MATERIAL SAFETY DATA SHEET

Prepared to U.S. OSHA, CMA, ANSI, Canadian WHMIS Standards, Australian WorkSafe, Japanese Industrial Standard JIS Z 7250:2000, and European Directives

1. PRODUCT IDENTIFICATION

TRADE NAME (AS LABELED):	**Hydrogen Peroxide 20% - 40%**
PRODUCT NUMBER:	
CHEMICAL NAME/CLASS:	Hydrogen Peroxide,Aqueous Solution (with 20-40%Hydrogen Peroxide)
U.N. NUMBER:	UN 2014
U.N. DANGEROUS GOODS CLASS/SUBSIDIARY RISK:	Hazard Class 5.1, 8 Packing group II
MANUFACTURER'S NAME:	**NuGeneration Technologies, LLC**
ADDRESS:	100 Professional Center Drive, Rohnert Park, CA 94928 USA
EMERGENCY PHONE:	(800) 424-9300 (**CHEMTREC**)
BUSINESS PHONE:	(707) 820-4080 (Product Information)
DATE OF PREPARATION:	February 10, 2010
DATE OF LAST REVISION:	New

2. COMPOSITION and INFORMATION ON INGREDIENTS

Hazardous Ingredients:	CAS #	EC #	ICSC #	WT %	Hazard Symbol; Risk Phrases
Hydrogen Peroxide	7722-84-1	231-765-0	0362	98%	HAZARD CLASSIFICATION: [O] OXIDIZER,[Xn] HARMFUL, [C] CORROSIVE RISK PHRASES: R8, R22, R34, R41
Water	7732-18-5	231-791-2			NOT CLASSIFIED

NOTE: ALL WHMIS required information is included in appropriate sections based on the ANSI Z400.1-2004 format. This product has been classified in accordance with the hazard criteria of the CPR and the MSDS contains all the information required by the CPR, EU Directives and the Japanese Industrial Standard *JIS Z 7250: 2000*.

See Section 3 for full text of Risk Phrases and Safety Phrases

3. HAZARD IDENTIFICATION

EU LABELING AND CLASSIFICATION: This product meets the definition of the following hazard class as defined by the European Economic Community Guidelines.

EU CLASSIFICATION: [O] OXIDIZER, [Xn] HARMFUL. [C] CORROSIVE

EU RISK PHRASES: R 8: Contact with combustible material may cause fire; R22: Harmful if swallowed; R34: Causes burns; R41: Risk of serious damage to eyes.

EU SAFETY PHRASES: S3: Keep in cool place; S28: After contact with skin, wash immediately with plenty of water; S37: Wear suitable gloves; S39: Wear eye/face protection; S45: In case of accident or if you feel unwell, seek medical advice immediately.

EMERGENCY OVERVIEW: **Product Description:** This product is a clear colorless liquid, with a slight acrid odor. **Health Hazards:** DANGER STRONG OXIDIZER! May cause eye and skin burns. Causes digestive and respiratory tract burns. **Flammability Hazards:** This material has a non-flammable rating. Contact with other combustible material may cause fire.**Environmental Hazards:** Release of this product to the environment is expected to be toxic to aquatic life. If accidentally released, precautions must be taken to protect the environment. **Emergency Considerations:** In the event of fire or spill, adequate precautions must be taken for surrounding materials. Emergency responders must wear personal protective equipment suitable for the situation to which they are responding.

SYMPTOMS OF OVEREXPOSURE BY ROUTE OF EXPOSURE: The most significant routes of overexposure for this product are by inhalation, skin or eye contact and by ingestion. The symptoms of overexposure are described in the following paragraphs.

INHALATION: Inhalation produces damaging effects on the mucous membranes and upper respiratory tract. Symptoms may include irritation of the nose and throat, and labored breathing. May cause lung edema, a medical emergency.

CONTACT WITH SKIN or EYES: Corrosive - Contact may cause redness, pain and severe burn can occur. Contact with eyes may cause blurred vision, redness, pain and severe tissue burns. Can cause permanent tissue destruction.

INGESTION: Corrosive – Swallowing can cause severe burns of the mouth, throat and stomach, leading to death. Circulatory shock is often the immediate cause of death.

HEALTH EFFECTS OR RISKS FROM EXPOSURE:

ACUTE: Contact with skin or eyes may cause severe burns. Inhalation will cause burns of the upper respiratory tract.

CHRONIC: No information found.

TARGET ORGANS: Acute: Skin, eyes, respiratory system. **Chronic:** Skin, eyes and target organs.

4. FIRST-AID MEASURES

Contaminated individuals of chemical exposure must be taken for medical attention if any adverse effect occurs. Rescuers should be taken for medical attention, if necessary. Take copy of label and MSDS to health professional with contaminated individual.

SKIN EXPOSURE: If this product contaminates the skin, begin decontamination by flushing immediately with soap and water. Minimum flushing is for 15 minutes. Remove exposed or contaminated clothing. The contaminated individual must seek medical attention immediately.

EYE EXPOSURE: If this product enters the eyes, open contaminated individual's eyes while under gently running water. Use sufficient force to open eyelids. Have contaminated individual "roll" eyes. Minimum flushing is for 15 minutes. Seek medical attention immediately.

INHALATION: If vapors or mists generated by this product are inhaled, remove contaminated individual to fresh air. If breathing is difficult, give oxygen. Seek medical attention immediately.

INGESTION: Induce vomiting immediately as directed by medical personnel. Never give anything by mouth to an unconscious person. Get medical attention immediately.

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE: Skin and respiratory disorders, as well as conditions involving the “Target Organs” (see Section 3, Hazard Identification) may be aggravated by prolonged overexposures to this product.

RECOMMENDATIONS TO PHYSICIANS: Treat symptoms and eliminate overexposure.

5. FIRE-FIGHTING MEASURES

FLASH POINT: Caustic material, Fire is possible at elevated temperatures or by contact with ignition source.

AUTOIGNITION TEMPERATURE: Not Applicable

FLAMMABLE LIMITS (in air by volume, %): Not Applicable

FIRE EXTINGUISHING MATERIALS: Water spray may be used to keep fire exposed containers cool.

Water Spray: No	Carbon Dioxide: Yes
Foam: Yes	Dry Chemical: Yes

Halon: Yes Other: Any "C" Class

UNUSUAL FIRE AND EXPLOSION HAZARDS: Contact with oxidizable substances may cause extremely violent combustion. Sealed containers may rupture when heated.

SPECIAL FIRE-FIGHTING PROCEDURES: Incipient fire responders should wear Self-Contained Breathing Apparatus and full protective equipment. Isolate materials not yet involved in the fire and protect personnel. Move containers from fire area if this can be done without risk; otherwise, cool with carefully applied water spray. If possible, prevent runoff water from entering storm drains, bodies of water, or other environmentally sensitive areas.

6. ACCIDENTAL RELEASE MEASURES

SPILL AND LEAK RESPONSE: Uncontrolled releases should be responded to by appropriately trained personnel using pre-planned procedures. Proper protective equipment should be used. Ventilate area of leak or spill. Keep unnecessary and unprotected people away from area of spill. Wear appropriate protective equipment as specified in section 8.

SPILLS: Contain and recover liquid when possible. Neutralize with sodium metabisulfite or sodium sulfite after diluting to 5 – 10% peroxide, then absorb with an inert material, and place in a chemical waste container.

U.S. Regulations (CERCLA) requires reporting spills and releases to soil, water and air in excess of reportable quantities. Prevent entry into sewers, basements or confined areas, dike if needed. Dispose of in accordance with U.S. Federal, State, and local hazardous waste disposal regulations, including those of Canada and its Provinces, those of Australia, Japan and EU Member States (see Section 13, Disposal Considerations).

7. HANDLING and STORAGE

WORK PRACTICES AND HYGIENE PRACTICES: As with all chemicals, avoid getting this product ON YOU or IN YOU. Wash thoroughly after handling this product. Do not eat, drink, smoke, or apply cosmetics while handling this product. Avoid breathing dusts generated by this product. Use in a well-ventilated location. Remove contaminated clothing immediately.

STORAGE AND HANDLING PRACTICES: All employees who handle this material should be trained to handle it safely. Avoid contact with eyes, skin, and clothing. Store in cool, dry, ventilated area. Do not store on wooden floor or shelves. Protect from physical damage. Keep out of direct sunlight and away from heat, water, and incompatible materials. Do not wash out container and use it for other purposes. When diluting always add acid to water; never add water to the acid. Containers of this material may be hazardous when empty since they retain product residues (vapors, liquid). Observe all warnings and precautions listed for this product.

8. EXPOSURE CONTROLS - PERSONAL PROTECTION

VENTILATION AND ENGINEERING CONTROLS: Use with adequate ventilation to ensure exposure levels are maintained below the limits provided below. Use a chemical fume hood or local exhaust ventilation, and process enclosure if necessary, to control airborne dust. Ensure eyewash/safety shower stations are available near areas where this product is used.

EXPOSURE LIMITS/GUIDELINES:

CHEMICAL NAME	CAS #	EXPOSURE LIMITS IN AIR									
		ACGIH-TLVs		OSHA-PELs		NIOSH-RELs		NIOSH	AIHA WEELs		OTHER
		TWA ppm	STEL ppm	TWA ppm	STEL ppm	TWA ppm	STEL ppm	IDLH ppm	TWA ppm	STEL ppm	ppm
Hydrogen Peroxide	7722-84-1	1 ppm	NE	1 ppm	NE	1 ppm	NE	NE	N.E.	N.E	DFG MAKs:

NE = Not Established. NIC = Notice of Intended Change See Section 16 for Definitions of Terms Used.

The following information on appropriate Personal Protective Equipment is provided to assist employers in complying with OSHA regulations found in 29 CFR Subpart I (beginning at 1910.132) or equivalent standard of Canada, or standards of EU member states (including EN 149 for respiratory PPE, and EN 166 for face/eye protection), and those of Japan. Please reference applicable regulations and standards for relevant details.

RESPIRATORY PROTECTION: Maintain airborne contaminant concentrations below guidelines listed above, if applicable. If necessary, use only respiratory protection authorized in the U.S. Federal OSHA Respiratory Protection Standard (29 CFR 1910.134), equivalent U.S. State standards, Canadian CSA Standard Z94.4-93, the European Standard EN149, or EU member states. Oxygen levels below 19.5% are considered IDLH by OSHA. In such atmospheres, use of a full-facepiece pressure/demand SCBA or a full facepiece, supplied air respirator with auxiliary self-contained air supply is required under U.S. Federal OSHA's Respiratory Protection Standard (1910.134-1998) or the regulations of various U.S. States, Canada, EU Member States, or those of Japan. Air-purifying respirators with dust/mist/fume filters are recommended if operations may produce mists or sprays from this product.

EYE PROTECTION: Safety glasses. If necessary, refer to U.S. OSHA 29 CFR 1910.133, Canadian Standards, and the European Standard EN166, Australian Standards, or relevant Japanese Standards. Maintain eye wash fountain and quick drench facilities in the work area.

HAND PROTECTION: Use chemically-resistant gloves when handling this product. If necessary, refer to U.S. OSHA 29 CFR 1910.138, the European Standard DIN EN 374, the appropriate Standards of Canada, Australian Standards, or relevant Japanese Standards.

BODY PROTECTION: Use body protection appropriate for task (e.g. lab coat, overalls). If necessary, refer to appropriate Standards of Canada, or appropriate Standards of the EU, Australian Standards, or relevant Japanese Standards. If a hazard of injury to the feet exists due to falling objects, rolling objects, where objects may pierce the soles of the feet or where employee's feet may be exposed to electrical hazards, use foot protection, as described in U.S. OSHA 29 CFR 1910.136.

9. PHYSICAL and CHEMICAL PROPERTIES

VAPOR DENSITY: Not Available (Air=10)
SPECIFIC GRAVITY @ 20°C: 1.11 (water=1)
SOLUBILITY IN WATER: 100%
VAPOR PRESSURE, mm Hg @ 20°C (68°F): 24
ODOR: Slight acrid odor
APPEARANCE and COLOR: Clear colorless Liquid

EVAPORATION RATE (n-BuAc=1): No Data
MELTING POINT: -26ºC
BOILING POINT: 107º C
pH: ~ 5.0 -6.0

10. STABILITY and REACTIVITY

STABILITY: Stable

DECOMPOSITION PRODUCTS: Oxygen which supports combustion.

MATERIALS WITH WHICH SUBSTANCE IS INCOMPATIBLE: Reducing agents, wood, paper, and other combustibles, iron and other heavy metals, copper alloys and caustic.

HAZARDOUS POLYMERIZATION: Has not been reported

CONDITIONS TO AVOID: Incompatibles.

11. TOXICOLOGICAL INFORMATION

TOXICITY DATA: The specific toxicology data available for components greater than 1% in concentration are as follows.
Suspected animal carcinogen and probable human carcinogen. May cause irreversible effects. May be fatal if swallowed. May cause severe eye and skin damage

TOXICITY DATA:
ORL-RAT LD50 = 1193 mg/kg
DERMAL-rabbit LD50 = >2000 mg/kg

SUSPECTED CANCER AGENT: This product is not found on one or more of the following lists: FEDERAL OSHA Z LIST, NTP, IARC, or CAL/OSHA and therefore is not considered to be, or suspected to be, cancer-causing agents by these agencies.

IRRITANCY OF PRODUCT: This product is irritating to skin, eyes and respiratory tract.

REPRODUCTIVE TOXICITY INFORMATION: Listed below is information concerning the effects of this product and its components on the human reproductive system.

Mutagenicity: The components of this product are not reported to produce mutagenic effects in humans.
Embryotoxicity: The components of this product are reported to produce embryotoxic effects in humans.
Teratogenicity: The components of this product are reported to cause teratogenic effects in humans.
Reproductive Toxicity: The components of this product are reported to cause reproductive effects in humans.

BIOLOGICAL EXPOSURE INDICES: Currently, Biological Exposure Indices (BEIs) have not been determined for the components of this product.

12. ECOLOGICAL INFORMATION

ALL WORK PRACTICES MUST BE AIMED AT ELIMINATING ENVIRONMENTAL CONTAMINATION.

ENVIRONMENTAL FATE: Hydrogen Peroxide in the aquatic environment is subject to various reduction or oxidation processes and decomposes into water and oxygen. Hydrogen peroxide half life in fresh water ranged from 8 hours to 20 days, in air from 10-20 hrs and in soil from minutes to hours depending upon microbiological activity and metal contaminants.

ECOLOGICAL DATA:

Fish: No data available
Algae: No data available
Daphnia: No data available

13. DISPOSAL CONSIDERATIONS

PREPARING WASTES FOR DISPOSAL: Waste disposal must be in accordance with appropriate U.S. Federal, State, and local regulations, those of Canada, Australia, EU Member States and Japan.

14. TRANSPORTATION INFORMATION

US DOT, IATA, IMO, ADR:

PROPER SHIPPING NAME: Hydrogen Peroxide, Aqueous Solution with more than 20%, but not more than 40% hydrogen peroxide
HAZARD CLASS NUMBER: 5.1, 8
UN IDENTIFICATION NUMBER: UN2014 PACKING GROUP: II
DOT LABEL(S) REQUIRED: OXIDIZER, CORROSIVE
NORTH AMERICAN EMERGENCY RESPONSE GUIDEBOOK NUMBER, 2004: 140

MARINE POLLUTANT**:** This product is not designated as a marine pollutant by the Department of Transportation (49 CFR 172.101, Appendix B).

INTERNATIONAL AIR TRANSPORT ASSOCIATION SHIPPING INFORMATION (IATA): This product is considered as dangerous goods.

INTERNATIONAL MARITIME ORGANIZATION SHIPPING INFORMATION (IMO): This product is considered as dangerous goods.

EUROPEAN AGREEMENT CONCERNING THE INTERNATIONAL CARRIAGE OF DANGEROUS GOODS BY ROAD (ADR): This product is considered by the United Nations Economic Commission for Europe to be dangerous goods.

15. REGULATORY INFORMATION

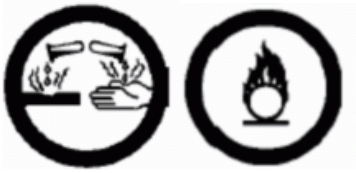
ADDITIONAL UNITED STATES REGULATIONS:

U.S. SARA REPORTING REQUIREMENTS: The components of this product are subject to the reporting requirements of Sections 302, 304, and 313 of Title III of the Superfund Amendments and Reauthorization Act, and are listed as follows:

CHEMICAL NAME	SARA 302 (40 CFR 355, Appendix A)	SARA 304 (40 CFR Table 302.4)	SARA 313 (40 CFR 372.65)
Hydrogen Peroxide	NO	NO	NO

ADDITIONAL UNITED STATES REGULATIONS (continued):

U.S. SARA THRESHOLD PLANNING QUANTITY: There are no specific Threshold Planning Quantities for the components of this product. The default Federal MSDS submission and inventory requirement filing threshold of 10,000 lbs (4,540 kg) therefore applies, per 40 CFR 370.20.
U.S. CERCLA REPORTABLE QUANTITY (RQ): None
U.S. TSCA INVENTORY STATUS: The components of this product are listed on the TSCA Inventory.
SARA 311/312: Acute: Yes Chronic: No Fire: Yes Pressure: No
CALIFORNIA SAFE DRINKING WATER AND TOXIC ENFORCEMENT ACT (PROPOSITION 65): This product is not on the Proposition 65 Lists.
CANADIAN REGULATIONS:
CANADIAN DSL/NDSL INVENTORY STATUS: The components of this product are on the DSL or NDSL Inventories
CANADIAN WHMIS CLASSIFICATION and SYMBOLS: D2B, E, C



CANADIAN INGREDIENT DISCLOSURE LIST: CAS# 7722-84-1 is listed on the Canadian Ingredient Disclosure List.
EUROPEAN ECONOMIC COMMUNITY INFORMATION:
EU CLASSIFICATION: [O] OXIDIZER, [Xn] HARMFUL. [C] CORROSIVE
EU RISK PHRASES: R 8: Contact with combustible material may cause fire; R22: Harmful if swallowed; R34: Causes burns; R41: Risk of serious damage to eyes.
EU SAFETY PHRASES: S3: Keep in cool place; S28: After contact with skin, wash immediately with plenty of water; S37: Wear suitable gloves; S39: Wear eye/face protection; S45: In case of accident or if you feel unwell, seek medical advice immediately.

EUROPEAN ECONOMIC COMMUNITY INFORMATION FOR CONSTITUENTS: The following information is available for the components of this product.

Hydrogen Peroxide**:**
EU EINECS/ELINCS NUMBER: 231-765-0

AUSTRALIAN INFORMATION FOR PRODUCT:

AUSTRALIAN INVENTORY OF CHEMICAL SUBSTANCES (AICS) STATUS: The components of this product are listed on the AICS.

HAZARDOUS SUBSTANCES INFORMATION SYSTEM: Hydrogen Peroxide is listed by the Hazardous Substances Information System as a Hazardous Substance.

STANDARD FOR THE UNIFORM SCHEDULING OF DRUGS AND POISONS: Not applicable.

JAPANESE INFORMATION FOR PRODUCT:

JAPANESE MINISTER OF INTERNATIONAL TRADE AND INDUSTRY (MITI) STATUS: The components of this product are not listed as Class I Specified Chemical Substances, Class II Specified Chemical Substances, or Designated Chemical Substances by the Japanese MITI.

JAPANESE ENCS INVENTORY: The components of this product are on the ENCS Inventory as indicated in the section on International Chemical Inventories, below.

POISONOUS AND DELETERIOUS SUBSTANCES CONTROL LAW: No component of this product is a listed Specified Poisonous Substance under the Poisonous and Deleterious Substances Control Law.

INTERNATIONAL CHEMICAL INVENTORIES:

Listing of the components on individual country Chemical Inventories is as follows:

Hydrogen Peroxide is listed on the following inventories:

Asia-Pac: Listed
Australian Inventory of Chemical Substances (AICS): Listed
Korean Existing Chemicals List (ECL): Listed
Japanese Existing National Inventory of Chemical Substances (ENCS): Listed
Philippines Inventory if Chemicals and Chemical Substances (PICCS): Listed
Swiss Giftliste List of Toxic Substances: Listed
U.S. TSCA: Listed

16. OTHER INFORMATION

HAZARDOUS MATERIAL IDENTIFICATION SYSTEM

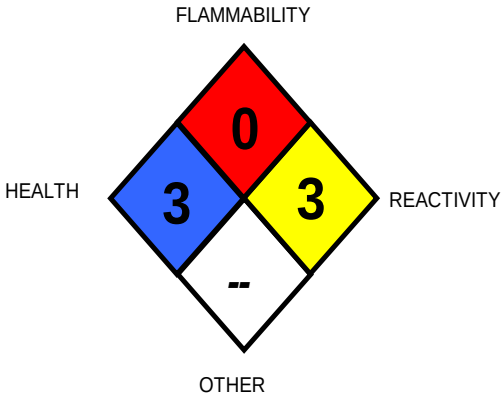
HEALTH HAZARD	(BLUE)	3
FLAMMABILITY HAZARD	(RED)	0
PHYSICAL HAZARD	(YELLOW)	3

PROTECTIVE EQUIPMENT

EYES	RESPIRATORY	HANDS	BODY
	SEE SECTION 8		SEE SECTION 8

For Routine Industrial Use and Handling Applications

Hazard Scale: **0** = Minimal **1** = Slight **2** = Moderate
3 = Serious **4** = Severe * = Chronic hazard



NFPA RATING

PREPARED BY: Paul Eigbrett - MSDS Authoring Services
DATE: February 10, 2010

End of MSDS