Bioquell Hydrogen Peroxide Sterilant HPV-AQ

SAFETY DATA SHEET

ACCORDING TO OSHA HAZARD COMMUNICATION STANDARD (HCS) (29 CFR 1910.1200(g))

SECTION 1. IDENTIFICATION

1.1 Product identifier

Product Name	:	Bioquell Hydrogen Peroxide Sterilant HPV-AQ
Chemical Name	:	Hydrogen Peroxide Solution 20-40%
Molecular Formula	:	H_2O_2
Type of Product	:	Mixture

1.2 Relevant identified uses of the mixture and restrictions on use

Identified use(s)	:	Bioquell Hydrogen Peroxide Sterilant is a sterilant for use in conjunction with Bioquell Hydrogen Peroxide Vapor generating equipment. Bioquell Hydrogen Peroxide Vapor is intended for a use as a sterilant in treating enclosures up to 3500 ft^3. This product must be used as instructed in the Bioquell use manual. Bioquell Hydrogen Peroxide Sterilant may not be used on food-contact surfaces unless followed by a potable water rinse.

1.3 Details of the supplier of the Safety Data Sheet

Company Identification	:	Bioquell Inc.
Address	:	702 Electronic Drive, Suite 200 Horsham PA 19044 USA
Telephone (General Information)	:	(215) 682 0225
E-mail (General Information)	:	ed.striefsky@bioquell.com

1.4 Emergency telephone number

Emergency telephone number	:	USA (Toll-Free): +1 866 519 4752 USA: +1 760 476 3962 Use access code: 333809

SECTION 2. HAZARD(S) IDENTIFICATION

2.1 Classification of the substance or mixture

2.1.1	**According to OSHA Hazard Communication Standard (HCS) (29 CFR 1910.1200(g))**	:	Acute Tox. 4: Oral, H302. Inhalation, H332 Skin Irrit. 2, H315 Serious Eye Dam. 1, H318 STOT SE 3. Inhalation, H335 Oxidizing liquid 2, H272

2.2 Label elements

2.2.1	**Label elements**	:	According to OSHA Hazard Communication Standard (HCS) (29 CFR 1910.1200(g))
	Name(s) on Label	:	Bioquell HPV-AQ
	Hazardous components	:	Hydrogen peroxide (35%)
	Signal Word	:	DANGER
	Hazard Pictogram	:	

Hazard statement(s) : **H302**: Harmful if swallowed
H315: Causes skin irritation
H332: Harmful if inhaled
H318: Causes serious eye damage
H335: May cause respiratory irritation
H272: May intensify fire; oxidizer

Precautionary statement(s)

Prevention : **P261**: Avoid breathing mist / vapors / spray
P270: Do not eat, drink or smoke when using this product
P280: Wear protective gloves / protective clothing / eye protection / face protection
P210: Keep away from heat / sparks / open flames / hot surfaces – no smoking
P221: Take any precaution to avoid mixing with combustibles / flammables
P220: Keep / store away from clothing / flammable materials / combustibles

Response : **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
P302+P352: IF ON SKIN: Wash with plenty of water
P332+P313: If skin irritation occurs: Get medical advice /attention
P362+P364: Take off all contaminated clothing and wash it before reuse
P304+P340: IF INHALED: Remove person to fresh air and keep comfortable for breathing
P301+P312+P330: IF SWALLOWED; Call a POISON CENTER or doctor if you feel unwell. Rinse mouth
P370+P378: In case of fire: use water for extinction

Disposal : **P501**: Dispose of contents / container in accordance with applicable local regulations

2.3 Other hazards : No hazards not otherwise classified were identified.

2.4 Additional Information : Keep container in a cool place out of direct sunlight. Store only in well vented containers. Do not store on wooden pallets. Do not return unused material to its original container. Avoid contamination – contamination could cause decomposition and generation of oxygen which may result in high pressure and possible container rupture. Empty containers should be triple rinsed with water before discarding.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Mixtures

3.1.1 Concentration

Substance Name:	Concentration:
Hydrogen peroxide solution CAS-No.: 7722-84-1	Ca. 35%

Classification according to OSHA Hazard Communication Standard (HCS) (29 CFR 1910.1200(g))

Hazardous ingredient(s)	Hazard Class	Hazard Category	Route of exposure	H Phrases	Hazard pictogram(s) and Hazard statement(s)
Hydrogen peroxide solution 35%	Acute toxicity	Category 4	Inhalation	H332	Acute Tox. 4 (Inhalation), H332 Acute Tox. 4 (Oral), H302 Skin Irrit. 2, H315 Eye Dam. 1, H318 STOT SE3, H335 Ox. Liq. 2, H272
	Acute toxicity	Category 4	Oral	H302	
	Skin irritant	Category 2		H315	
	Serious eye damage	Category 1		H318	
	Specific target organ toxicity – single exposure	Category 3	Inhalation	H335	
	Oxidizing liquid	Category 2		H272	

3.2 Additional Information : For full text of H/P phrases see section 2.

SECTION 4. FIRST AID MEASURES

First aiders should refer to section 8 for appropriate PPE

4.1 Description of first aid measures

If inhaled : Move the exposed person to fresh air immediately. If person is not breathing, contact emergency medical services, then give artificial respiration, preferably mouth-to-mouth if possible. Call a poison centre or doctor for further treatment advice.

In case of skin contact : Wash with plenty of water and soap.
Remove and wash contaminated clothing before re-use.
If symptoms persist seek immediate medical attention.

In case of eye contact : Seek immediate medical attention.
Eyes should be washed immediately with plenty of water, also under the eyelids for 15-20 minutes.Remove contact lenses, if present, after the first 5 minutes, then continue rinsing.

If swallowed : Seek immediate medical attention.
Rinse mouth and, if conscious, give 2 glasses of water. Never give anything by mouth to an unconscious person.
DO NOT INDUCE VOMITING.
Oxygen or artificial respiration if needed.

4.2 Most important symptoms and effects, both acute and delayed

Inhalation : Inhalation of vapours is irritating to the respiratory system, may cause throat pain and cough
Risk of: Nose bleeding, chronic bronchitis.

Skin Contact : Irritation
Risk of: Burn, erythema, blisters or even necrosis.

Eye Contact : Severe eye irritation
Risk of serious damage to eyes
Symptoms: Redness, Lachrymation, swelling of tissue.

Ingestion : Severe irritation
Symptoms: Nausea, Abdominal pain, Vomiting, Diarrohea, Risk of chemical pneumonitis from product inhalation

4.3 Indication of immediate medical attention and special treatment needed : Consult with an ophthalmologist immediately in all cases.
If accidently swallowed obtain immediate medical attention.
When symptoms persist or in all cases of doubt, seek medical attention. Because of the likelihood of corrosive effects on the gastrointestinal tract after ingestion, attempts at evacuating the stomach via emesis induction or gastric lavage should be avoided.

SECTION 5. FIRE-FIGHTING MEASURES

5.1 Extinguishing Media

Suitable Extinguishing Media : Water, do not use any other substance

Unsuitable Extinguishing Media : As above

5.2 Special hazards arising from the substance or mixture : Not combustible. Decomposes under fire conditions to release oxygen that intensifies the fire. Risk of explosion in closed, unventilated containers due to increased pressure from decomposition gases. Contact with combustible material may cause fire

5.3	**Advice for fire-fighters**	:	Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA). Wear chemical resistant oversuit and boots (rubber or PVC) Cool containers/tanks with water spray If safe to do so, move product away from fire to secure area Prevent fire extinguishing water from contaminating surface water or the ground water system.

SECTION 6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

Advice for non-emergency personnel	:	Avoid contact with skin, eyes and clothing. Prevent further leakage or spillage if safe to do so. Isolate and signpost spill area. Eliminate all sources of ignition.
Advice for emergency responders	:	Wear suitable protective equipment. Refer to section 5 for fire-fighting; section 4 for first-aid advice; and section 8 for minimum requirements for personal protective equipment. Evacuate personnel to safe areas Keep people away from and up wind of spill/leak. Combustible materials exposed to hydrogen peroxide should be immediately submerged in or rinsed with large amounts of water to ensure that all hydrogen peroxide is removed. Residual hydrogen peroxide that is allowed to dry (upon evaporation hydrogen peroxide can concentrate) on organic materials such as paper, fabrics, cotton, leather, wood or other combustibles can cause the material to ignite and result in a fire.

6.2	**Environmental precautions**	:	Do not allow to enter drains, sewers or watercourses. Should not be released into the environment
6.3	**Methods and material for containment and cleaning up**	:	Dam up Do not mix waste streams during collection Soak up with inert absorbant material Keep in suitable, closed containers for disposal Never return spills in original containers for re-use
6.4	**Reference to other sections**	:	Section 1 for emergency contact. Section 8 for information on appropriate personal protective equipment.
6.5	**Additional Information**	:	None

SECTION 7. HANDLING AND STORAGE

7.1	**Precautions for safe handling**	:	Avoid ingestion, inhalation and contact with skin and eyes Use only with adequate ventilation. Keep away from heat and sources of ignition. Keep container tightly closed. Wear protective gloves/clothing and eye/face protection. Keep away from incompatible products Use only clean and dry utensils

7.2 Conditions for safe storage, including any incompatibilities

Storage Temperature	:	Store between 4°C/39.2°F to 25°C/77°F
Storage Conditions	:	Protect from light. Keep only in original container Keep away from combustible materials and sources of ignition and heat. Store in a receptacle equipped with a vent Keep container closed Regularly check the conditions and temperature of the containers.

Incompatible materials	:	Strong acids, strong alkalis, strong oxidising agents, strong reducing agents, organic material, acetone and metals.
Suitable material	:	Aluminium 99.5% Stainless steel passivated 316 Approved grades of HDPE Polypropylene

7.3 Specific end use(s) : Apart from the use mentioned in Section 1.2 no other specific uses are stipulated. For further information please contact supplier.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

8.1.1 Exposure Limit Values

Substance	Standard	Type	Exposure Limit Value	Notes
Hydrogen Peroxide CAS: 7722-84-1	UK.EH40 (2011) – Workplace Exposure Limits [WEL]	TWA	1 ppm	LTEL (8hr)
		TWA	1.4 mg/m^3	LTEL (8hr)
		STEL	2 ppm	
		STEL	2.8 mg/m^3	
	US.ACGIH (2020) – Threshold Limit Values [TLV]	TWA	1 ppm	
	US.OSHA (2006) – Permissible Exposure Limit [PEL]	TWA	1 ppm	
		TWA	1.4 mg/m^3	
	US.Cal/OSHA (2019) – Permissible Exposure Limit [PEL]	TWA	1 ppm	
	US.NIOSH (2019) – Recommended Exposure Limit [REL]	TWA	1 ppm	

8.1.2 Other information on limit values

Substance	Limit	Conditions	Value	Notes
Hydrogen Peroxide CAS: 7722-84-1	Predicted No Effect Concentration [PNEC]	Fresh water	0.13 mg/l	
		Marine water	0.013 mg/l	
		Sewage treatment plants	4.7 mg/l	
	Derived No Effect Level/Derived minimal effect level [DNEL/DMEL]	Workers, inhalation, acute exposure	3 mg/m^3	Local effects
		Workers, inhalation, chronic exposure	1.4 mg/m^3	Local effects
		Consumers, inhalation, acute exposure	1.93 mg/m^3	Local effects
		Consumers, inhalation, chronic exposure	0.21 mg/m^3	Local effects

8.2 Exposure controls

8.2.1 Appropriate engineering controls : Ensure adequate ventilation
Apply technical measures to comply with the occupational exposure limits

8.2.2 Personal protection equipment

Eye/face protection : Wear chemical safety glasses with side shields, or splash-proof goggles

	Skin protection (Hand protection/ Other) 	:	Impervious gloves Suitable material: PVC, butyl-rubber, nitrile rubber Any specific glove information provided is based on published literature and glove-manufacturer data. Contact the glove manufacturer for glove selection and breakthrough times for your use conditions. Inspect and replace worn or damaged gloves. Chemical resistant gloves are recommended. If contact with forearms is likely, wear gauntlet–style gloves. Nitrile, CEN standards EN 420 and EN 374 provide general requirements and list of glove types.
	Respiratory protection 	:	If concentrations in excess of 10 ppm are expected, use NIOSH/DHHS approved self-contained breathing apparatus (SCBA), or other approved atmospheric-supplied respirator (ASR) equipment (e.g., a full-face airline respirator (ALR)). DO NOT use any form of air-purifying respirator (APR) or filtering face piece (AKA dust mask), especially those containing oxidizable sorbants such as activated carbon.
	Hygiene Measures	:	Eye wash bottles or eye wash stations in compliance with applicable standards Take off contaminated clothing and shoes immediately. Wash contaminated clothing before re-use. When using do not eat, drink or smoke. Wash hands before breaks and at the end of workday. Handle in accordance with good industrial hygiene and safety practice.
	Thermal hazards	:	None Known
8.2.3	**Environmental Exposure Controls**	:	Dispose of rinse water in accordance with local and national regulations See sections 6,7,12,13

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

Appearance	:	Liquid
Colour	:	Colourless
Odour	:	Odourless
Molecular weight	:	34 g/mol
pH (Value)	:	2.02 (H_2O_2 50%)
Melting Point (°C) / Freezing Point (°C)	:	-33°C/-27°F (H_2O_2 35%)
Boiling point/boiling range (°C)	:	108°C/226°F (H_2O_2 35%)
Flash Point (°C)	:	Not applicable
Evaporation rate	:	No data available
Flammability (solid, gas)	:	Not applicable
Explosive limit ranges.	:	No data available
Vapour Pressure (mm Hg)	:	1 mbar (H_2O_2 50%) at 30°C/86°F
Vapour Density (Air=1)	:	1
Density (g/ml)	:	1.1 - 1.2
Solubility (Water)	:	Miscible with water
Solubility (Other)	:	No data available
Partition Coefficient (n-Octanol/water)	:	Log Pow: -1.57, Method: calculated value
Auto Ignition Temperature (°C)	:	Not flammable
Decomposition Temperature (°C)	:	>60°C/140°F, Self-accelerating decomposition temperature (SADT) <60°C/140°F, Slow composition
Viscosity (mPa.s)	:	1.17 mPa.s (H_2O_2 50%), at 20°C/68°F
Explosive properties	:	Not explosive
Oxidising properties	:	Strong oxidiser

9.2 Other information : Surface tension – 75.6 mN/m (H_2O_2 50%) at 20°C/68°F

SECTION 10. STABILITY AND REACTIVITY

10.1	**Reactivity**	:	Stable under normal conditions of use. Decomposes on heating. Potential for exothermic hazard.
10.2	**Chemical stability**	:	Stable under recommended storage conditions. Sensitive to heat and light.
10.3	**Possibility of hazardous reactions**	:	Contact with combustible material may cause fire. Contact with flammables may cause fire or explosions. Risk of explosion if heated under confinement. Fire or intense heat may cause violent rupture of packages.
10.4	**Conditions to avoid**	:	Protect from freezing. Contamination. To avoid thermal decomposition, do not overheat.
10.5	**Incompatible materials**	:	Acids, bases, metals, Heavy metal salts, powdered metal salts, reducing agents, organic materials, flammable materials .
10.6	**Hazardous Decomposition Product(s)**	:	Oxygen which supports combustion. Potential to produce over pressure in container.

SECTION 11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

11.1.1 Mixtures

Acute toxicity	:	Acute oral toxicity: LD50, rat, 1,270 mg/kg (H_2O_2 35%) Acute inhalation toxicity: LC50 4h, rat, >0.17 mg/l, vapour (H_2O_2 50%) Acute dermal toxicity: LD50, rabbit, >2,000 mg/kg (H_2O_2 35%)
Skin corrosion/Irritation	:	Rabbit: skin irritation (H_2O_2 35%) Irritating to skin. Effects may include: discolouration, Erythema, Odema.
Serious eye damage/eye irritation	:	Rabbit: Severe eye irritation (H_2O_2 10%)
Corrosivity	:	Corrosive to eyes. May cause irreversible eye damage.
Sensitisation	:	Guinea pig, did not cause sensitization on laboratory animals
Repeated dose toxicity	:	Oral, 90-day, mouse, Gastrointestinal tract: 300 ppm LOAEL Oral, 90-day, mouse: 100 ppm NOAEL Inhalation, 28-day rat, respiratory system: 10ppm, LOAEL, vapour Inhalation, 28-day, rat: 2ppm, NOAEL, vapour
Carcinogenicity	:	Oral, Prolonged exposure, mouse, Target organs: Duodenum, carcinogenic effects Dermal, prolonged exposure, mouse, animal testing did not show any carcinogenic effects The International Agency for Research on Cancer (IARC) has concluded that there is inadequate evidence for carcinogenicity of hydrogen peroxide in humans, but limited evidence in experimental animals (Group 3 - not classifiable as to its carcinogenicity to humans). The American Conference of Governmental Industrial Hygienists (ACGIH) has concluded that hydrogen peroxide is a 'Confirmed Animal Carcinogen with Unknown Relevance to Humans' (A3).
Mutagenicity	:	In vitro tests have shown mutagenic effects In vivo tests did not show mutagenic effects
Toxicity for reproduction	:	Substance is totally biotransformed (metabolized) Study scientifically unjustified

	Specific target organ toxicity – single exposure	:	Inhalation, mice, 665 mg/m^3. Remarks: RD 50, Irritating to respiratory system, H_2O_2 50%
11.2	**Other information**	:	None

SECTION 12. ECOLOGICAL INFORMATION

12.1 Toxicity

Active Ingredient	Duration	Species	Value	Notes
Hydrogen Peroxide CAS: 7722-84-1	LC50, 96 hr	Pimephales promelas (fathead minnows)	16.4 mg/L	
	NOEC, 96 hr	Pimephales promelas	4.3 mg/L	
	EC50, 48 hr	Crustaceans: Daphnia pulex (water flea)	2.4 mg/L	Fresh water, semi static test
	NOEC, 48 hr	Crustaceans: Daphnia pulex	1 mg/L	Fresh water, semi static test
	EC50, 72 hr	Algae: Skeletonema costatum	2.6 mg/L	Growth rate
	NOEC, 72 hr	Algae: Skeletonema costatum	0.63 mg/L	
	NOEC, 72 hr	Algae: Chlorella vulgaris	0.1 mg/L	

12.2 Persistence and degradability

Abiotic Degradation : Air, indirect photo oxidation, t1/2: 24 hr (Conditions: sensitizer: OH radicals)
Water, redox reaction, t1/2: 120 hr (Conditions: mineral and enzymatic catalysis, fresh water, salt water)
Soil, redox reaction, t1/2: 12 hr (Conditions: mineral and enzymatic catalysis)

Biodegradation : Aerobic, t1/2 < 2 min (Conditions: biological treatment sludge): Readily biodegradable
Aerobic, t1/2 from 0.3 – 5 d (Conditions: fresh water): Readily biodegradable
Anaerobic (Conditions: soil/sediments): Not applicable

12.3 Bioaccumulative potential : Bioaccumulative potential: Log Pow -1.57
Result – does not bioaccumulate

12.4 Mobility in soil

Water : Considerable solubility and mobility

Soil/sediments : Log KOC: 0.2, non significant evaporation and adsorption

Air : Volatility, Henry's law constant (H), = 0.75 kPa.m^3/mol
Conditions 20°C/68°F
Not significant

12.5 Results of PBT and VPVB assessment : This substance is not considered to be persistent, bioaccumulating nor toxic (PBT)
This substance is not considered to be very persistent nor very bioaccumulating (vPvB)

12.6 Other adverse effects : No data available

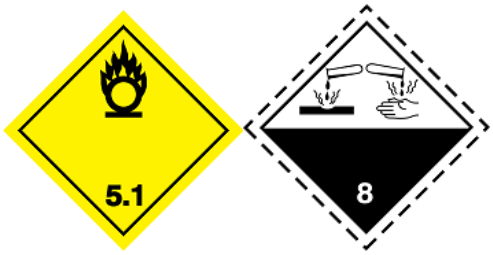
SECTION 13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods : Handle in accordance with good industrial hygiene and safety practice. Refer to protective measures listed in sections 7 and 8. Empty containers retain residue (liquid
and/or vapour) and can be dangerous. Do not burn, or use a cutting torch on, the empty drum.

13.2 Additional Information : US EPA waste number: D001

SECTION 14. TRANSPORT INFORMATION

14.1 Land transport (ADR/RID)

UN number	:	UN 2014
Proper Shipping Name	:	HYDROGEN PEROXIDE, AQUEOUS SOLUTION
Transport hazard class(es)	:	5.1
ADR/RID-Labels	:	5.1 – Oxidizing substances 8 - Corrosive
Packing Group	:	II
Hazard label(s)	:	
Environmental hazards	:	None
Special precautions for user	:	None

14.2 Sea transport (IMDG)

UN number	:	UN 2014
Proper Shipping Name	:	HYDROGEN PEROXIDE, AQUEOUS SOLUTION
Transport hazard class(es)	:	5.1
IMDG Labels	:	5.1 – Oxidizing substances 8 - Corrosive
Packing Group	:	II
Marine Pollutant	:	No
Special precautions for user	:	None

14.3 Air transport (ICAO/IATA)

UN number	:	UN 2014
Proper Shipping Name	:	HYDROGEN PEROXIDE, AQUEOUS SOLUTION
Transport hazard class(es)	:	5.1
ICAO labels	:	5.1 – Oxidizing substance 8 – corrosive
Packing Group	:	II
Environmental hazards	:	None
Special precautions for user	:	None

14.4 Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code : Not applicable

SECTION 15. REGULATORY INFORMATION

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture substance or mixture

15.1.1 US Federal Regulations

SARA Title III (Superfund Amendments and Reauthorization Act)	:	Section 313 of title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product does not contain any chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations Part 372.
Section 311/312 Hazard Categories	:	Fire Hazard: Yes Acute Health Hazard: Yes Chronic health hazard: No Sudden release of pressure hazard: No Reactive hazard: No

Clean Water Act : This product does not contain any substances regulated as pollutants pursuant to the Clean Water Act 940 CFR 122.21 and 40 CFR 122.42)

CERCLA/EPCRA : This material, as supplied, contains one or more substances regulated as a hazardous substance under the Comprehensive Response Compensation and Liability Act (CERCLA) or as an extremely hazardous substance (EHS) under the Emergency Planning and Community Right to Know Act (EPCRA)/ Superfunds Amendments and Reauthorization Act (SARA). This material, as supplied, does not contain any substances regulated as hazardous substances under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302) OR THE Superfund Amendment and Reauthorization Act (SARA) (40CFR 355). There may be specific reporting requirements at the local, regional, or state level pertaining to releases of this material.

Chemical Name	Hazardous substances RQs (40 CFR 302.4)	Extremely hazardous substances RQs (40 CFR 355 Appendix A)	SARA Section 302 EHS Threshold planning Quantity (40 CRF 355)
Hydrogen peroxide 7722-84-1		1000 lb	1000 lb

Hydrogen peroxide RQ is for concentrations of >52% only

FIFRA Information : EPA Pesticide registration number: 72372-1

This chemical is a pesticide product registered by the Environmental Protection Agency and is subject to certain labeling requirements under federal pesticide law. These requirements differ from the classification criteria and hazard information required for safety data sheets, and for workplace labels of non-pesticide chemicals. Following is the hazard information as required on the pesticide label:

DANGER
Corrosive, causes eye and skin damage.
Harmful if swallowed.
Strong oxidizing agent.
This pesticide is toxic to birds, mammals, fish and aquatic invertebrates.

15.1.2 US State Regulations :

Right-to-know laws : Hydrogen peroxide (CAS: 7722-84-1) is specifically regulated under state Right-to-know laws in:
California, Massachusetts, New Jersey, Pennsylvania, Rhode Island

15.1.3 International Inventories : United States: TSCA
Canada: DSL
Europe: EINECS/ELINCS
Japan: ENCS
China: IECSC
Korea: KECL
Philippines: PICCS
Australia: AICS
New Zealand: NZIoC

SECTION 16. OTHER INFORMATION

The following sections contain revisions or new statements	:	Sections 1-16 as of September 2020.

ABBREVIATIONS & ACRONYMS

UFI	:	Unique Formula Identifier
STOT	:	Specific Target Organ Toxicity
WEL	:	Workplace Exposure Limit
TLV	:	Threshold Limit Value
TWA	:	Time-Weighted Average
STEL	:	Short-Term Exposure Limit
LTEL	:	Long-Term Exposure Limit
PNEC	:	Predicted No Effect Concentration
DNEL	:	Derived No Effect Level
DMEL	:	Derived Minimal Effect Level
LOAEL	:	Lowest-observed-adverse-effect Level
NOAEL	:	No-observed-adverse-effect Level
NOEC	:	No Observed Effect Concentration

References	:	Sources of information used in preparing this SDS included one or more of the following: results from in-house or supplier toxicology studies; publications from trade associations; ECHA publications; EU guidelines and other sources as appropriate
Training Advice	:	**All users should be trained**
Additional Information	:	None

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