

SECTION 1: Identification of the substance/mixture and of the company/undertaking**1.1 Product identifier**

Product name	BioNPX
Product number	NPX-0500, NPX-1000, NPX-5000
Brand	ReefX®

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

Liquid carbon source for biological control of nitrates and phosphates in marine awuaria.

1.3 Details of the supplier of the safety data sheet

Name	Live Reef Ltd
Address	8-9 Mountbatten Road EX16 6SW Tiverton Devon UK

Telephone	+44 (0)800 8620270
email	info@livereef.uk

1.4 Emergency telephone number

Live Reef Distribution Ltd
+44 (0)800 8620270

SECTION 2: Hazards identification**2.1 Classification of the substance or mixture****Classification according to Regulation (EC) No 1272/2008 (CLP)**

- Flammable liquids (chapter 2.6), Cat. 3, H226

For the full text corresponding to the "H"-codes displayed in this section, refer to Section 16.

2.2 Label elements**Labelling according to Regulation (EC) No 1272/2008 [CLP]****Hazard pictograms****Signal word**

Warning

Hazard statement(s)

H226

Flammable liquid and vapor

Precautionary statement(s)

P210	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P233	Keep container tightly closed.

SECTION 3: Composition/information on ingredients
3.2 Mixtures

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

Components
1. Ethanol

Concentration 22 - 25 % (volume)

Other names / synonyms ABSOLUTE ETHANOL; Alcohol; ALCOHOL DEHYDRATED; ALCOHOL, ANHYDROUS; Alcoholum / ethanolum; ALGRAIN; ANHYDROL; COLOGNE SPIRIT; COLOGNE SPIRITS (ALCOHOL); ETHANOL 200 PROOF; ETHANOL SOLUTION; ETHYL ALCOHOL; ETHYL ALCOHOL ANHYDROUS; ETHYL HYDRATE; ETHYL HYDROXIDE; FERMENTATION ALCOHOL; GRAIN ALCOHOL; JAYSOL; JAYSOL S; METHYLCARBINOL; MOLASSES ALCOHOL; NCI-C03134; POTATO ALCOHOL; SD ALCOHOL 23-HYDROGEN; SPIRIT; SPIRITS OF WINE; TECSOL; UN 1170

EC no. 200-578-6
 CAS no. 64-17-5
 Index no. 603-002-00-5

- Flammable liquids (chapter 2.6), Cat. 2

H225 Highly flammable liquid and vapor

2. Acetic acid

Concentration 3 - 5 % (volume)

Other names / synonyms acetic acid ... %; ACETIC ACID, conc.>90%; ACETIC ACID, GLACIAL; ACETICACID; Acidum aceticum; ETHANOIC ACID; ETHYLIC ACID; GLACIAL ACETIC ACID; METHANECARBOXYLIC ACID; UN 2789; UN 2790; VINEGAR ACID

EC no. 200-580-7
 CAS no. 64-19-7
 Index no. 607-002-00-6

- Flammable liquids (chapter 2.6), Cat. 3

- Skin corrosion/irritation (chapter 3.2), Cat. 1A

H226 Flammable liquid and vapor
 H314 Causes severe skin burns and eye damage

3. Methanol

Concentration <= 3 % (volume)

Other names / synonyms CARBINOL; COLONIAL SPIRIT; COLUMBIAN SPIRIT; Methyl alcohol; METHYL HYDROXIDE; METHYLALCOHOL; METHYLLOL; MONOHYDROXYMETHANE; NA 1230 (DOT); PYROXYLIC SPIRIT; RCRA WASTE NUMBER U154; UN 1230 (DOT); WOOD ALCOHOL; WOOD NAPHTHA; WOOD SPIRIT

EC no. 200-659-6

CAS no. 67-56-1

Index no. 603-001-00-X

- Flammable liquids (chapter 2.6), Cat. 2
- Acute toxicity, inhalation (chapter 3.1), Cat. 3
- Acute toxicity, dermal (chapter 3.1), Cat. 3
- Acute toxicity, oral (chapter 3.1), Cat. 3
- Specific target organ toxicity following single exposure (chapter 3.8), Cat. 1

H225	Highly flammable liquid and vapor
H301	Toxic if swallowed
H311	Toxic in contact with skin
H331	Toxic if inhaled
H370	Causes damage to organs [organs, route]

SECTION 4: First aid measures**4.1 Description of first aid measures**

Following inhalation	Remove the victim from site of exposure to fresh air. If breathing is difficult, give oxygen. If not breathing give artificial respiration. Get medical attention.
Following skin contact	Take off contaminated clothing and shoes immediately. Wash off with soap and plenty of water. Get medical attention if rash develops or if concerned.
Following eye contact	In case of contact with eyes, rinse immediately with plenty of water for at least 15 minutes. Get medical attention.
Following ingestion	Do not induce vomiting. If victim is conscious, wash mouth thoroughly with plenty of water. Never give anything by mouth to an unconscious person. Get medical attention.

4.2 Most important symptoms and effects, both acute and delayed

See section 2 and section 11.

4.3 Indication of any immediate medical attention and special treatment needed

No data available.

SECTION 5: Firefighting measures

5.1 Extinguishing media

Use extinguishing media suitable to the surroundings such as, dry chemical powder, chemical foam, water spray and carbon dioxide.

5.2 Special hazards arising from the substance or mixture

Flammable liquid and vapour.

Flammable vapours may be produced if heated.

When heated sufficiently, product may decompose to form smoke and toxic fumes, gases or vapours that may cause dizziness.

Toxic fumes such as carbon oxides may be evolved on thermal decomposition.

5.3 Advice for firefighters

Fire fighters should wear full protective clothing and self-contained breathing apparatus in positive pressure mode.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Use personal protective equipment.

Avoid breathing vapors, mist or gas.

Ensure adequate ventilation.

Ventilate area of spill.

6.2 Environmental precautions

Prevent entry into waterways, sewers, basements or confined areas.

6.3 Methods and material for containment and cleaning up

Contain spillage, and then collect with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local / national regulations.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Avoid contact with skin and eyes.

Avoid inhalation of vapors, mist or gas.

Wash thoroughly after handling.

Handle in accordance with good industrial hygiene and safety practice.

Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed.

Remove contaminated clothing and protective equipment before entering eating areas.

7.2 Conditions for safe storage, including any incompatibilities

Keep only in original container.

Avoid large temperature changes and store in a cool, dry, well ventilated environment away from direct sunlight.

Keep containers closed when not in use.

Keep away from oxidising compounds, reducing agents, alkali metals, ammonia, peroxides, acid chlorides, acid anhydrides.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

1. Ethanol (CAS: 64-17-5)

Parameter	PEL
Route of exposure	Inhalation
Value	1000 ppm
Source	OSHA
Basis / monitoring / notes	OSHA Annotated Table Z-1, www.osha.gov

Parameter	PEL
Route of exposure	Inhalation
Value	1900 mg/m ³
Source	OSHA
Basis / monitoring / notes	OSHA Annotated Table Z-1, www.osha.gov

Parameter	PEL
Route of exposure	Inhalation
Value	1000 ppm
Source	Cal/OSHA
Basis / monitoring / notes	OSHA Annotated Table Z-1, www.osha.gov

Parameter	REL
Route of exposure	Inhalation
Value	1000 ppm
Source	NIOSH
Basis / monitoring / notes	OSHA Annotated Table Z-1, www.osha.gov

Country	USA
Parameter	TLV®
Route of exposure	Inhalation
Value	(ST) 1000 ppm
Source	ACGIH
Basis / monitoring / notes	OSHA Annotated Table Z-1, www.osha.gov

2. Acetic acid (CAS: 64-19-7 EC: 200-580-7)

Country	USA
Parameter	PEL
Route of exposure	Inhalation
Value	10 ppm
Source	OSHA
Basis / monitoring / notes	OSHA Annotated Table Z-1, www.osha.gov

Country	USA
Parameter	PEL-ST
Route of exposure	Inhalation
Value	10 ppm, (ST) 15 ppm, (C) 40 ppm
Source	Cal/OSHA
Basis / monitoring / notes	OSHA Annotated Table Z-1, www.osha.gov

Country	USA
Parameter	REL
Route of exposure	Inhalation

Value	10 ppm, (ST) 15 ppm
Source	NIOSH
Basis / monitoring / notes	OSHA Annotated Table Z-1, www.osha.gov
Country	USA
Parameter	TLV®
Route of exposure	Inhalation
Value	10 ppm, (ST) 15 ppm
Source	ACGIH
Basis / monitoring / notes	OSHA Annotated Table Z-1, www.osha.gov
Country	USA
Parameter	TWA
Route of exposure	Inhalation
Value	10 ppm
Source	ACGIH
Basis / monitoring / notes	USA. ACGIH Threshold Limit Values (TLV)/ Pulmonary function
Country	USA
Parameter	STEL
Route of exposure	Inhalation
Value	15 ppm
Source	ACGIH
Basis / monitoring / notes	USA. ACGIH Threshold Limit Values (TLV)/Pulmonary function.Upper Respiratory Tract irritation. Eye irritation
Country	USA
Parameter	ST
Route of exposure	Inhalation
Value	15 ppm
37 mg/m ³	
Source	NIOSH
Basis / monitoring / notes	USA. NIOSH Recommended Exposure Limits/ Can be found in concentrations of 5-8% in vinegar
Country	USA
Parameter	TWA
Route of exposure	Inhalation
Value	10 ppm
25 mg/m ³	
Source	NIOSH
Basis / monitoring / notes	USA. NIOSH Recommended Exposure Limits/ Can be found in concentrations of 5-8% in vinegar
Country	USA
Parameter	TWA
Route of exposure	Inhalation
Value	10 ppm
25 mg/m ³	
Source	OSHA
Basis / monitoring / notes	USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants
Country	USA
Parameter	PEL-TWA
Route of exposure	Inhalation
Value	10 ppm
25 mg/m ³	
Source	Cal/OSHA

Basis / monitoring / notes	California permissible exposure limits for chemical contaminants (Title 8, Article 107)
Country	USA
Parameter	PEL-TWA
Route of exposure	Inhalation
Value	15 ppm
37 mg/m ³	
Source	Cal/OSHA
Basis / monitoring / notes	California permissible exposure limits for chemical contaminants (Title 8, Article 107)
Country	USA
Parameter	C
Route of exposure	Inhalation
Value	40 ppm
Source	Cal/OSHA
Basis / monitoring / notes	California permissible exposure limits for chemical contaminants (Title 8, Article 107)
Country	USA
Parameter	PEL
Route of exposure	Inhalation
Value	10 ppm, (ST) 15 ppm, (C) 40 ppm
Source	Cal/OSHA
Basis / monitoring / notes	OSHA Annotated Table Z-1, www.osha.gov
Country	USA
Parameter	PEL
Route of exposure	Inhalation
Value	10 ppm
25 mg/m ³	
Source	Cal/OSHA
Basis / monitoring / notes	California permissible exposure limits for chemical contaminants (Title 8, Article 107)
Country	USA
Parameter	STEL
Route of exposure	Inhalation
Value	15 ppm
37 mg/m ³	
Source	Cal/OSHA
Basis / monitoring / notes	California permissible exposure limits for chemical contaminants (Title 8, Article 107)
3. Methanol (CAS: 67-56-1 EC: 200-659-6)	
Parameter	PEL-TWA
Route of exposure	Inhalation
Value	200 ppm, 260 mg/m ³
Source	OSHA
Basis / monitoring / notes	Headache. Nausea. Dizziness. Eye damage Substances for which there is a Biological Exposure Index or Indices Danger of cutaneous absorption
Parameter	PEL-TWA
Route of exposure	Inhalation
Value	200 ppm
Source	Cal/OSHA
Parameter	PEL-ST

Route of exposure	Inhalation
Value	250 ppm
Source	Cal/OSHA
Parameter	PEL-C
Route of exposure	Inhalation
Value	1000 ppm
Source	Cal/OSHA
Parameter	PEL-ST
Route of exposure	Inhalation
Value	250 ppm
Source	NIOSH
Parameter	REL-TWA
Route of exposure	Inhalation
Value	200 ppm
Source	NIOSH
Parameter	TLV®
Route of exposure	Inhalation
Value	200 ppm
Source	ACGIH
Parameter	TLV®
Route of exposure	Inhalation
Value	250 ppm (ST)
Source	ACGIH

8.2 Exposure controls

Appropriate engineering controls

Use process enclosures, local exhaust ventilation, or others engineering controls to keep airborne levels below recommend exposure limits.

If user operations generate dust, fume or mist, use ventilation to keep exposure to airborne contaminants below the exposure limit.

Personal protection equipment

Pictograms



Eye and face protection

Wear protective safety glasses.

Skin protection

During normal non-professional use of the preparation no personal protective equipment is required. However, in case of manufacture or spillage, use as appropriate to the size of the spill.

Respiratory protection

Disposable particulate mask.

Be sure to use an approved/certified equipment or equivalent equipment.

Wear appropriate respirator when ventilation is inadequate.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Appearance	Clear, slightly red liquid
Odour	Alcoholic
Odour threshold	No data available
pH	No data available
Melting point / freezing point	No data available
Initial boiling point and boiling range	No data available
Flash point	36°C-39°C (estimated)
Evaporation rate	No data available
Flammability (solid, gas)	Vapour from liquid maybe combustible
Upper/lower flammability limits	No data available
Upper/lower explosive limits	No data available
Vapour pressure	No data available
Vapour density	No data available
Relative density	No data available
Solubilit(ies)	Soluble in water
Partition coefficient: n-octanol/water	No data available
Auto-ignition temperature	No data available
Decomposition temperature	No data available
Viscosity	No data available
Explosive properties	No data available
Oxidising properties	No data available

SECTION 10: Stability and reactivity

10.1 Reactivity

No data available

10.2 Chemical stability

The product is stable under normal handling and storage conditions described.

10.3 Possibility of hazardous reactions

Hazardous reactions are not expected, under normal conditions of storage and use.

10.4 Conditions to avoid

Long term exposure to heat, direct sunlight and sources of ignition.

10.5 Incompatible materials

Oxidising compounds, reducing agents, alkali metals, ammonia, peroxides, acid chlorides, acid anhydrides.

10.6 Hazardous decomposition products

Hazardous decomposition products formed under fire conditions - Carbon oxides.
Other decomposition products - No data available.

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute toxicity

Ethanol, LD50, Rat, 7,060 mg/kg (oral)
Ethanol, LC50, Rat, > 20,000 ppm/10H (inhalation)
Acetic acid, LD50, Rat, 3,310 mg/kg (oral)
Acetic acid, LC50, Rat, > 11,000 mg/m³/4H (inhalation)
Methanol, LD50, Rat, > 5,500 mg/kg (oral)
Methanol, LC50, Rat, > 60,000 ppm/4H (inhalation)

Skin corrosion/irritation

No data available.

Serious eye damage/irritation

No data available.

Respiratory or skin sensitization

No compounds present in the preparation have been identified as having sensitizing properties.

Germ cell mutagenicity

No compounds present in the preparation have been identified as having mutagenic properties.

Carcinogenicity

No compounds present in the preparation have been identified as having carcinogenic properties.

Reproductive toxicity

No compounds present in the preparation have been identified as having reproductive toxicity properties.

STOT-single exposure

No data available.

STOT-repeated exposure

No data available.

Aspiration hazard

No data available.

Additional information

The preparation contains acetic acid and may cause local damage in contact with tissue of the eyes and skin. Inhalation of spray or mist may irritate the respiratory system and ingestion may damage the linings of the mouth, throat and gastro-intestinal tract.

The preparation contains methanol which may be fatal or cause blindness if swallowed and cannot be made non-poisonous. Effects due to ingestion may include; nausea, dizziness, gastrointestinal disturbance, weakness, confusion. Drowsiness or unconsciousness.

Another volatile compound is present and could cause central nervous system depression, nausea, dizziness, narcosis and damage to the heart.

SECTION 12: Ecological information

12.1 Toxicity

No data available.

12.2 Persistence and degradability

Will readily bio-degrade in the environment.

12.3 Bioaccumulative potential

No data available.

12.4 Mobility in soil

Though there is no specific information on the mobility of compounds in the preparation, they are soluble under normal environmental conditions in water so would also be expected to be highly mobile in soil.

12.5 Results of PBT and vPvB assessment

No data available.

SECTION 13: Disposal considerations**13.1 Waste treatment methods****Disposal of the product**

Waste must be disposed of in accordance with national and local environmental control regulations.

Disposal of contaminated packaging

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

SECTION 14: Transport information

14.1 UN Number	1993
14.2 UN Proper Shipping Name	Flammable liquids, n.o.s. (Ethanol)
14.3 Transport hazard class(es)	3
14.4 Packing group	III

14.6 Special precautions for user**Road (ADR):**

Limited quantities: Combination packagings: not more than 5 litres per inner packaging for liquids. A package shall not contain more than 30 litres.

Rail (RID):

Limited quantities: Combination packagings: not more than 5 litres per inner packaging for liquids. A package shall not contain more than 30 litres.

Inland waterways (ADN):

Limited quantities: Combination packagings: not more than 5 litres per inner packaging for liquids. A package shall not contain more than 30 litres.

Sea (IMDG/IMSBC):

Limited quantities: Combination packagings: not more than 5 litres per inner packaging for liquids. A package shall not contain more than 30 litres.

Air (ICAO-IT/IATA-DGR):

Passenger limited maximum quantity: Y309 - 10 litres.

Passenger maximum quantity: 309 - Maximum quantity 60 litres.

Packing instruction - 310.

Cargo maximum quantity per packaging: 309 - Maximum quantity 220 litres.

SECTION 15: Regulatory information

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

California Prop. 65 Components

Chemical name: Methanol

CAS number: 67-56-1

16/03/2012 - Developmental toxicity

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

CAS-No. 64-17-5: Ethanol

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

CAS-No. 64-17-5: Ethanol

This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

Massachusetts Right To Know Components

Chemical name: Ethanol

CAS number: 64-17-5

Acetic acid

CAS number: 64-19-7

Chemical name: Methanol

CAS number: 67-56-1

New Jersey Right To Know Components

Common name: ETHYL ALCOHOL

CAS number: 64-17-5

Acetic acid

CAS number: 64-19-7

Chemical name: Methanol

CAS number: 67-56-1

Pennsylvania Right To Know Components

Chemical name: Ethanol

CAS number: 64-17-5

Acetic acid

CAS number: 64-19-7

Chemical name: Methanol

CAS number: 67-56-1

SARA 302 Components

No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 311/312 Hazards

Fire Hazard, Acute Health Hazard, Chronic Health Hazard

SARA 313 Components

This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

15.2 Chemical Safety Assessment

Not available.

HMIS Rating

BioNPX	
HEALTH	1
FLAMMABILITY	2
PHYSICAL HAZARD	0
PERSONAL PROTECTION	X

NFPA Rating

SECTION 16: Other information
Full text of hazard statements referenced in Section 2

H226

Flammable liquid and vapor

Further information/disclaimer

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.