued support of the combustion because it liberates oxygen as it decomposes
Hydrogen peroxide mixed with magnesium and a trace of magnesium dioxide will ignite immediately
Soluble fuels (acetone, ethanol, glycerol) will detonate on a mixture with peroxide over 30% concentration, the violence increasing with concentration
Containers may explode when heated
Explosive with acetic acid, acetic anhydride, acetone, alcohols, carboxylic acids, nitrogen containing bases, As₂S₃, Cl₂ + KOH, FeS, FeSO₄ + 2 methylpyridine + H₂SO₄, nitric acid, potassium permanganate, P₂O₅, H₂Se, Alcohols + H₂SO₄, Alcohols + tin chloride, Antimony trisulfide, chlorosulfonic acid, Aromatic hydrocarbons + trifluoroacetic acid, Azelaic acid + sulfuric acid (above 45 C), Benzenesulfonic anhydride, tert-butanol + sulfuric acid, Hydrazine, Sulfuric acid, Sodium iodate, Tetrahydrothiophene, Thiodiglycol, Mercurous oxide, mercuric oxide, Lead dioxide, Lead oxide, Manganese dioxide, Lead sulfide, Gallium + HCl, Ketenes + nitric acid, Iron (II) sulfate + 2-methylpyridine + sulfuric acid, Iron (II) sulfate + nitric acid, + sodium carboxymethylcellulose (when evaporated), Vinyl acetate, trioxane, water + oxygenated compounds (eg: acetaldehyde, acetic acid, acetone, ethanol, formaldehyde, formic acid, methanol, 2-propanol, propionaldehyde), organic compounds. Beware: Many mixtures of hydrogen peroxide and organic materials may not explode upon contact. However, the resulting combination is detonatable either upon catching fire or by impact.
EXPLOSION HAZARD: SEVERE, WHEN HIGHLY CONCENTRATED OR PURE H₂O₂ IS EXPOSED TO HEAT, MECHANICAL IMPACT, OR CAUSED TO DECOMPOSE CATALYTICALLY BY METALS & THEIR SALTS, DUSTS & ALKALIES. ANOTHER SOURCE OF HYDROGEN PEROXIDE EXPLOSIONS IS FROM SEALING THE MATERIAL IN STRONG CONTAINERS. UNDER SUCH CONDITIONS EVEN GRADUAL DECOMPOSITION OF HYDROGEN PEROXIDE TO WATER + 1/2 OXYGEN CAN CAUSE LARGE PRESSURES TO BUILD UP IN THE CONTAINERS WHICH MAY BURST EXPLOSIVELY.
Fire or explosion: May explode from friction, heat or contamination. These substances will accelerate burning when involved in a fire. May ignite combustibles (wood, paper, oil, clothing, etc.). Some will react explosively with hydrocarbons (fuels). Containers may explode when heated. Runoff may create fire or explosion hazard. /Hydrogen peroxide, aqueous solution, stabilized, with more than 60% Hydrogen peroxide; Hydrogen peroxide
Some oxidizers will react explosively with hydrocarbons (fuels)

Special Protective Actions for Firefighters

Specific Methods:	For large fires, flood fire area with water from a distance.
Special Protective Equipment for Firefighters:	As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Personal Precautions:	Keep people away from and upwind of spill/leak. Ensure adequate ventilation. Use personal protective equipment. Avoid contact with skin, eyes and clothing. Remove all sources of ignition. Keep combustibles (wood, paper, oil, clothing, etc.) away from spilled material. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing.
<u>Environmental precautions</u>	Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Prevent entry into waterways, sewers, basements or confined areas.

Methods and material for containment and cleaning up

Methods for containment	Contain and collect spillage with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite). In case of large spill, dike if needed. Dike far ahead of liquid spill for later disposal.
Methods for cleaning up	Use appropriate tools to put the spilled material in a suitable chemical waste disposal container. Clean contaminated surface thoroughly.

7. HANDLING AND STORAGE

Precautions for safe handling

Technical Measures/Precautions:

Provide sufficient air exchange and/or exhaust in work rooms. Keep away from incompatible materials.

Safe Handling Advice

Wear personal protective equipment. Avoid contact with skin, eyes and clothing. Do not breathe vapors or spray mist. Do not ingest. When using do not smoke. Keep away from combustible material. Keep away from heat and sources of ignition. Handle in accordance with good industrial hygiene and safety practice.

Conditions for safe storage, including any incompatibilities

Technical Measures/Storage Conditions:

Keep refrigerated. Do not store above 8°C/46.4°F. Keep tightly closed in a dry, cool and well-ventilated place. Do not store near combustible materials. Sensitive to light. Store in light-resistant containers. Store away from incompatible materials. Store in a segregated and approved area. Keep away from heat and sources of ignition.

Incompatible Materials:

Incompatible with reducing materials, alkalies, ethers (dioxane, furfuran, tetrahydrofuran), Metals (eg. potassium, sodium lithium, iron, copper, brass, bronze, chromium, zinc, lead, silver, nickel, manganese, platinum, cobalt, iridium, gold, tungsten, osmium, palladium), metal oxides (eg. cobalt oxide, iron oxide, lead oxide, lead hydroxide, manganese oxide), metal salts (eg. calcium permanganate, salts of iron), asbestos, vanadium, molybdeum, triethylamine, palladium, sodium pyrophosphate, carboxylic acids, cyclopentadiene, formic acid, chlorosulfonic acid, carboxylic acids, acetic acid, nitric acid, rust, ketones, sodium carbonate, sodium borate, aniline, mercurous chloride, sodium pyrophosphate, hexavalent chromium compounds, tetrahydrofuran, sodium fluoride, potassium permanganate, urea, manganese dioxide, hydrogen selenide, charcoal, coal, sodium borate, cyclopentadiene, glycerine, cyanides (potassium, cyanide, sodium cyanide), nitrogen compounds.

A 3% solution is also incompatible with albumin, alkali citrates, balsam peru, phenol, tinctures, and lime water.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

National occupational exposure limits

United States

Components	OSHA	NIOSH	ACGIH	AIHA WHEEL
Water 7732-18-5	None	None	None	None
Hydrogen peroxide 7722-84-1	1 ppm TWA 1.4 mg/m ³ TWA	= 1 ppm TWA	= 1 ppm TWA	None

Canada

Components	Alberta	British Columbia	Ontario	Quebec
Water 7732-18-5	None	None	None	None
Hydrogen peroxide 7722-84-1	= 1 ppm TWA = 1.4 mg/m ³ TWA	= 1 ppm TWA	1 ppm TWA	1 ppm TWAEV 1.4 mg/m ³ TWAEV

Australia and Mexico

Components	Australia	Mexico
Water 7732-18-5	None	None
Hydrogen peroxide 7722-84-1	1.4 mg/m ³ TWA	= 1 ppm TWA = 1.5 mg/m ³ TWA

Appropriate engineering controls

Engineering measures to reduce exposure:

Use process enclosures, local exhaust ventilation, or other engineering controls to keep airborne levels below recommended exposure limits. If user operations generate dust, fume or mist, use ventilation to keep exposure to airborne contaminants below the exposure limit.

Individual protection measures, such as personal protective equipment

Personal Protective Equipment

Eye protection: Face-shield

Skin and body protection: Chemical resistant protective suit. Gloves. Boots.

Respiratory protection: Vapor respirator. Be sure to use an approved/certified respirator or equivalent.

Hygiene measures: Avoid contact with skin, eyes and clothing. When using, do not eat, drink or smoke. Wash hands before breaks and immediately after handling the product.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical state: Liquid	Appearance: No information available	Color: Clear. Colorless.
Odor: Odorless.	Taste Bitter. Acid.	Molecular/Formula weight: 34.01 g/mol
Formula: H ₂ O ₂	Flammability: No information available	Flash point (°C): No data available
Flashpoint (°C/°F): No information available.	Flash Point Tested according to: Not available	Autoignition Temperature (°C/°F): No information available
Lower Explosion Limit (%): No information available	Upper Explosion Limit (%): No information available	pH: No information available
Melting point/range(°C/°F): -33°C/ -27.4°F	Boiling point/range(°C/°F): 108°C/ 226.4°F	Bulk density: No information available
Decomposition temperature(°C/°F): No information available	Density (g/cm³): No information available	Specific gravity: 1.1
Vapor pressure @ 20°C (kPa): 3.1	Evaporation rate: No information available	Vapor density: 1.1
VOC content (g/L): No information available	Odor threshold (ppm): No information available	Partition coefficient (n-octanol/water): No information available
Viscosity: No information available	Miscibility: No information available	Solubility: Easily soluble in cold water Soluble in diethyl ether

10. STABILITY AND REACTIVITY

Reactivity

Strong oxidizer. Reactive with reducing agent, combustible materials, organic materials, metals, acids, alkalis
Caused to decompose catalytically by metals (in order of decreasing effectiveness): Osmium, Palladium, Platinum, Iridium, Gold, Silver, Manganese, Cobalt, Copper, Chromium and most other metals and their salts, and dust.

Chemical stability

Stability: Stable under recommended storage conditions. Contains a stabilizer: Proprietary inhibitor (0.1%).

Possibility of Hazardous Reactions: Hazardous polymerization does not occur

Conditions to avoid: Heat. Incompatible materials. Exposure to light. Contact with combustible materials (wood, paper, oil, clothing, etc.).

Incompatible Materials:

Incompatible with reducing materials, alkalies, ethers (dioxane, furfuran, tetrahydrofuran), Metals (eg. potassium, sodium lithium, iron, copper, brass, bronze, chromium, zinc, lead, silver, nickel, manganese, platinum, cobalt, iridium, gold, tungsten, osmium, palladium), metal oxides (eg. cobalt oxide, iron oxide, lead oxide, lead hydroxide, manganese oxide), metal salts (eg. calcium permanganate, salts of iron), asbestos, vanadium, molybdeum, triethylamine, palladium, sodium pyrophosphate, carboxylic acids, cyclopentadiene, formic acid, chlorosulfonic acid, carboxylic acids, acetic acid, nitric acid, rust, ketones, sodium carbonate, sodium borate, aniline, mercurous chloride, sodium pyrophosphate, hexavalent chromium compounds, tetrahydrofuran, sodium fluoride, potassium permanganate, urea, manganese dioxide, hydrogen selenide, charcoal, coal, sodium borate, cyclopentadiene, glycerine, cyanides (potassium, cyanide, sodium cyanide), nitrogen compounds.
A 3% solution is also incompatible with albumin, alkali citrates, balsam peru, phenol, tinctures, and lime water.

Hazardous decomposition products: Oxygen.

Other Information

Corrosivity: Non-corrosive in presence of glass.

Special Remarks on Corrosivity: No information available

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Principal Routes of Exposure:

Skin. Ingestion. Eyes.

Acute Toxicity

Component Information

Water - 7732-18-5

- LD50/oral/rat** = > 90 mL/kg Oral LD50 Rat
- LD50/oral/mouse** = No information available
- LD50/dermal/rat** = No information available
- LD50/dermal/rabbit** = No information available
- LC50/inhalation/rat** = No information available
- LC50/inhalation/mouse** = No information available
- Other LD50 or LC50 information** = No information available

Hydrogen peroxide - 7722-84-1

- LD50/oral/rat** = 1518 mg/kg Oral LD50 Rat
- LD50/oral/mouse** = No information available
- LD50/dermal/rat** = 4060 mg/kg Dermal LD50Rat
- LD50/dermal/rabbit** = 2000 mg/kg Dermal LD50Rabbit
- LC50/inhalation/rat** = 2 g/m³ Inhalation LC50 Rat 4 h
- LC50/inhalation/mouse** = No information available
- Other LD50 or LC50 information** = No information available

Product Information

LD50/oral/rat =

VALUE- Acute Tox Oral = > 90mg/kg

LD50/oral/mouse =

Value - Acute Tox Oral = No information available

LD50/dermal/rabbit

VALUE-Acute Tox Dermal = 2000mg/kg

LD50/dermal/rat

VALUE -Acute Tox Dermal = 2000mg/kg

LC50/inhalation/rat

VALUE-Vapor = No information available

VALUE-Gas = 2000mg/m³

VALUE-Dust/Mist = No information available

LC50/Inhalation/mouse

VALUE-Vapor = No information available

VALUE - Gas = No information available

VALUE - Dust/Mist = No information available

Symptoms

Skin Contact:

Corrosive. Contact causes severe skin irritation and possible burns. Absorption into skin may affect behavior/central nervous system (tremor, ataxia, convulsions), respiration (dyspnea, pulmonary emboli), brain.

Eye Contact:

Corrosive. Causes severe eye irritation, superficial clouding, corneal edema and may cause burns.

Inhalation

Causes respiratory tract (nose, throat, lung) irritation with coughing and wheezing. May cause ulceration and perforation of the nasal septum if inhaled in excessive quantities. Burning copper sulfate may result in irritating and poisonous gases which may irritate the respiratory tract and lungs, and may cause fume metal fever which is characterized by flu-like symptoms such as fever, chills, muscle aches. Causes lacrimation. May cause chemical burns to the respiratory tract. May affect behavior/Central nervous system (insomnia, headache, ataxia, nervous tremors with numb extremities) and may cause ulceration of nasal tissue, and , chemical pneumonia, unconsciousness, and possible death. At high concentrations, respiratory effects may include acute lung damage, and delayed pulmonary edema. May affect blood.

Ingestion

May be harmful if swallowed. Causes gastrointestinal tract irritation with nausea, vomiting, hypermotility, and diarrhea. Causes gastrointestinal tract burns. May affect cardiovascular system and cause vascular collapse and damage. May affect blood (change in leukocyte count, pigmented or nucleated red blood cells). May cause difficulty in swallowing, stomach distension and possible cerebral swelling. May affect behavior/central nervous system (tetany, excitement), and brain.

Aspiration hazard

No information available

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Chronic Toxicity Prolonged or repeated skin contact may cause dermatitis. Prolonged or repeated exposure of eyes to vapor or mist may cause corneal damage. Prolonged or repeated inhalation may affect metabolism (weight loss). Prolonged or repeated ingestion may affect the liver. Prolonged or repeated inhalation may affect the blood (changes in serum composition).

Sensitization: No information available

Mutagenic Effects: May affect genetic material
Experiments with bacteria and/or yeast have shown mutagenic effects

Carcinogenic effects: May cause cancer based on animal test data.

Components	IARC	ACGIH - Carcinogens	NTP	OSHA HCS - Carcinogens	Australia - Prohibited Carcinogenic Substances	Australia - Notifiable Carcinogenic Substances
Water	Not listed	Not listed	Not listed	Not listed	Not listed	Not listed
Hydrogen peroxide	Group 3 - Monograph 71 [1999] Supplement 7 [1987] Monograph 36 [1985]	A3 Confirmed Animal Carcinogen with Unknown Relevance to Humans	Not listed	Not listed	Not listed	Not listed

Reproductive toxicity No data is available

Reproductive Effects: No information available
Developmental Effects: No information available
Teratogenic Effects: No information available

Specific Target Organ Toxicity

STOT - single exposure No information available
STOT - repeated exposure No information available
Target Organs: Blood. Respiratory system. Skin. Eyes. Central nervous system.

12. ECOLOGICAL INFORMATION

Ecotoxicity

Ecotoxicity effects: May be harmful to the aquatic environment.

Hydrogen peroxide - 7722-84-1

Freshwater Algae Data: 2.5 mg/L EC50 Chlorella vulgaris 72 h
Freshwater Fish Species Data: 18-56 mg/L LC50 Lepomis macrochirus 96 h static 1
10.0-32.0 mg/L LC50 Oncorhynchus mykiss 96 h static 1
16.4 mg/L LC50 Pimephales promelas 96 h 1
Water Flea Data: 18 - 32 mg/L EC50 Daphnia magna 48 h
7.7 mg/L EC50 Daphnia magna 24 h

Persistence and degradability: No information available

Bioaccumulative potential: No information available

Mobility: No information available

13. DISPOSAL CONSIDERATIONS

Disposal Methods

Waste from residues / unused products:

Waste must be disposed of in accordance with Federal, State and Local regulation.

Contaminated packaging:

Empty containers should be taken for local recycling, recovery or waste disposal

Components	RCRA - F Series Wastes	RCRA - K Series Wastes	RCRA - P Series Wastes	RCRA - U Series Wastes
Water	None	None	None	None
Hydrogen peroxide	None	None	None	None

14. TRANSPORT INFORMATION

DOT

UN-No: UN2014
Proper Shipping Name: Hydrogen peroxide, aqueous solutions
Hazard Class: 5.1
Subsidiary Risk: 8
Packing Group: II
ERG No: 140
Marine Pollutant: No data available
DOT RQ (lbs): No information available

Symbol(s):

TDG (Canada)

UN-No: UN2014
Proper Shipping Name: Hydrogen peroxide, aqueous solution
Hazard Class: 5.1
Subsidiary Risk: (8)
Packing Group: II
Description: No information available

ADR

UN-No: UN2014
Proper Shipping Name: Hydrogen peroxide, aqueous solution
Hazard Class: 5.1
Packing Group: II
Subsidiary Risk: 8
Classification Code: No information available
Description: No information available
CEFIC Tremcard No: No information available

IMO / IMDG

UN-No: UN2014
Proper Shipping Name: Hydrogen peroxide, aqueous solution
Hazard Class: 5.1

Product code: HY115

Product name: HYDROGEN
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Subsidiary Risk: 8
Packing Group: II
Description: No information available
IMDG Page: No information available
Marine Pollutant: No information available
EMS: F-H
MFAG: No information available
Maximum Quantity: No information available

RID

UN-No: UN2014
Proper Shipping Name: Hydrogen peroxide, aqueous solution
Hazard Class: 5.1
Subsidiary Risk: 8
Packing Group: II
Classification Code: No information available
Description: No information available

ICAO

UN-No: UN2014
Proper Shipping Name: Hydrogen peroxide, aqueous solution
Hazard Class: 5.1
Subsidiary Risk: 8
Packing Group: II
Description: No information available

IATA

UN-No: UN2014
Proper Shipping Name: Hydrogen peroxide, aqueous solution
Hazard Class: 5.1
Subsidiary Risk: 8
Packing Group: II
ERG Code: 5C
Description: No information available

15. REGULATORY INFORMATION

International Inventories

Components	U.S. TSCA	KOREA KECL	Philippines (PICCS)	Japan ENCS	CHINA	Australia (AICS)	EINECS-No.
<i>Water</i>	Present	Present KE-35400	Present	Not present	Present	Present	Present 231-791-2
<i>Hydrogen peroxide</i>	Present	Present KE-20204	Present	Present (1)-419	Present	Present	Present 231-765-0

U.S. Regulations

Hydrogen peroxide

Massachusetts RTK: Present
Massachusetts EHS: extraordinarily hazardous
New Jersey RTK Hazardous Substance List: 1015
New Jersey (EHS) List: 1015 500 lb TPQ
New Jersey - Discharge Prevention - List of Hazardous Substances: Present
Pennsylvania RTK: environmental hazard
Pennsylvania RTK - Environmental Hazard List Present
Pennsylvania RTK - Special Hazardous Substances Present

Product code: HY115

Product name: HYDROGEN
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Hydrogen peroxide

Michigan PSM HHC: = 7500 lb TQ 52% by weight or greater

Minnesota - Hazardous Substance List: Present

New York Release Reporting - List of Hazardous Substances:

= 1 lb RQ

California Directors List of Hazardous Substances: Present

FDA - Food Additives Generally Recognized as Safe (GRAS): 21 CFR 184.1366

FDA - Direct Food Additives 21 CFR 173.315 21 CFR 173.356

FDA - 21 CFR - Total Food Additives 133.113 133.118 133.136 133.144 133.195 160.105 160.145 160.185 172.167 172.723
172.814 172.892 173.315 173.356 173.370 175.105 178.1005 178.1010 184.1366

California Prop. 65: Safe Drinking Water and Toxic Enforcement Act of 1986.

Chemicals Known to the State of California to Cause Cancer:

This product does not contain a chemical requiring a warning under California Prop. 65. (See table below)

Chemicals Known to the State of California to Cause Reproductive Toxicity:

This product does not contain a chemical requiring a warning under California Prop. 65. (See table below)

Components	Carcinogen	Developmental Toxicity	Male Reproductive Toxicity	Female Reproductive Toxicity:
Water	Not Listed	Not Listed	Not Listed	Not Listed
Hydrogen peroxide	Not Listed	Not Listed	Not Listed	Not Listed

CERCLA/SARA

Components	CERCLA - Hazardous Substances and their Reportable Quantities	Section 302 Extremely Hazardous Substances and TPQs	Section 302 Extremely Hazardous Substances and RQs	Section 313 - Chemical Category	Section 313 - Reporting <i>de minimis</i>
Water	None	None	None	None	None
Hydrogen peroxide	None	1000 lb TPQ 1000	None	None	None

U.S. TSCA

Components	TSCA Section 5(a)2 - Chemicals With Significant New Use Rules (SNURS)	TSCA 8(d) -Health and Safety Reporting
Water	Not Applicable	Not Applicable
Hydrogen peroxide	Not Applicable	Not Applicable

Canada

WHMIS hazard class:

- C Oxidizing materials
- E Corrosive material
- F Dangerously reactive material

Water

Uncontrolled product according to WHMIS classification criteria

Hydrogen peroxide

- C E F
- C D2B including 9%, 10%, 15%
- C E including 20%, 25%, 27%
- C E F including 30%, 35%, 40%, 50%, 65%, 70%, 75%, 80%, 85%, 90%, 95%

Canada Controlled Products Regulation:

This product has been classified according to the hazard criteria of the CPR (Controlled Products Regulation) and the MSDS contains all of the information required by the CPR.

Components	WHMIS Ingredient Disclosure List -
Hydrogen peroxide	1 %

Product code: HY115

Product name: HYDROGEN
PEROXIDE, 35 PERCENT SOLUTION,
FCC

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Inventory

Components	Canada (DSL)	Canada (NDSL)
Water	Present	Not Listed
Hydrogen peroxide	Present	Not Listed

Components	CEPA Schedule I - Toxic Substances	CEPA - 2010 Greenhouse Gases Subject to Mandatory Reporting
Water	Not listed	Not listed
Hydrogen peroxide	Not listed	Not listed

EU Classification

R-phrase(s)

R 8 - Contact with combustible material may cause fire.
R34 - Causes burns.

S -phrase(s)

S28 - After contact with skin, wash immediately with plenty of water
S45 - In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).
S 1/2 - Keep locked up and out of the reach of children.
S36/39 - Wear suitable protective clothing and eye/face protection.

Components	Classification	Concentration Limits:	Safety Phrases
Water		No information	
Hydrogen peroxide	C;R34 O;R8	20%≤C C;R34 5%≤C<20% Xi;R36/38	S(1/2)-S28-S36/39-S45

The product is classified in accordance with Annex VI to Directive 67/548/EEC

Indication of danger:

C - Corrosive.
O - Oxidising.



16. OTHER INFORMATION

Product code: HY115

Product name: HYDROGEN
PEROXIDE, 35 PERCENT SOLUTION,
FCC

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16. OTHER INFORMATION

Preparation Date: 05/08/2015
Revision Date: 05/08/2015
Prepared by: Sonia Owen

Disclaimer:

All chemicals may pose unknown hazards and should be used with caution. This Safety Data Sheet (SDS) applies only to the material as packaged. If this product is combined with other materials, deteriorates, or becomes contaminated, it may pose hazards not mentioned in this SDS. The physical properties reported in this SDS are obtained from the literature and do not constitute product specifications. Information contained herein does not constitute a warranty, whether expressed or implied, as to the safety, merchantability or fitness of the goods for a particular purpose. Spectrum Chemicals & Laboratory Products, Inc. assumes no responsibility for results obtained or for incidental or consequential damages, including lost profits, arising from the use of these data. No warranty against infringement of any patent, copyright or trademark is made or implied. It shall be the user's responsibility to develop proper methods of handling and personal protection based on the actual conditions of use. While this SDS is based on technical data judged to be reliable, Spectrum assumes no responsibility for the completeness or accuracy of the information contained herein.

End of Safety Data Sheet

Certificate of Registration

Intertek

This is to certify that the quality management system of

Spectrum China Ltd.

Building A20, No. 3802, Shengang Road, Songjiang District, Shanghai, China

has been assessed and registered by Intertek as conforming to the requirements of

ISO 9001: 2008

The quality management system is applicable to:

Provision of service of purchase, testing and sales for chemical products, repacking of non-hazardous chemical products.

Organization Code: 77762704-8
Certificate Number: 111310001-01
Certificate Issue Date: 17 November 2015
Certificate Expiry Date: 14 September 2018



014

A handwritten signature in black ink, appearing to read 'Calin Moldovean'.

Authorised Signature: Calin Moldovean President, Business Assurance
Intertek Certification Limited, 10A Victory Park, Victory Road, Derby DE24 8ZF, United Kingdom
Intertek Certification Limited is a UKAS accredited body under schedule of accreditation no. 014.

In the issuance of this certificate, Intertek assumes no liability to any party other than to the client, and then only in accordance with the agreed upon Certification Agreement. This certificate's validity is subject to the organization maintaining their system in accordance with Intertek's requirements for systems certification. Validity may be confirmed via email at certificate.validation@intertek.com or by scanning the code to the right with a smartphone.
The annual validity of the certificate can also be checked through the website <http://www.cnca.gov.cn> of CNCA in China.



The certificate remains the property of Intertek, to whom it must be returned upon request.



March 28, 2016

Certificate of cGMP

Dear Valued Customer:

Spectrum Chemicals and Laboratory Products certify that our USP, NF, FCC, EP, BP, JP, and food grade products are produced, processed, packaged and held in compliance with current Good Manufacturing Practices (cGMP) in accordance with the applicable parts of 21 CFR, parts 210 and 211 of the Code of Federal Regulations.

Spectrum is an FDA registered and inspected drug establishment. Our United States Food and Drug Administration (USFDA) Registration numbers are as follows:

Spectrum-Gardena, CA:	<u>2020632</u>
Spectrum-New Brunswick, NJ:	<u>2246824</u>
Spectrum -Shanghai, China:	<u>3006174778</u>

Thank you for your interest with Spectrum products. Please feel free to contact the Quality Assurance department at 310-516-8000 or via email at qualityassurance@spectrumchemical.com if we may be of further assistance.

Sincerely,

A handwritten signature in cursive script that reads "Michelle Weston".

Michelle Weston
Quality Assurance Specialist



April 18, 2016

Certificate of cGMP

Dear Valued Customer:

Spectrum Chemicals and Laboratory Products certify that the following product(s) is produced, processed, packaged and held in compliance with current Good Manufacturing Practices (cGMP) in accordance with the applicable parts of 21 CFR, parts 210 and 211 of the Code of Federal Regulations.

Catalog Number	Product Name
HY115	Hydrogen Peroxide, 35 Percent Solution, FCC

Spectrum is an FDA registered and inspected drug establishment. Our United States Food and Drug Administration (USFDA) Registration numbers are as follows:

Spectrum-Gardena, CA: 2020632
Spectrum-New Brunswick, NJ: 2246824
Spectrum-Shanghai, China: 3006174778

Thank you for your interest with Spectrum products. Please feel free to contact the Quality Assurance department at 310-516-8000 or via email at qualityassurance@spectrumchemical.com if we may be of further assistance.

Sincerely,

Michelle Weston
Quality Assurance Specialist



April 28, 2016

Re: Hydrogen Peroxide, 35 Percent Solution, FCC-HY115

To Whom It May Concern:

Thank you for your interest in Spectrum high quality chemicals.

We at Spectrum Chemical Mfr. Corp. understand the concern regarding Bovine Spongiform Encephalopathy (BSE). Please be assured that the chemical

Hydrogen Peroxide, 35 Percent Solution, FCC-HY115

is BSE/TSE free.

If you have any further questions, please contact Tech Services at (310) 516-8000 Extension 5471, or by email at techservices@spectrumchemical.com.

Sincerely,

Darlene Dagdag-Lyudmirskiy
Technical Services
Spectrum Chemical Mfr. Corp.

This document has been produced electronically and is valid without a signature



May 3, 2016

Re: Hydrogen Peroxide, 35 Percent Solution, FCC-HY115

To Whom It May Concern:

Thank you for your interest in Spectrum high quality chemicals.

We at Spectrum Chemical Mfr. Corp. understand the concern regarding the presence of allergens in raw materials. Please be assured that the following chemical does not contain (Milk; Egg; Fish; Shellfish; Lupin; Tree nuts; Mollusks; Wheat; Peanuts; Soy; Cereals containing Gluten; Celery; Mustard; Sesame Seed).

Hydrogen Peroxide, 35 Percent Solution, FCC-HY115

If you have any further questions, please contact Tech Services at (310) 516-8000 Extension 5471, or by email at techservices@spectrumchemical.com.

Sincerely,

Darlene Dagdag-Lyudmirskiy
Technical Services
Spectrum Chemical Mfr. Corp.

This document has been produced electronically and is valid without a signature



April 28, 2016

Re: Hydrogen Peroxide, 35 Percent Solution, FCC-HY115

To Whom It May Concern:

Thank you for your interest in Spectrum high quality chemicals.

We at Spectrum Chemical Mfg. Corp. understand the concern regarding Aflatoxins in raw materials. To the best of our knowledge, the product listed below is not contaminated with Aflatoxins. Aflatoxins are not used in production. The following product does not come in contact with Aflatoxins at any stage of production.

Hydrogen Peroxide, 35 Percent Solution, FCC-HY115

If you have any further questions, please contact Tech Services at (310) 516-8000 Extension 5471, or by email at techservices@spectrumchemical.com.

Sincerely,

Darlene Dagdag-Lyudmirskiy
Technical Services
Spectrum Chemical Mfr. Corp.

This document has been produced electronically and is valid without a signature

Label Information

The Spectrum label presents technical and safety information in an easily understood format. Our technical specialists stay abreast of the latest requirements of the Globally Harmonized System for Classification and Labelling of Chemicals (GHS), as well as the Occupational Safety and Health Administration (OSHA), the Food and Drug Administration (FDA) and other government regulatory agencies in order to ensure compliance, accuracy and concise hazard communication.

SPECTRUM[®]

HY115 — **D** — **F** — **4 L**

Hydrogen Peroxide

E — **35% Solution**

H — **F.C.C.**

G — **CAS 7722-84-1**

CAUTION: For manufacturing, processing or repackaging.
Read and understand the label and Safety Data Sheet (SDS) prior to use.

DOT: UN2014, Hydrogen peroxide, aqueous solution, 5.1 (8), PG II — **I**

Chemical Emergency: (800)424-9300

J — www.SpectrumChemical.com

REFRIGERATE

H₂O₂ — **K** — **F.W. 34.01**

Contains stabilizer.

Components:

Water	CAS 7732-18-5
Hydrogen Peroxide	CAS 7722-84-1

Assay (H₂O₂) Min. 35%

MAXIMUM LIMITS

Acidity (as H ₂ SO ₄)	0.03%
Iron	0.5 mg/kg
Lead	4 mg/kg
Phosphate	0.005%
Residue on Evaporation	0.006%
Tin	10 mg/kg

WARNING: This product contains a chemical known to the State of California to cause cancer.

WARNING: This product contains a chemical known to the State of California to cause birth defects or other reproductive harm.

Keep tightly closed. — **M**

L — Exp. Date: 03-31-2025

KEEP FROM CHILDREN

Y 10/E2GHS — **A** — **O** — **Lot No. 062233**

SPECTRUM CHEMICAL MFG. CORP. — **Gardena, CA 90248 • New Brunswick, NJ 08901**

- | | | |
|---|--|---|
| A Bar Code | F Size/Quantity | K Empirical Formula, Formula Weight and Technical Specifications Panel |
| B GHS Hazard Pictograms | G Chemical Abstracts Service (CAS) Registry Number | L Expiration Information |
| C Warning, Safety Data and Precautionary Information | H Caution Information | M Lot Number |
| D Product Catalog Number | I DOT Shipping Information | N Kosher Certified by Kosher Supervision of America (KSA). |
| E Item Name, Form, Grade | J Toll-Free 24-Hour Chemical Emergency Telephone Number | |
| O Storage Color Band | | |

This color-coded band indicates the hazard most likely to be posed by that material under storage conditions. The criteria used to assign band colors have been established by the Storage Code working group of the Society for Chemical Hazard Communication (SCHC). It is recommended that like colors be stored together, unless otherwise stated, based on the color codes indicated to the right. However, it is the responsibility of the customer to check with their local fire department for possible conflicts with our recommendations when storing hazardous chemicals.

- YELLOW:** Oxidizer
- RED:** Flammable
- GREEN:** General Storage
- BLUE:** Health Hazard
- WHITE:** Corrosive

Spectrum Chemical Mfg Corp

Corporate Headquarters:

769 Jersey Ave.
New Brunswick, NJ 08901

732.214.1300

West Coast Facility:

14422 S. San Pedro St.
Gardena, CA 90248

310.516.8000

Item Number	HY115	Lot Number	1EH0276
Item	Hydrogen Peroxide, 35 Percent Solution, FCC		
CAS Number	7722-84-1		
Molecular Formula	H ₂ O ₂	Molecular Weight	34.01

Test	Specification		Result
	min	max	
ASSAY (H ₂ O ₂)	35.0 %		35.2 %
ACIDITY (as H ₂ SO ₄)		0.03 %	0.00003 %
IRON (Fe)		0.5 mg/kg	0.01 mg/kg
LEAD (Pb)		4 mg/kg	<0.5 mg/kg
PHOSPHATE (PO ₄)		0.005 %	0.0005 %
RESIDUE ON EVAPORATION		0.006 %	0.00002 %
TIN (Sn)		10 mg/kg	4.5 mg/kg
IDENTIFICATION	TO PASS TEST		PASSES TEST
EXPIRATION DATE			30-APR-2017
MANUFACTURE DATE			13-APR-2015
APPEARANCE			CLEAR COLORLESS LIQUID

Spectrum Chemical Mfg Corp
 14422 South San Pedro Street
 Gardena 90248 CA

Certificate of Analysis Results Certified By:



Adan Hernandez
 Quality Control Manager
 Spectrum Chemicals & Laboratory Products



All pharmaceutical ingredients are tested using current edition of applicable pharmacopeia.

Item Number	HY115	Lot Number	2EJ0278
Item	Hydrogen Peroxide, 35 Percent Solution, FCC		
CAS Number	7722-84-1		
Molecular Formula	H ₂ O ₂	Molecular Weight	34.01

Test	Specification		Result
	min	max	
ASSAY (H ₂ O ₂)	35.0 %		35.50 %
ACIDITY (as H ₂ SO ₄)		0.03 %	0.00004 %
IRON (Fe)		0.5 mg/kg	0.08 mg/kg
LEAD (Pb)		4 mg/kg	<0.5 mg/kg
PHOSPHATE (PO ₄)		0.005 %	0.0013 %
RESIDUE ON EVAPORATION		0.006 %	0.00001 %
TIN (Sn)		10 mg/kg	5 mg/kg
IDENTIFICATION	TO PASS TEST		PASSES TEST
EXPIRATION DATE			27-MAY-2017
DATE OF MANUFACTURE			14-JUL-2015
APPEARANCE			CLEAR COLORLESS LIQUID

Spectrum Chemical Mfg Corp
755 Jersey Avenue
New Brunswick 08901 NJ

Certificate of Analysis Results Certified By:




Mulbah F. Dwanah
Laboratory Supervisor
Spectrum Chemicals & Laboratory Products

All pharmaceutical ingredients are tested using current edition of applicable pharmacopeia.

January 26, 2016

RE: Lot Numbering System

Dear Valued Customer:

This letter is to inform you of Spectrum Chemicals and Laboratory Products' Lot Numbering System. The system is based on an alpha-numerical sequence which provides the month, year and location of production.

The lot numbering system utilized until 2010 is a sequence of **six characters**, two letters followed by four numbers. The first letter represents the year, for example, Y denotes 2009 and Z denotes 2010. The second letter represents the month and site, for example, A-L denotes January through December at Spectrum's Gardena, CA facility, while M-X denotes January through December at the New Brunswick, NJ facility. The following four numbers are sequentially assigned.

Example: ZI0928 = The 928th material produced in California in September 2010

The lot numbering system utilized for 2011 and forward, is a sequence of **seven characters**. The first character, a number, represents the production facility:

- 1 = Gardena, CA Facility
- 2 = New Brunswick, NJ Facility
- 3 = China Facility

The second character, a letter, represents the year. For example, A denotes 2011 and B denotes 2012. The third character, a letter, represents the month, with A denoting January and L denoting December. The following four numbers are sequentially assigned.

Example: 2AA0706 = The 706th material produced in New Jersey in January 2011

Thank you for your interest with Spectrum products. Please feel free to contact us at 310-516-8000 or via email at qualityassurance@spectrumchemical.com if we may be of further assistance.

Sincerely,



Michael Dang
Manager, GMP Compliance



Stability – Shelf Life Guidance

Product Covered: HY115, Hydrogen Peroxide, 35 Percent Solution, FCC

Spectrum Chemical's manufacturing partner has assigned the following shelf life guidance for the product listed above.

The product, HY115, Hydrogen Peroxide, 35 Percent Solution, FCC, is assigned a 24 months shelf life from date of manufacturing. The quality and integrity of the chemical depends on the handling and storage conditions. Please refer to the Safety Data Sheet for proper storage and handling procedures.

Adan R. Hernandez
Quality Control Manager

A handwritten signature in black ink, appearing to read "Adan R. Hernandez".

Corporate Headquarters
769 Jersey Avenue
New Brunswick, NJ 08901-3605