



SAFETY DATA SHEET

ACCORDING TO EC-REGULATIONS 2015/830 & 1272/2008 (CLP)

REV	Description	Date	C.R. No.	Orig	Chkd	Apprd
1	First issue	18-07-2013				
2	Update to remove R&S phrases and bring SDS in line with GHS	24-07-2018	3647	JC	BC	CB



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SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1 Product identifier

Product Name	Bioquell HPV-AQ
Chemical Name	Hydrogen Peroxide Solution 35%
Molecular Formula	H ₂ O ₂
Type of Product	Mixture

1.2 Relevant identified uses of the substance or mixture and uses advised against

Identified use(s)	To be used in conjunction only with Bioquell Hydrogen Peroxide Vapour Generating Equipment. Product is for professional use only
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Details of the supplier of the Safety Data Sheet

1.3 Company Identification	Bioquell UK Limited
Address	52 Royce Close West Portway Andover Hampshire SP10 3TS
Telephone	+44 (0) 1264 835 835
Fax	+44 (0) 1264 835 836

Details of the distributor of the product

Company Identification	Biodecon Solutions Limited
Address	1198 Toorak Road Camberwell VIC 3124 Australia
Telephone	+61 1 800 754 617
Fax	+61 1 800 754 619
Email	Info@biodeconsolutions.com.au

1.4 Emergency telephone number: 24 hours

Global incident response (use access code: 333809)
Australia: +61 1 800 686 951
New Zealand: +64 800 451719
UK: +44 8 08 189 0979

Emergency Phone No. during office hours	+44 (0) 1264 835 835 (08.00 – 17.00 GMT Monday - Friday)
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SECTION 2: HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

2.1.1 Regulation (EC) No. 1272/2008 (CLP) Acute Tox. 4, Oral. H302, Inhalation H332
 Skin Irrit. 2, H315
 Serious Eye Dam. 1, H318
 STOT SE 3. Inhalation. H335

2.2 Label elements

2.2.1 Label elements

According to Regulation (EC) No. 1272/2008 (CLP)

Name(s) on Label
 Hazardous components
 Signal Word

Hydrogen peroxide (35%)
 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

Precautionary statement(s)

Prevention

P261: Avoid breathing gas/mist/vapours/spray.
P270: Do not eat, drink or smoke when using this product
P280: Wear protective gloves/eye protection/face protection.
P310: Immediately call a POISON CENTRE or doctor/physician

Response

P301 + P312 + P330: IF SWALLOWED: call a POISON CENTRE or doctor/physician if you feel unwell. Rinse mouth
P302 + P352: IF ON SKIN: Wash with plenty of soap and water.
P304 + P340: IF INHALED: Remove person 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.

Disposal

P501: Dispose of contents / container in accordance with EWC160903, or applicable local regulations

2.3 Other hazards

None

2.4 Additional Information

None



SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Mixtures

3.1.1. Concentration

Substance Name:	Concentration
Hydrogen peroxide solution	Ca. 35%
CAS-No.: 7722-84-1 / EC-No.:231-765-0 / Index-No.: 008-003-00-9 REACH Registration Number: 01-2119485845-22	

EC Classification No. 1272/2008

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
	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	

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.



If swallowed

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.

Seek immediate medical attention.

Rinse mouth and if conscious, give 2 glasses of water. Get immediate medical attention. 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 accidentally 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 of 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 post 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
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	Store between 4°C to 25°C 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.
Storage Temperature	
Storage Conditions	
Incompatible materials	Strong acids, strong alkalies, 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

Hydrogen Peroxide

UK. EH40 Workplace Exposure Limits (WELs) 2011
 Time weighted average = 1ppm
 Time weighted average = 1.4 mg/m³
UK. EH40 Workplace Exposure Limits (WELs) 2011
 Short term exposure limit = 2ppm
 Short term exposure limit = 2.8mg/m³
DE. MAK – Werte Liste (2012)
 Time weighted average = 0.5ppm
 Time weighted average = 0.71 mg/m³
US. ACGIH Threshold Limit Values 2016
 Time weighted average = 1ppm

8.1.2 Other information on limit values

Predicted No Effect Concentration

Fresh water, .013 mg/l
 Marine water, 0.013 mg/l
 Sewage treatment plants, 4.7 mg/l

Derived No Effect Level/Derived minimal effect level

Workers, inhalation, acute exposure, 3 mg/m³, local effects
 Workers, inhalation, chronic exposure, 1.4 mg/m³, local effects
 Consumers, inhalation, acute exposure, 1.93 mg/m³, local effects
 Consumers, inhalation, chronic exposure, 0.21 mg/m³, local effects

SUBSTANCE.	CAS No.	LTEL (8 hr TWA ppm)	LTEL (8 hr TWA mg/m ³)	STEL (ppm)	STEL (mg/m ³)	Note:
Hydrogen Peroxide ≥35% - ≤50%	7722-84-1	1	1.4	2	2.8	EH 40

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 engineering controls do not maintain airborne contaminant concentrations at a level which is adequate to protect worker health, an approved respirator may be appropriate.

Respirator selection, use, and maintenance must be in accordance with regulatory requirements. Types of respirator to be considered for this mixture include: Half-face filter respirator; Type A filter material CEN standards EN136, EN140 and EN 405 provide respirator masks and EN 149 and EN 143 provide filter recommendations

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	Pungent
Molecular weight	34 g/mol
pH (Value)	2.02 (H2O2 50%)
Melting Point (°C) / Freezing Point (°C)	-33°C (H2O2 35%)
Boiling point/boiling range (°C):	108°C (H2O2 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 (H2O2 50%) at 30°C
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, Self-accelerating decomposition temperature (SADT)
	<60°C, Slow decomposition
Viscosity (mPa.s)	1.17 mPa.s (H2O2 50%), at 20°C
Explosive properties	Not explosive
Oxidising properties	Mixture classified as oxidising
9.2 Other information	Surface tension – 75.6 mN/m (H2O2 50%) at 20°C

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

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 (H2O2 35%) Acute inhalation toxicity: LC50 4h, rat, >0.17 mg/l, vapour (H2O2 50%) Acute dermal toxicity LD50, Rabbit, >2,000 mg/kg (H2O2 35%)
Skin corrosion/Irritation	Rabbit: skin irritation (H2O2 35%) Irritating to skin. Effects may include: discolouration, Erythema, Odema.
Serious eye damage/eye irritation	Rabbit, Severe eye irritation (H2O2 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
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 ₂ O ₂ 50%
11.2 Other information	None

SECTION 12: ECOLOGICAL INFORMATION

12.1 Toxicity	<ul style="list-style-type: none"> - LC50, 96hours, Pimephales promelas (fathead minnows): 16.4 mg/L - NOEC 96hours, Pimephales promelas 4.3mg/l - Crustaceans, Daphnia pulex, EC50, 48 h, 2.4 mg/l, fresh water, semi static test - Crustaceans, Daphnia pulex NOEC, 48 h, 1mg/l, fresh water, semi-static test - Algae, skeletonema costatum, EC50, growth rate, 72h, 2.6 mg/l - Algae, skeletonema costatum, NOEC, 72h, 0.63 mg/l - EC 50, 48 hours, Daphnia pulex (water flea): 2.4mg/L - Algae, chlorella vulgaris, NOEC, 72h, 0.1 mg/l
12.2 Persistence and degradability	
<u>Abiotic Degradation</u>	Air, indirect photo oxidation, t 1 /2 24h Conditions: sensitizer: OH radicals Water, redox reaction, t 1 /2, 120h Conditions: mineral and enzymatic catalysis, fresh water, salt water Soil, redox reaction, t 1 /2 12h. Conditions: mineral and enzymatic catalysis
<u>Biodegradation</u>	Aerobic, t 1/2 < 2 min Conditions: biological treatment sludge Readily biodegradable Aerobic t 1/2 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 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. Dispose of in accordance with the European Directives on waste and hazardous waste. Waste must be classified and labelled prior to recycling or disposal. According to the European Waste Catalogue, Waste Codes are not product specific, but application specific. Waste codes should be assigned by the user based on the application for which the product was used.
13.2 Additional Information	None

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
Special precautions for user

None
None

14.2 Sea transport (IMDG)

UN number
Proper Shipping Name
Transport hazard class(es)
IMDG Labels

Marine Pollutant
Special precautions for user

UN 2014
HYDROGEN PEROXIDE, AQUEOUS SOLUTION
5.1
5.1 – Oxidizing substances
8 - Corrosive

No
None

14.3 Air transport (ICAO/IATA)

UN number
Proper Shipping Name
Transport hazard class(es)
ICAO labels

Packing Group
Environmental hazards
Special precautions for user

UN 2014
HYDROGEN PEROXIDE, AQUEOUS SOLUTION
5.1
5.1 – Oxidizing substance
8 – corrosive

II
None
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 1907/2006 – REACH
1272/2008 – CLP
528/2012 - BPR
98/2013 – EPP

15.1.1 EU regulations

Authorisations and/or restrictions on use

Refer to EU regulation for details of any actions or restrictions by the above regulations or directives

15.1.2 National regulations

Refer to national regulation for details of any actions or restrictions by the above regulations or directives

Inventory Information	Status
Toxic Substance Control Act List (TSCA)	In compliance with inventory
Australian Inventory of Chemical Substances (AICS)	In compliance with inventory
Canadian Domestic Substances List (DSL)	In compliance with inventory



Korean Existing Chemicals Industry (KECI(KR))	In compliance with inventory
EU list of existing chemical substances (EINECS)	In compliance with inventory
Japanese Existing and New Chemical Substances (MITI List) (ENCS)	In compliance with inventory
Inventory of Existing Chemical Substances (China) (IECS)	In compliance with inventory
Philippine Inventory of Chemicals and Chemical Substances (PICCS)	In compliance with inventory
New Zealand HSNO regulatory information:	In compliance with inventory

15.2 Chemical Safety Assessment

A Chemical Safety Assessment has been carried out for this mixture (hydrogen peroxide)

SECTION 16: OTHER INFORMATION

The following sections contain revisions or new statements: 1, 2, 3, 4, 5, 6, 7, 8, 15, 16 as of July 2018

LEGEND

LTEL	Long Term Exposure Limit
STEL	Short Term Exposure Limit
STOT	Specific Target Organ Toxicity
DNEL	Derived No Effect Level
NOEC	No Observed Effect Concentration
PNEL	Predicted No 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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