

# SAFETY DATA SHEET

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## SECTION 1 - IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/ UNDERTAKING

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### Contact information

#### General



640 Lee Road, Suite 200  
Wayne, PA 19087  
Main: +1 (484) 324-7933 (Available 9:00 AM - 5:00 PM)  
Fax: + (484) 320-2344  
Email: info@aclaristx.com

#### Emergency telephone number

ChemTel  
+1 (800) 255-3924 (US, Canada, Puerto Rico, U.S. Virgin Islands)  
+1 (813) 248-0585 (International)

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<b>Product identifier</b>	A-101 Hydrogen Peroxide Topical Solution, 40% (w/w)
<b>Synonyms</b>	None identified
<b>Trade names</b>	Eskata
<b>Chemical family</b>	Peroxide
<b>Relevant identified uses of the substance or mixture and uses advised against</b>	Pharmaceutical drug product solution currently approved for the treatment of raised seborrheic keratosis and under development for other dermatological indications.
<b>Note</b>	This SDS is written to address potential worker health and safety issues associated with the handling of the drug product solution.

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## SECTION 2 - HAZARDS IDENTIFICATION

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### Classification of the substance or mixture

**Globally Harmonized  
System [GHS]** Irritant (eye) - Category 1. Irritant (skin) - Category 1. Acute Toxicity (Oral) Category 4. Acute Toxicity (Inhalation) Category 4. Specific Target Organ Toxicity (single exposure) - Category 3. Oxidizing liquid - Category 2.

**Other/Supplemental** Mixture not yet fully tested

### Label elements

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**SECTION 2 - HAZARDS IDENTIFICATION ...continued**

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**GHS hazard pictogram****GHS signal word**

Danger

**GHS hazard statements**

H318 - Causes serious eye damage. H314 - Causes severe skin burns and eye damage. H302 - Harmful if swallowed. H332 - Harmful if inhaled. H335 - May cause respiratory irritation. H336 - May cause drowsiness or dizziness. H272 - May intensify fire; oxidizer.

**GHS precautionary statements**

P210 - Keep away from heat/sparks/open flames/hot surfaces. - No smoking. P220 - Keep away from clothing/combustible materials. P260 - Do not breathe dust/mist/vapors/spray. P270 - Do not eat, drink or smoke when using this product. P280 - Wear protective gloves/eye protection/face protection. P301 + P330 + P331 - IF SWALLOWED: rinse mouth. Do NOT induce vomiting. P303 + P361 + P353 - IF ON SKIN (or hair): Remove/ Take off immediately all contaminated clothing. Rinse skin with water/shower. P304 + P340 - IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. P310 - Immediately call a Poison Center or doctor/physician. P370 + P378 - In case of fire: Use water spray (fog), foam, dry powder or carbon dioxide for extinction. P501 - Dispose of contents/ container to location in accordance with local/regional/national/international regulations.

**Other hazards**

A-101 is a hydrogen peroxide topical formulation currently approved for and under investigation for the treatment of various skin diseases. Common local skin reactions observed 10 minutes after treatment include: erythema (98%), stinging (93%), edema (85%), pruritus (32%), and vesiculation (18%). No serious adverse events were observed. Based on the chemical ingredients, may produce vapors that are irritating to the nose, throat, and mucous membranes, and may be severely irritating to the skin and eyes.

**Note**

This mixture is classified as hazardous under GHS as implemented by Regulation EC No 1272/2008 (EU CLP), WHMIS 2015 (Health Canada), and Hazard Communication Standard No. 1910.1200 (US OSHA).

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**SECTION 3 - COMPOSITION/INFORMATION ON INGREDIENTS**

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<u>Ingredient</u>	<u>CAS #</u>	<u>EINECS/ ELINCS#</u>	<u>Amount</u>	<u>GHS Classification</u>
Isopropanol (Isopropyl alcohol)	67-63-0	200-661-7	5%	FL2: H225; EI2; H319; STOT-S3: H336
Hydrogen Peroxide	7722-84-1	231-765-0	40%	OL1: H271; ATO4: H302; ATI4: H332; SI1A: H314; EI1: H318; STOT-S3: H335

**Note** The ingredient(s) listed above are considered dangerous/hazardous. The remaining component (water) is non-hazardous. See Section 16 for full text of EU and GHS classifications.

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**SECTION 4 - FIRST AID MEASURES**

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**Description of first aid measures****Immediate Medical Attention Needed**

Yes. If exposed or concerned: Get medical advice/attention.

**Eye Contact**

If easy to do, remove contact lenses, if worn. Immediately flush eyes with copious quantities of water for at least 15-30 minutes and notify medical personnel and supervisor.

**Skin Contact**

Wash exposed area with soap and water and remove contaminated clothing/shoes and notify medical personnel and supervisor.

**Inhalation**

Immediately move exposed subject to fresh air. If not breathing, give artificial respiration. If breathing is labored, administer oxygen. Immediately notify medical personnel and supervisor.

**Ingestion**

If swallowed, call a physician immediately. Do not induce vomiting unless directed by medical personnel. Do not give anything to drink unless directed by medical personnel. Never give anything by mouth to an unconscious person. Notify medical personnel and supervisor.

**Protection of first aid responders**

See Section 8 for Exposure Controls/Personal Protection recommendations.

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

See Sections 2 and 11

**Indication of immediate medical attention and special treatment needed, if necessary**

Medical conditions aggravated by exposure: None known or reported. Treat symptomatically and supportively.

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## SECTION 5 - FIREFIGHTING MEASURES

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<b>Extinguishing media</b>	Use water spray (fog), foam, dry powder, or carbon dioxide, as appropriate for surrounding fire and materials.
<b>Specific hazards arising from the substance or mixture</b>	No information identified. May emit carbon monoxide and carbon dioxide.
<b>Flammability/Explosivity</b>	Keep away from heat, sparks, and flame.
<b>Advice for firefighters</b>	In case of fire in the surroundings: use the appropriate extinguishing agent. Wear full protective clothing and an approved, positive pressure, self-contained breathing apparatus. Decontaminate all equipment after use.

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## SECTION 6 - ACCIDENTAL RELEASE MEASURES

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<b>Personal precautions, protective equipment and emergency procedures</b>	Keep container tightly closed. If product is released or spilled, take proper precautions to minimize exposure by using appropriate personal protective equipment (see Section 8). Use only with adequate ventilation. Keep away from heat, sparks, and flame.
<b>Environmental precautions</b>	No special precautions required.
<b>Methods and material for containment and cleaning up</b>	DO NOT CAUSE MATERIAL TO BECOME AIRBORNE. For small spills, soak up material with absorbent, e.g., paper towels. For large spills, cordon off spill area and minimize the spreading of spilled material. Soak up material with absorbent. Collect spilled material, absorbent, and rinse water into suitable containers for proper disposal in accordance with applicable waste disposal regulations (see Section 13). Decontaminate the area twice.
<b>Reference to other sections</b>	See Sections 8 and 13 for more information.

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## SECTION 7 - HANDLING AND STORAGE

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<b>Precautions for safe handling</b>	Follow recommendations for handling pharmaceutical agents (i.e., use of engineering controls and/or other personal protective equipment if needed). Avoid contact with eyes and other mucous membranes. Avoid breathing mist/spray/vapor.
<b>Conditions for safe storage including any incompatibilities</b>	Store at room temperature (~15-30°C) away from incompatible materials. Protect from light, heat, and flame.
<b>Specific end use(s)</b>	Pharmaceutical.

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**SECTION 8 - EXPOSURE CONTROLS/PERSONAL PROTECTION**

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**Control Parameters/  
Occupational Exposure  
Limit Values**

<u>Compound</u>	<u>Issuer</u>	<u>Type</u>	<u>OEL</u>
Isopropanol (Isopropyl alcohol)	ACGIH, Austria, Denmark, Finland, Germany, Portugal, Slovak Republic, Slovenia, Ireland	TWA-8 HR	200 ppm
	ACGIH, France, Portugal	STEL	400 ppm
	Australia, Mexico, Singapore, Belgium, Greece, Spain, United Kingdom, NIOSH, OSHA	TWA-8 HR	400 ppm
	Australia, Mexico, Singapore, Belgium, Greece, NIOSH, OSHA, Spain, United Kingdom		STEL 500 ppm
	Brazil	TWA-8 HR	310 ppm (skin)
	Estonia, Lithuania,	TWA-8 HR	150 ppm

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**SECTION 8 - EXPOSURE CONTROLS/PERSONAL PROTECTION**


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**Control Parameters/  
Occupational Exposure  
Limit Values ...continued**

<u>Compound</u>	<u>Issuer</u>	<u>Type</u>	<u>OEL</u>
	Sweden		
	Ireland	TWA-8 HR	200 ppm (skin)
	Latvia	TWA-8 HR	350 mg/m <sup>3</sup>
	Czech Republic, Hungary	TWA-8 HR	500 mg/m <sup>3</sup> (skin)
	Romania	TWA-8 HR	81 ppm
	Poland	TWA-8 HR	900 mg/m <sup>3</sup> (skin)
	Bulgaria	TWA-8 HR	980 mg/m <sup>3</sup>
	Romania	STEL	203 ppm
	Estonia, Finland, Lithuania, Sweden, France,	STEL	250 ppm
	Portugal		
	Austria, Slovenia	STEL	800 ppm
	Latvia	STEL	600 mg/m <sup>3</sup>
	Poland	STEL	1200 mg/m <sup>3</sup>
	Bulgaria	STEL	1225 mg/m <sup>3</sup>
	Hungary	STEL	2000 mg/m <sup>3</sup>
	Czech Republic	Ceiling	1000 mg/m <sup>3</sup>
	Germany	Ceiling	400 ppm
	NIOSH	IDLH (Immediately dangerous to life or health)	2000 ppm
	Slovak Republic	Ceiling	1000 mg/m <sup>3</sup>
Hydrogen Peroxide	ACGIH, Bulgaria	TLV-TWA (8-HR)	1 ppm
	NIOSH	REL - TWA (8-Hr)	1 ppm
	NIOSH	IDLH (Immediately dangerous to life or health)	75 ppm
	OSHA	PEL - TWA (8-Hr)	1 ppm
	Austria, Belgium, Denmark, Finland, Sweden,		8-HR TWA 1 ppm

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**SECTION 8 – EXPOSURE CONTROLS/PERSONAL PROTECTION...continued**


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**Control Parameters/  
Occupational Exposure  
Limit Values ...continued**

<u>Compound</u>	<u>Issuer</u>	<u>Type</u>	<u>OEL</u>
	<u>United Kingdom</u>		
	France	VME (8-Hour)	1 ppm
	Finland	STEL	3 ppm
	Germany	MAK-TWA (8-Hr)	0.5 ppm
	Netherlands	MAC - TGG	1.4 mg/m <sup>3</sup>
	Poland	MAC (TWA)	1.5 mg/m <sup>3</sup>
	Poland	MAC (STEL)	4 mg/m <sup>3</sup>
	Sweden	Ceiling	2 ppm
	United Kingdom	WEL-TWA	1 ppm
	United Kingdom	STEL (15 min)	2 ppm

**Exposure/Engineering controls**

Selection and use of containment devices and personal protective equipment should be based on a risk assessment of exposure potential. Use local exhaust and/or enclosure at dust-generating points. Emphasis is to be placed on closed material transfer systems and process containment.

**Respiratory protection**

Choice of respiratory protection should be appropriate to the task and the level of existing engineering controls. Use a powered air-purifying respirator equipped with HEPA filters or combination filters or a positive-pressure air-supplied respirator if there is any potential for an uncontrolled release, when exposure levels are not known, or in any other circumstances where a lower level of respiratory protection may not provide adequate protection.

**Hand protection**

Wear appropriate gloves (e.g., nitrile or vinyl) if skin contact is possible. When the material is dissolved or suspended in an organic solvent, wear gloves that provide protection against the solvent.

**Skin protection**

Wear appropriate gloves, lab coat, or other protective overgarment if skin contact is likely. Base the choice of skin protection on the job activity, potential for inadvertent or accidental or unplanned skin contact and solvents and reagents in use.

**Eye/face protection**

Base the choice of protection on the job activity and potential for contact with eyes or face. Wear safety glasses if necessary. An emergency eye wash station or continual source of water should be available.

**Environmental Exposure Controls**

Avoid release to the environment and operate within closed systems wherever practicable. Air and liquid emissions should be directed to appropriate pollution control devices. In case of spill, do not release to drains. Implement appropriate and effective emergency response procedures to prevent release or spread of contamination and to prevent inadvertent contact by personnel.

**Other protective measures**

If accidental contact with the solution occurs, wash hands, especially before eating, drinking or smoking. Protective equipment is not to be worn outside the work area (e.g., in common areas or out-of-doors). Decontaminate all protective equipment following exposure.

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**SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES**

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**Information on basic physical and chemical properties**

<b>Appearance</b>	Liquid
<b>Color</b>	Clear, colorless
<b>Odor</b>	Odorless or mild alcohol odor.
<b>Odor threshold</b>	No information identified.
<b>pH</b>	1.7-3.7.
<b>Melting point/ freezing point</b>	-41 °C (40% Hydrogen peroxide)
<b>Initial boiling point and boiling range</b>	110 °C (40% Hydrogen peroxide)
<b>Flash point</b>	>48 °C
<b>Evaporation rate</b>	>1 (40% Hydrogen peroxide)
<b>Flammability (solid, gas)</b>	No information identified.
<b>Upper/lower flammability or explosive limits</b>	No information identified.
<b>Vapor pressure</b>	22 mm Hg @ 30 °C (40% Hydrogen peroxide)
<b>Vapor density</b>	No information identified.
<b>Relative density</b>	No information identified.
<b>Water solubility</b>	Miscible.
<b>Solvent solubility</b>	Miscible with most organic solvents.
<b>Partition coefficient (<i>n</i>-octanol/water)</b>	-1.5 @ 20 °C (40% Hydrogen Peroxide)
<b>Auto-ignition temperature</b>	No information identified.
<b>Decomposition temperature</b>	100 °C (40% Hydrogen peroxide)



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**SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES...continued**

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<b>Viscosity</b>	Water-like viscosity (1.1 cP at 20 °C for 40% hydrogen peroxide, 2.038 mPa s at 25 °C for isopropyl alcohol)
<b>Explosive properties</b>	No information identified.
<b>Oxidizing properties</b>	Strong oxidizer
<b>Other information</b>	
<b>Molecular formula</b>	Not applicable (Mixture)
<b>Molecular weight</b>	Not applicable (Mixture)

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**SECTION 10 - STABILITY AND REACTIVITY**

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<b>Reactivity</b>	No information identified.
<b>Chemical stability</b>	Stable under recommended handling and storage conditions. Decomposes on heating and on exposure to light and specific metals.
<b>Possibility of hazardous reactions</b>	Contact with organic substances may cause fire or explosion. Contact with metals, metallic ions, alkalis, reducing agents, and organic matter may produce self-accelerated thermal decomposition.
<b>Conditions to avoid</b>	Avoid pH variations and exposure to extreme temperatures, excessive heat, light, and flame.
<b>Incompatible materials</b>	Organic compounds.
<b>Hazardous decomposition products</b>	Oxygen (supports combustion). Liable to over-pressurize container.

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**SECTION 11 - TOXICOLOGICAL INFORMATION**

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**Note** The following data describe the active ingredient and/or the individual ingredients where applicable.

**Information on toxicological effects**

**Route of entry** May be absorbed by inhalation, skin contact and ingestion.

**Acute toxicity**

<u>Compound</u>	<u>Type</u>	<u>Route</u>	<u>Species</u>	<u>Dose</u>
Isopropanol (Isopropyl alcohol)	LC <sub>50</sub>	Inhalation	Rat	72.6 mg/L/4 hours
	LD <sub>50</sub>	Oral	Rat	5000 - 5500 mg/kg
	LD <sub>50</sub>	Oral	Mouse	3600-5030
	LC <sub>50</sub>	Inhalation	Mouse	27.2 mg/L/4 hours
Hydrogen Peroxide	LD <sub>50</sub>	Dermal	Rabbit	~12800 mg/kg
	LD <sub>50</sub>	Oral	Rat	376 mg/kg
	LD <sub>50</sub>	Oral	Mice	2000 mg/kg
	LD <sub>50</sub>	Inhalation	Rat	2000 mg/m <sup>3</sup> /4h

**Irritation/Corrosion** A drop of ≥5% hydrogen peroxide applied to rabbit eyes caused superficial clouding, severe corneal edema, flare in aqueous, intense congestion of the iris, and vascularization of the cornea. Clouding was persistent when >10% was applied.

Mild, transitory injury was observed in rabbits administered isopropyl alcohol onto the eye for 24 hours. When 50% isopropyl alcohol was applied to rabbit eyes for 3 minutes, moderate eye irritation was noted.

**Sensitization** Neither H<sub>2</sub>O<sub>2</sub> nor isopropanol are sensitizing. Skin sensitization by H<sub>2</sub>O<sub>2</sub> was assessed in the local lymph node assay (LLNA) at doses limited by acute irritation to 10% H<sub>2</sub>O<sub>2</sub> (v/v). No potential for sensitization was observed.

**STOT-single exposure** No studies identified.

**STOT-repeated exposure/Repeat-dose toxicity** Dogs exposed to ~90% hydrogen peroxide solution for 6 hours per day, 5 days/week, over 6 months at an average inhalation dose of 7 ppm developed skin irritation, sneezing, tearing in eyes, and bleaching of hair. Rabbits exposed daily for 3 months to inhalation doses of 22 ppm showed no eye injury, although hair was bleached and irritation was noted around the nose. Mice exhibited narcotic effects following inhalation exposures to 1500 and 5000 ppm isopropanol 6 hours /day, 5 days/week.

Rats and minipigs exposed to up to 40% A-101 dermally at least one week apart for 12 weeks exhibited local skin reactions associated with histopathological changes in the skin. All skin changes were found to be fully reversible after cessation of treatment.

**Reproductive toxicity** No studies identified.

**Developmental toxicity** In pregnant rats administered 10% hydrogen peroxide in feed, maternal and fetal weights were reduced but no significant malformations were reported.

Isopropyl alcohol administered orally to pregnant rats, fetal death and

malformations were noted. The NOAEL was 100 mg/kg/day. In pregnant rats, inhalation of 10,000 ppm for 7 hours a day during gestation decreased the number of pregnancies and increased fetal skeletal malformations.

<b>Genotoxicity</b>	Hydrogen peroxide was mutagenic in several bacterial screening assays, and was negative in several mouse micronucleus tests
<b>Carcinogenicity</b>	No carcinogenicity was observed in mice treated topically with isopropyl alcohol three times weekly for 1 year, nor in rats administered up to 5000 ppm inhalation (lethal dose) 5 days/week for 2 years.
<b>Aspiration hazard</b>	Isopropanol is an aspiration hazard.
<b>Human health data</b>	See "Section 2 - Other Hazards"

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## SECTION 12 - ECOLOGICAL INFORMATION

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### Toxicity

<u>Compound</u>	<u>Type</u>	<u>Species</u>	<u>Concentration</u>
Isopropanol (Isopropyl alcohol)	LC <sub>50</sub> /96h	Fathead minnow	9640-10400 mg/L
	EC <sub>50</sub> /48h	Daphnia magna	13299 mg/L
	EC <sub>50</sub> /72h	Scenedesmus supspicatus (algae)	>1000 mg/L
Hydrogen Peroxide	EC <sub>50</sub> (48 h)	<i>Daphnia magna</i> (water flea)	2.32 mg/L
	EC <sub>50</sub> (48 h)	<i>Daphnia pulex</i> (Water flea)	2.40 mg/L
	EC <sub>50</sub> 3-hour	Pseudokirchneriella subcapitata (green algae)	4.05 mg/L
	LC <sub>50</sub> (96 h), semi-static	Pimephales promelas (fathead minnow)	16.4 mg/L
	NOEC (72h)	<i>Skeletonema costatum</i> (algae)	0.63 mg/L
	NOEC/21 days (flow-through)	<i>Daphnia Magna</i> (Water Flea)	0.63 mg/L
	EC <sub>50</sub> /30 min	Activated sludge bacteria	466 mg/L
EC <sub>50</sub> 3-hour	Activated sludge bacteria	>1000 mg/L	

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**SECTION 12 - ECOLOGICAL INFORMATION...continued**

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<b>Persistence and Degradability</b>	Hydrogen peroxide in the environment decomposes into water and oxygen. In fresh-water, hydrogen peroxide has a half-life of 8-20 days, in air from 10-20 hours, and in soils up to a few hours depending on microbiological activity and metal contamination. Isopropanol has a half-life of ~3 days in air, ~29 days in freshwater, and is expected to have very high mobility in soil.
<b>Bioaccumulative potential</b>	Hydrogen peroxide may have some potential to bioaccumulate but will likely degrade in most environments before accumulation can occur. Isopropanol has low potential for bioaccumulation.
<b>Mobility in soil</b>	No data available.
<b>Results of PBT and vPvB assessment</b>	Not applicable.
<b>Other adverse effects</b>	No data available.

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**SECTION 13 - DISPOSAL CONSIDERATIONS**

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<b>Waste treatment methods</b>	Used product should be disposed of according to local, state, and federal regulations. All wastes containing the material should be properly labeled. Dispose of wastes in accordance to prescribed federal, state, and local guidelines, e.g., appropriately permitted chemical waste incinerator. Rinse waters resulting from spill cleanups should be discharged in an environmentally safe manner, e.g., appropriately permitted municipal or on-site wastewater treatment facility.
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**SECTION 14 - TRANSPORT INFORMATION**

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<b>Transport</b>	Based on the available data, this mixture is regulated as a hazardous material/ dangerous good under EU ADR/RID, US DOT, Canada TDG, IATA, or IMDG.
<b>UN number</b>	2014
<b>UN proper shipping name</b>	Hydrogen Peroxide, Aqueous Solution with not less than 20% but not more than 40% (stabilized as necessary).
<b>Transport hazard classes and packing group</b>	
<b>US DOT shipping description</b>	Class: 5.1 Packing Group: II (LQ/EQ apply)
<b>IATA/ICAO shipping description</b>	Class: 5.1 Packing Group: II (LQ/EQ apply)
<b>IMDG shipping description</b>	Class: 5.1 Packing Group: II (LQ / EQ apply)

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**SECTION 14 - TRANSPORT INFORMATION ...continued**

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<b>ADR Shipping Description</b>	Class: 5.1 Packing Group: II (LQ / EQ apply)
<b>Environmental hazards</b>	Based on the available data, this mixture is not regulated as an environmental hazard or a marine pollutant.
<b>Special precautions for users</b>	Consult competent authority for exempted quantity and limited quantity provisions.
<b>Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code</b>	Not applicable.

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**SECTION 15 - REGULATORY INFORMATION**

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<b>Safety, health and environmental regulations/legislation specific for the substance or mixture</b>	This SDS generally complies with the requirements listed under current guidelines in the US, EU and Canada. Consult your local or regional authorities for more information.
<b>Chemical safety assessment</b>	Not conducted.
<b>TSCA status</b>	Not listed
<b>SARA section 313</b>	Not listed.
<b>California proposition 65</b>	Not listed.
<b>Additional information</b>	No other information identified.

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**SECTION 16 - OTHER INFORMATION**

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<b>Full text of H phrases and GHS classifications</b>	ATI4 - Acute Toxicity (Inhalation) Category 4. H332 - Harmful if inhaled. ATO4 - Acute Toxicity (Oral) Category 4. H302 - Harmful if swallowed. H335 - May cause respiratory irritation. H336 - May cause drowsiness or dizziness. STOT-S3 - Specific Target Organ Toxicity Following Single Exposure Category 3. EI1 - Eye Irritant Category 1. H318 - Causes serious eye damage. H314 - Causes severe skin burns and eye damage. SI1 - Skin Irritant Category 1. H272 - May intensify fire; oxidizer. OL2 - Oxidizing Liquid Category 2. H271 - May cause fire or explosion; strong oxidizer. OL1 - Oxidizing Liquid Category 1. FL2 - Flammable Liquid Category 2. H225 - Highly flammable liquid and vapor. EI2 - Eye Irritant Category 2. H319 - Causes serious eye irritation.
<b>Sources of data</b>	Information from published literature and internal company data.

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**SECTION 16 - OTHER INFORMATION ...continued**

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**Abbreviations**

ACGIH - American Conference of Governmental Industrial Hygienists; ADR/RID - European Agreement Concerning the International Carriage of Dangerous Goods by Road/Rail; AIHA - American Industrial Hygiene Association; CAS# - Chemical Abstract Services Number; CLP - Classification, Labelling, and Packaging of Substances and Mixtures; DNEL - Derived No Effect Level; DOT - Department of Transportation; EINECS - European Inventory of New and Existing Chemical Substances; ELINCS - European List of Notified Chemical Substances; EU - European Union; GHS - Globally Harmonized System of Classification and Labeling of Chemicals; IARC - International Agency for Research on Cancer; IDLH - Immediately Dangerous to Life or Health; IATA - International Air Transport Association; IMDG - International Maritime Dangerous Goods; LOEL - Lowest Observed Effect Level; LOAEL - Lowest Observed Adverse Effect Level; NIOSH - The National Institute for Occupational Safety and Health; NOEL - No Observed Effect Level; NOAEL - No Observed Adverse Effect Level; NTP - National Toxicology Program; OEL - Occupational Exposure Limit; OSHA - Occupational Safety and Health Administration; PNEC - Predicted No Effect Concentration; SARA - Superfund Amendments and Reauthorization Act; STOT - Specific Target Organ Toxicity; STEL - Short Term Exposure Limit; TDG - Transportation of Dangerous Goods; TSCA - Toxic Substances Control Act; TWA - Time Weighted Average; WHMIS - Workplace Hazardous Materials Information System

**Issue Date**

26 April 2018

**Revisions**

Revision 2.0

**Disclaimer**

The above information is based on data available to us and is believed to be correct. Since the information may be applied under conditions beyond our control and with which we may be unfamiliar, we do not assume any responsibility for the results of its use and all persons receiving it must make their own determination of the effects, properties and protections which pertain to their particular conditions.

No representation, warranty, or guarantee, express or implied (including a warranty of fitness or merchantability for a particular purpose), is made with respect to the materials, the accuracy of this information, the results to be obtained from the use thereof, or the hazards connected with the use of the material. Caution should be used in the handling and use of the material because it is a potent pharmaceutical product. The above information is offered in good faith and with the belief that it is accurate. As of the date of issuance, we are providing all information relevant to the foreseeable handling of the material. However, in the event of an adverse incident associated with this product, this Safety Data Sheet is not, and is not intended to be, a substitute for consultation with appropriately trained personnel.