

	<h1 style="text-align: center;">SAFETY DATA SHEET</h1> <p style="text-align: center;">prepared in accordance with Commission Regulation (EU) No. 2015/830 amending Regulation (EC) No 1907/2006 (REACH)</p>			
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SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1. Product identifier

Trade name:

AF NitraPhos Minus

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

1.2.1. Relevant identified uses

Preparation for the biological elimination of nitrates, nitrites, and phosphates from the marine aquarium.

1.2.2. Uses advised against

None

1.3. Details of the supplier of the safety data sheet

Aquaforest sp. z o.o. sp. k.

ul. Starowiejska 18

32-800 Brzesko, Poland

info@aquaforest.eu

+48 14 691 79 79

1.4. Emergency telephone number:

112 – emergency number

+48 18 444 19 88 (8.00 am-4.00 pm)

SECTION 2: HAZARDS IDENTIFICATION

2.1. Classification of the substance or mixture

According to the Regulation (EC) No 1272/2008:

Flam. Liq. 3 H226 Flammable liquid and vapour

2.2. Label elements

According to the Regulation (WE) 1272/2008:

Pictogram:



GHS02

Signal Word: WARNING

Hazard statements:

H226 Flammable liquid and vapour

Precautionary statement:

P102 Keep out of reach of children

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

P233 Keep container tightly closed

P303+P361+P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.

2.3. Other hazards

As product containing only inorganics, it does not fall under the criteria for PBT or vPvB in accordance with Annex XIII of REACH Regulation.

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SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.2. Mixtures.

Name	CAS EC Index No Registration No	Content % w/w	CLP classification
Ethanol*	64-17-5 / 200-578-6 / 603-002-00-5	10-25	Flam. Liq. 2, H225
Ethyl acetate*	141-78-6 205-500-4 607-022-00-5 01-2119475110-46-XXXX	1-2,5	Flam. Liq. 2, H225 Eye Irrit. 2, H319 STOT SE 3, H336

* Hazardous ingredient is known to have established TLV's in work environment in several countries. Checking the relevant national regulations in this regard is mandatory.

SECTION 4: FIRST AID MEASURES

4.1. Description of first aid measures

General recommendations

The first step is to remove the injured person from a polluted environment. Take off any contaminated clothing. Never give anything by mouth to an unconscious person. In case of health problems, immediately contact doctor, show MSDS of product.

Contamination of the skin:

Wash with water and soap, rinse thoroughly. In case of persistent skin irritation get medical advice. Take off contaminated clothing and shoes.

Contamination of the eyes:

Flush contaminated eyes with wide-open eyelids a continuous, gentle stream of water for at least 10 minutes. Remove contact lenses if possible, continue rinsing for another 5 minutes. Get medical help immediately in case of persistent irritation or damage to eyes.

Inhalation:

Remove the victim from area of contamination. Provide fresh air and keep warm. Get medical help in case of any health problems.

Ingestion:

After ingestion rinse mouth with water, drink water. Do not induce vomiting unless instructed so by medical personnel. If vomiting occurs, keep victim's head low to avoid getting vomit into lungs. Get medical help immediately. In case of unconsciousness place victim in safe, horizontal position and get immediately call for medical help.

Protection of personnel providing first aid:

Do not take any action which may pose a risk to first-aider unless adequately trained and aware of risks.

4.2. Most important symptoms and effects, both acute and delayed

Acute symptoms – product might be harmful when inhaled, ingested or in eye.

Delayed symptoms – no data

Effects of exposure – no data

4.3. Indication of any immediate medical attention and special treatment needed

Note to Physician: No specific antidote, treat symptomatically.

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SECTION 5: FIREFIGHTING MEASURES

5.1. Extinguishing media

Suitable extinguishing media:

For large fire: powders, CO₂, alcohol resistant foams, water mist

Large fires: water mist, alcohol resistant foams

Unsuitable extinguishing media:

Not known.

5.2. Special hazards arising from the substance or mixture

During fire there is a risk of dangerous decomposition products and toxic gases.

5.3. Advice for fire-fighters

Product is flammable (contains ethanol). Apply the breathing apparatus and full protective clothing for firefighting. Vapours released during fire cover with water mist.

General:

Remove from the endangered area all unauthorized persons, not involved in extinguishing the fire, order evacuation if necessary.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures

For non-emergency personnel:

Evacuate all personnel from contaminated area. Provide adequate ventilation or provide suitable mask. Use appropriate personal protection measures. Avoid open flames, heat sources, sparks.

For emergency responders: Follow instructions, use appropriate personal protection measures.

6.2. Environmental precautions

Avoid entering drains, groundwater, soil and open water courses.

6.3. Methods and material for containment and cleaning up

Treat leakage with appropriate sorbent (sand, sawdust, diatomaceous earth, universal sorbent), collect into empty container, label it and allocate for disposal. Clean contaminated surface with water.

6.4. Reference to other sections

Personal protective equipment – section 8

Waste disposal – section 13

SECTION 7: HANDLING AND STORAGE

7.1. Precautions for safe handling

Product is flammable, avoid any kind of fire sources, sparks, open flames. Do not store close to incompatible materials (Section 10). Do not ingest, do not inhale.

Industrial hygiene

- ensure good ventilation (overall and local exhausted ventilation)
- ensure place for eyes and skin rinsing
- wash hands with soap and water before eating, smoking and after work
- use general caution while working with chemical substances

Specific measures against fire and explosion.

Product is flammable, protect from fire.

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7.2. Conditions for safe storage, including any incompatibilities.

Store in dry rooms in closed containers. Avoid heat sources, fire, sparks. Keep away from children. Avoid contact with food and feeding stuff.

7.3. Specific end use(s)

See section 1.2.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Control parameters

Occupational Exposure Limit Value:

There are exposure standards allocated to components of this product in several countries:

Ethanol (CAS: 64-17-5), ethyl acetate (CAS: 141-78-6) Mandatory check TLV's provided for particular country.

DNELs (Derived No Effect Levels) available for mixture components:

Ethanol (CAS: 64-17-5)

Route of exposure	Workers				General population (consumers)			
	Acute local Effects	Acute systemic effects	Long-term local effects	Long-term systemic effects	Acute local Effects	Acute systemic effects	Long-term local effects	Long-term systemic effects
Ingestion	n. d.	n. d.	n. d.	n. d.	n. d.	n. d.	n. d.	87 mg/kg bw/day
Inhalation	1900 mg/m ³	n. d.	n. d.	950 mg/m ³	950 mg/m ³	n. d.	n. d.	114 mg/m ³
Dermal	n. d.	n. d.	n. d.	343 mg/kg bw/day	n. d.	n. d.	n. d.	206 mg/kg bw/day

n. d. – no data

Ethyl acetate (CAS: 141-78-6)

Route of exposure	Workers				General population (consumers)			
	Acute local Effects	Acute systemic effects	Long-term local effects	Long-term systemic effects	Acute local Effects	Acute systemic effects	Long-term local effects	Long-term systemic effects
Ingestion	n. d.	n. d.	n. d.	n. d.	n. d.	n. d.	n. d.	4.5 mg/kg bw/day
Inhalation	1468 mg/m ³	734 mg/m ³	1468 mg/m ³	734 mg/m ³	734 mg/m ³	367 mg/m ³	734 mg/m ³	367 mg/m ³
Dermal	n. d.	n. d.	n. d.	63 mg/kg bw/day	n. d.	n. d.	n. d.	37 mg/kg bw/day

n. d. – no data

8.2. Exposure controls

Technical exposure controls:

Mechanical general or local ventilation.

Personal protection measures

The need of use and selection of appropriate personal protective equipment should depend on type of threat posed by the product, workplace conditions and handling of the product. Use protective equipment from reputable manufacturers.

a) Respiratory protection – is not necessary under normal conditions with sufficient ventilation or outdoor. Required during exposure to high concentrations of vapours/mist/aerosol. Wear mask or respirator completed with the filter type K or better.

b) Hand protection

Material of gloves must be resistant to the product. As the product is a mixture of several substances, the resistance of material of gloves can't be calculated in advance and therefore has to be checked before use. From the manufacturer's advice should be obtained information about the time of the penetration of substances and such time must be respected. The Breakthrough Time indicated by the manufacturer must exceed the period during which the product is being used. It is recommended to change gloves and replace

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them immediately if you notice any signs of wear, damage (rupture, perforation) or changes in appearance (color, flexibility, shape).

c) Eye protection –protective glasses (recommended)

d) Skin protection – protective clothing

Protective equipment standards:

EN 140:2001 Respiratory protective devices - Half masks and quarter masks - Requirements, testing, marking

EN 143:2004 Respiratory protective devices - Particle filters - Requirements, testing, marking

EN 149+A1:2010 Respiratory protective devices - Filtering half masks to protect against particles - Requirements, testing, marking

EN 14387+A1:2010 Respiratory protective devices - Gas filter(s) and combined filter(s) - Requirements, testing, marking

EN 374-1:2005 Protective gloves against dangerous chemicals and micro-organisms -- Part 1: Terminology and performance requirements for chemical risks

EN 374-2:2005 Protective gloves against chemicals and micro-organisms - Part 2: Determination of resistance to penetration

EN 374-3:2005 Protective gloves against chemicals and micro-organisms – Part 2: Determination of resistance to permeation by chemicals

PN-EN 166:2005 Personal eye protection. Specifications

PN-EN 14605+A1:2010 Protective clothing against liquid chemicals. Performance requirements for clothing with liquid-tight (Type 3) or spray-tight (Type 4) connections, including items providing protection to parts of the body only (Types PB [3] and PB [4])

Environmental exposure controls:

Do not allow to enter large amounts of product into ground water, sewage, waste water or soil.

PNECs (Predicted No Effect Concentrations) for mixture components:

Ethanol (CAS: 64-17-5)

Compartment	
Fresh water	960 µg/L
Sediment – fresh water	3.6 mg/kg sediment dw
Marine water	2.75 mg/L
Sediment – marine water	790 µg/L
Intermittent releases (freshwater)	2.9 mg/kg sediment dw
Food chain (predators)	380 - 720 mg/kg food dw
Biological sewage treatment plant	580 mg/L
Soil (agriculture)	630 µg/kg soil dw
Air	No identified risk

Ethyl acetate (CAS: 141-78-6)

Compartment	
Fresh water	240 µg/L
Sediment – fresh water	1.15 mg/kg sediment dw
Marine water	1.65 mg/L
Sediment – marine water	24 µg/L
Intermittent releases (freshwater)	115 µg/kg sediment dw
Food chain (predators)	200 mg/kg food
Biological sewage treatment plant	650 mg/L
Soil (agriculture)	148 µg/kg soil dw
Air	No hazard identified

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

Appearance: clear, dark-red coloured liquid

Odour: alcohol like

Odour threshold: no data

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pH:	3.2
Melting point/freezing point:	no data
Initial boiling point and boiling range:	73 °C (for ethanol)
Flash point:	27.9 °C (for the product)
Evaporation rate:	no data
Flammability:	not applicable
Upper/lower flammability or explosive limits:	not applicable
Vapour pressure:	no data
Vapour density:	no data
Relative Density:	no data
Solubility in water:	fully miscible
Solubility in other solvents:	no data
Partition coefficient: n-octanol/water:	not applicable
Auto-ignition temperature:	no data
Decomposition temperature:	no data
Viscosity:	no data
Explosive properties:	does not contain explosives
Oxidising properties:	does not contain oxidizers

9.2. Other information

None

SECTION 10: STABILITY AND REACTIVITY

10.1. Reactivity:

Product is not reactive under normal conditions of storage and usage

10.2. Chemical stability:

Product is stable under normal conditions.

10.3. Possibility of hazardous reactions:

Under normal conditions of usage product does not undergo any hazardous reactions.

10.4. Conditions to avoid:

Avoid any kind of fire source (open flames, sparks, heat sources).

10.5. Incompatible materials:

Strong oxidizers.

10.6. Hazardous decomposition products:

Product does not decompose.

SECTION 11: TOXICOLOGICAL INFORMATION

11.1. Information on toxicological effects:

Product was not tested for toxicological properties. Hazard classification was conducted by calculation methods based on hazardous ingredients content.

Acute toxicity:

Acute Oral Toxicity: product does not met criteria for classification, $ATE_{mix} > 2000$ mg/kg

Acute Dermal Toxicity: product does not met criteria for classification, $ATE_{mix} > 2000$ mg/kg

Acute Inhalation Toxicity: product does not met criteria for classification, $ATE_{mix} > 5$ mg/l


Skin corrosion/irritation: product does not met criteria for classification

Serious eye damage/irritation: product does not met criteria for classification

Respiratory or skin sensitisation: product does not met criteria for classification)

Germ cell mutagenicity: product does not contain any compounds with germ cell mutagenicity hazard

Carcinogenicity: product does not contain any compounds with carcinogenic hazard

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Reproductive toxicity: product does not contain any compounds with reprotoxic hazard

STOT-single exposure: product does not met criteria for classification

STOT-repeated exposure: product does not met criteria for classification

Aspiration hazard: product does not met criteria for classification

Potential health hazards:

Ingestion: no data

Inhalation: no data

Skin: no data

Eyes: no data

Toxicological data do hazardous ingredient (ethanol):

Acute oral toxicity LD₅₀ (rat): 1 187 - 15 010 mg/kg b.w.

Acute inhalation toxicity LD₅₀ (rat, 4h): 115.9 - 133.8 mg/L

SECTION 12: ECOLOGICAL INFORMATION

12.1. Toxicity:

Product was not tested for environmental hazards. Hazard classification was conducted by calculation methods based on hazardous ingredients content.

Acute toxicity: product does not met criteria for classification

Chronic toxicity: product does not met criteria for classification

12.2. Persistence and degradability:

No data

12.3. Bioaccumulative potential:

No data.

12.4. Mobility in soil:

No data. Product contains inorganic substance, dissociated in the presence of water, possible high potential for mobility in soil.

12.5. Results of PBT and vPvB assessment:

Based on available data product does not fall under criteria of PBT nor vPvB.

12.6. Other adverse effects:

No data

Ecotoxicological data for hazardous ingredient:

Acute toxicity for fish (*Salmo gairdneri*) LC₅₀ (96h): 1300 mg/L

Acute toxicity for invertebrates (*Daphnia magna*) EC₅₀ (48h): 7800 mg/L

Acute toxicity for bacteria (*Pseudomonas putida*) EC₅₀: 6500 mg/L

Acute toxicity for algae (*Scenedesmus quadricauda*) EC₅₀: 5000 mg/L

Inhibiting concentration for methane fermentation of sludge: 1500 mg/L

SECTION 13: DISPOSAL CONSIDERATIONS

13.1. Waste treatment methods:

Waste of product:

Residues of unused product should be kept in original containers. Deliver to company authorized for collection, transport and utilization of hazardous wastes.

European waste catalogue: HP 3 Flammable

Disposal of the product should be avoided or minimised, if possible. Large amounts of the product can't be allowed into communal sewers, but should be treated directly in appropriate sewage treatment plant. Unused


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or excess of the product should be utilized by authorized provider. Dispose of waste in accordance with all national regulations in plants permitted to waste collection, transport, waste recovery and disposal. Do not introduce waste of product into sewage.

Disposing of the packaging:

Recycling or disposal of packaging waste should be conducted according to current local legislation.

SECTION 14: TRANSPORT INFORMATION

14.1. UN number: ADR, IATA DGR, IMDG	1993
14.2. UN proper shipping name: ADR IATA DGR IMDG	FLAMMABLE LIQUID, N.O.S. (ETHANOL) FLAMMABLE LIQUID, N.O.S. (ETHANOL) FLAMMABLE LIQUID, N.O.S. (ETHYL ALCOHOL)
14.3. Transport hazard class(es): ADR, IMDG, IATA DGR	3 
14.4. Packing group: ADR, IMDG, IATA DGR	III
14.5. Environmental hazards:	No
14.6. Special precautions for user: ADR IATA DGR IMDG Code	Classification code: F1 Labels: 3 Hazard identification 30 Packing instructions: P001 Transport category (tunnel restriction code): 3 (D/E) LQ: 5L Class or Div.: 3 Hazard Label: Flammable liquid, Package orientation Passenger and Cargo Aircraft PI: Y344 (LQ), 355 Cargo Aircraft Only PI: 366 Nr EMS: F-E,S-E Marine pollutant: No
14.7. Transport in bulk according to Annex II of Marpol and the IBC Code	Not applicable

SECTION 15: REGULATORY INFORMATION

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

- Regulation (EC) No 1907/2006 of the European Parliament and of the Council from 18.12.2006 concerning the Registration, Evaluation, Authorization and Restriction from Chemicals (REACH)
- Regulation (EC) No 1272/2008 of the European Parliament and of the Council of 16 December 2008 on classification, labelling and packaging of substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No 1907/2006
- Commission Regulation (EU) 2015/830 of 28 May 2015 amending Regulation (EC) No 1907/2006 of the European Parliament and the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH)

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- European agreement concerning international road transport of dangerous products (ADR)
 - DIRECTIVE 2012/18/EU OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL
 of 4 July 2012 on the control of major-accident hazards involving dangerous substances, amending and subsequently repealing Council Directive 96/82/EC
 Federal, State and Local regulations

Directive 2012/18/EU

Named dangerous substances - ANNEX I none of the product ingredients is listed

Seveso category P5c Flammable liquids

Qualifying quantity (tonnes) of dangerous substances as referred to in Article 3(10) for the application of lower-tier requirements – 5.000 t

Qualifying quantity (tonnes) of dangerous substances as referred to in Article 3(10) for the application of upper-tier requirements – 50.000 t

Regulation (EC) 1907/2006 ANNEX XVII Conditions of restriction: 3

15.2. Chemical safety assessment

Chemical safety assessment was not made for the product

SECTION 16. OTHER INFORMATION

Explanation of abbreviations and acronyms used in the MSDS:

CAS – Chemical Abstracts Service

EC – number assigned to chemical substance in European Inventory of Existing Chemical Substances or European List of Notified Chemical Substances or in No Longer Polymers list.

PBT – persistence, bioaccumulation potential and toxicity

vPvB – very high persistence and very bioaccumulative

TLV – threshold limit value

UN number – identification number of the material (the number of UN, UN number)

ADR – European Agreement concerning the international carriage of dangerous goods by road

IATA DGR – International Air Transport Association Dangerous Good Regulation

IMDG – International Maritime Dangerous Goods Code

This SDS was prepared in accordance with Commission Regulation (EU) 2015/830 of 28 May 2015 amending Regulation (EC) No 1907/2006 of the European Parliament and the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH)

Classification of the product was based on the content of ingredients and according to Regulation (EC) No 1272/2008 of the European Parliament and of the Council of 16 December 2008 on classification, labelling and packaging of substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No 1907/2006

Recommendation and restriction of use: Use according to label. Additional safety information available at manufacturer.

Source of data: this MSDS was prepared based on MSDS of ingredients, physico-chemical data for the product, our knowledge and experience according to actual legislation.

ECHA

C&L Inventory

Disclaimer: information given is designed only as a guide for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered as a warranty or quality specification. End user is responsible for inappropriate use of information enclosed in SDS or inappropriate use of product.

Safety Data Sheet prepared by Chemical Consulting Bureau Grzegorz Żmijowski, B. Śmiałego 1/71, 43-200 Pszczyna, Poland.