Safety Data Sheet

Advanced Nutrients HammerHead

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Product name : Advanced Nutrients HammerHead.
Product code : 3000
Formula code : 002H
REACH Product type : Mixture.
REACH registration number : See section 3.
UFI : Not applicable (not classified mixture).

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

1.2.1 Identified uses:

Fertilising product.

1.2.2. Uses advised against:

Not to be used as food or feed in any forms.

1.3. Details of the supplier of the safety data sheet

Advanced Nutrients SP, SLU
Calle 23, Nave 6
Zona Franca Parc Logistic
08040 Barcelona (Spain)
Tel. (+34) 930 117 163
www.advancednutrients.com

E-mail address of competent person responsible for the SDS: info@advancednutrients.com.

1.4. Emergency telephone number

CHEMTREC Emergency Phone Numbers:
1-800-424-9300 (North America, including Canada and Mexico) CCN 613830.
1+703-527-3887 (International) CCN 613830.

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification according to Regulation EC No 1272/2008 (CLP):

Hazards	Hazard class and category	Hazard statement code
Physical Hazards:	Not classified.	-
Health hazards:	Not classified.	-
Environmental hazards:	Not classified.	-

2.2. Label elements

Labelling in accordance with Regulation (EC) 1272/2008:
EUH210: Safety data sheet available on request.

2.3. Other hazards

This mixture does not contain any substance considered PBT or vPvB, or identified as having endocrine disrupting properties, in a concentration equal to or greater than 0.1% by weight.

SECTION 3: Composition/information on ingredients

3.1. Substances

Not applicable.

3.2. Mixtures

Substances presenting a health or environmental hazard within the meaning of Regulation (EC) No 1272/2008; substances for which there are Union workplace exposure limits; substances that are PBT or vPvB; or included in the Candidate List for authorisation:

Name of ingredient	Identifiers	Conc. (w/w)	CLP Classification [#1]	SCL / M factors / ATE
Phosphoric acid ... %	CAS: 7664-38-2 EC: 231-633-2 REACH number: 01-2119485924-24 CLP index: 015-011-00-6	1 < 3%	Skin Corr. 1B; H314 Eye Dam. 1; H318 Acute Tox. 4; H302 Met. Corr. 1; H290	**SCL**: Eye Irrit. 2; H319: 10 % ≤ C < 25 % Skin Corr. 1B; H314: C ≥ 25 % Skin Irrit. 2; H315: 10 % ≤ C < 25 %. **M factor acute**: Not applicable. **M factor chronic**: Not applicable. **ATE oral**: >300 < 2000 mg/kg. **ATE inh.**: Not available. **ATE dermal**: Not available.

[#1] For the full text of the hazard statement codes mentioned in this section, see section 16.

SECTION 4: First aid measures

4.1. Description of first aid measures

Symptoms resulting from chemical poisoning may manifest after a prolonged period following exposure. Therefore, in case of doubt or discomfort, medical attention should be sought, and this SDS should be shown to medical personnel.

Inhalation:	In case of discomfort, move the affected person to a well-ventilated area, loosen their clothing, place them in the most comfortable position, and protect them from cold. Seek immediate medical attention if any discomfort or respiratory difficulty arises.
Skin contact:	Immediately flush skin with plenty of water for at least 15 minutes, while removing contaminated clothing and shoes. Thoroughly clean clothing and shoes before reuse. Seek medical attention if any irritation or redness develops or persists.
Eye contact:	Rinse eyes with plenty of water at room temperature for at least 15 minutes. Prevent the person from rubbing or closing their eyes. If the person uses contact lenses, these should be removed as long as they are not stuck to their eyes, otherwise further damage may occur. Obtain medical attention and show this SDS if pain, blinking or redness persist.
Ingestion:	If the victim is unconscious, do not give anything to drink or eat. Seek medical attention immediately and show this SDS to the emergency services. If the affected person is conscious, rinse the mouth with plenty of water to decontaminate the oral mucosa, but do not allow swallowing. DO NOT INDUCE VOMITING unless medically prescribed. In the event of spontaneous vomiting, hold the person's head forward to prevent aspiration. Seek medical advice and show this SDS to the emergency services.

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

4.2.1. Acute effects:

Not known.

4.2.2. Delayed effects:

Not known.

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

Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled. An eye-wash station is recommended near where this product is handled.

SECTION 5: Firefighting measures

5.1. Extinguishing media

5.1.1. Suitable extinguishing media: Use extinguishing media appropriate for surrounding fire.

5.1.2. Unsuitable extinguishing media: Not known.

5.2. Special hazards arising from the substance or mixture

On combustion, forms toxic fumes of phosphorus oxides.

5.3. Advice for firefighters

In the event of fire, quickly isolate the area by evacuating all persons from the vicinity of the incident. Refrain from any action which may endanger other persons and do not allow untrained personnel to intervene.

Fire-fighters must wear appropriate protective equipment and self-contained breathing apparatus with a full face-piece operating in positive pressure mode. Clothing for fire-fighters (including helmets, protective boots and gloves) conforming to European standard EN 469 provides a basic level of protection for chemical incidents. Clothing not conforming to EN 469 may not be suitable in any chemical incident.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel: Alert your colleagues and ensure good ventilation while evacuating the area. Keep unnecessary personnel away from the area where the spill has occurred. Do not touch or walk through spilled material.

6.1.2. For emergency responders: Keep unnecessary personnel away. Ventilate area as necessary. Prevent entry of product into basements. Avoid direct contact with the product by using appropriate personal protective equipment during all clean-up activities.

6.2. Environmental precautions

Prevent spilled contents from entering watercourses. Notify the relevant authorities if a large quantity of the product reaches watercourses or the sewage system.

6.3. Methods and material for containment and cleaning up

6.3.1. Large spills: Contain with non-combustible absorbent materials such as sand or earth to prevent from reaching drains or waterways. Scoop or shovel spilled material into properly labelled containers that can be closed, then store and dispose of according to local regulations. Spilled uncontaminated solutions may be applied to plants or land as a fertilizer according to package directions.

6.3.2. Small spills: Contain with non-combustible absorbent materials and collect mechanically the spilled material. Place it into an appropriate container. Then store and dispose of the waste in accordance with local regulations or reuse uncontaminated material as a fertilizer according to package directions.

6.4. Reference to other sections

For personal protection, see section 8.
For waste disposal, see section 13.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Ensure adequate ventilation. Handle and open the container with caution. Keep container tightly closed when not in use. Do not mix the product with incompatible materials (see section 10).

Avoid breathing vapours. Avoid contact with eyes, skin, and clothing. Use appropriate personal protective equipment (see Section 8). Always observe good occupational hygiene practices: Wash hands thoroughly after handling. Do not eat, drink or smoke when using this product.

Please carefully review the usage guidelines provided on the labelling. Keep out of reach of children.

7.2. Conditions for safe storage, including any incompatibilities

7.2.1. Requirements for safe storage: Keep the product in its original packaging. Store in a cool, dry, and well-ventilated place, away from incompatible materials, food, and feed. Stack containers in a manner that ensures their

stability.

7.2.2. Keep the product away from: Keep away from strong oxidizing agents and bases.

7.2.3. Unsuitable packaging material: Not known.

7.3. Specific end use(s)

Fertiliser [REACH Product Category (PC) 12].

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

8.1.1. Occupational exposure:

a) Occupational exposure limit values:

Country	CAS	Name of agent	Long-term		Short-term		Notation
			ppm	mg/m³	ppm	mg/m³	
European Union*	7664-38-2	Orthophosphoric acid	-	1	-	2 (1)	* EU IOELV (1) 15 min. average value
France**			0.2	1	0.5	2	** *Valeurs limites réglementaires indicatives.*
Norway			-	1	-	-	-
Switzerland				2 (1)		4 (1)(2)	(1) Inhalable fraction. (2) 15 min. average value

b) Biological limit values (BLV):

No limit values are set.

8.1.2. Recommended monitoring procedures: Follow standard monitoring procedures (e.g. EN 14042:2004 Workplace atmospheres - Guide for the application and use of procedures for the assessment of exposure to chemical and biological agents).

8.1.3. Threshold values:

Derived no-effect levels (DNEL): Not applicable (not classified mixture).

Predicted no-effect concentration (PNEC): Not applicable (not classified mixture).

8.2. Exposure controls

8.2.1. Appropriate engineering controls: If user operations generate fumes, gas, vapor, or mist, provide appropriate ventilation controls to minimize worker exposure.

8.2.2. Individual protection measures:

General information:	Ask for advice to your PPE provider and always require that equipment has CE marking. The use of personal protective equipment is mandatory for handling the product. Workers must be trained in the use of protective equipment.
Respiratory protection:	If engineering controls and work practices are not effective in reducing concentration below permissible limits, use respiratory protection. Appropriate respiratory equipment: Filter respirator for gases or gases and particles adapted to the airborne concentration of the substance (half masks in accordance to EN 405:2002+A1:2010).
Hand protection:	Use protective gloves according to EN 374:2020. Material and thickness of the glove will depend on the specific application; consult with your PPE supplier. Gloves should be replaced immediately if any signs of degradation are observed.
Eye protection:	Use face shield or safety glasses according to EN 166, with universal frame and side protection or integral frame, of motorcyclist or diving type, well-fitted, with plastic lenses (e.g., clear PVC). Avoid the use of contact lenses during the handling of chemical products.
Body protection:	Under normal conditions of use, wear industrial-type work clothing that covers the entire body,

	with long sleeves.
Hygiene measures:	Handle in accordance with good industrial hygiene and safety practice. Wash hands before eating, drinking, chewing gum, smoking, or using the toilet. Routinely wash clothing and protective equipment to remove contaminants. Follow the manufacturer's instructions for cleaning/maintaining personal protective equipment. If such instructions are not available, use detergent and hot water for washing. Keep and wash PPE separate from other clothing.

8.2.3. Environmental exposure controls

No specific restrictions, follow your local regulations.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

(a) Physical state:	Liquid.
b) Colour	Colourless.
(c) Odour:	None.
(d) Melting point/freezing point:	Ca. 0°C.
(e) Boiling point or initial boiling point and boiling range:	No data available.
(f) Flammability:	No data available.
(g) Lower and upper explosion limit:	No data available.
(h) Flash point:	No data available.
(i) Auto-ignition temperature:	No data available.
(j) Decomposition temperature:	No data available.
(k) pH:	6.51 at 20°C
(l) Kinematic viscosity:	No data available.
(m) Solubility:	Soluble in water.
(n) Partition coefficient n-octanol/water (log value):	Not applicable (mixture).
(o) Vapour pressure:	No data available.
(p) Density and/or relative density:	1.66 g/ml.
(q) Relative vapour density:	No data available.
(r) Particle characteristics:	Not applicable (liquid).

9.2. Other information

No further information available.

SECTION 10: Stability and reactivity

10.1. Reactivity

No hazardous reaction expected when handled and stored appropriately.

10.2. Chemical stability

Stable under normal conditions of use. It could violently polymerize under the influence of azo compounds and epoxides.

10.3. Possibility of hazardous reactions

Do not mix with solutions containing bleach (gives off chlorine gas) or ammonia (heat liberation).

10.4. Conditions to avoid

Keep away from incompatible materials.

10.5. Incompatible materials

Strong oxidizing agents and bases.

10.6. Hazardous decomposition products

Decomposes upon heating, producing toxic fumes of phosphorus oxides. It may also decompose on contact with alcohols, aldehydes, cyanides, ketones, phenols, esters, sulfides or halogenated organics, producing toxic fumes.

SECTION 11: Toxicological information

11.1. Information on hazard classes as defined in Regulation (EC) No 1272/2008

11.1.1. Toxicological data:

Unless stated otherwise, calculation methods established in Part 3 of Annex I of Regulation (EC) 1272/2008 were used for the purpose of classification.

a) Acute toxicity:	**Phosphoric acid (CAS: 7664-38-2):** **LD50 oral:** > 300 < 2000 mg/kg bw (weight of evidence assessment based on available data). **LD50 dermal:** No reliable data on phosphoric acid are available for the dermal route of exposure, as the substance is corrosive no further testing is deemed necessary. **LC50 inhalation:** No reliable data on phosphoric acid are available for the inhalation route of exposure, as the substance is corrosive no further testing is deemed necessary. **ATE mix oral**: >2000 mg/kg. Based on available data, the classification criteria are not met (method: calculation; source: supplier SDS).
b) Skin corrosion/irritation:	The mixture does not contain classified substances above relevant thresholds. Based on available data, the classification criteria are not met (method: calculation; source: supplier SDS).
c) Serious eye damage/irritation:	The mixture does not contain classified substances above relevant thresholds. Based on available data, the classification criteria are not met (method: calculation; source: supplier SDS).
d) Respiratory or skin sensitisation:	Skin sensitisation: The mixture does not contain classified substances above relevant thresholds. Based on available data, the classification criteria are not met (method: calculation; source: supplier SDS). Respiratory sensitisation: No data available.
e) Germ cell mutagenicity:	The mixture does not contain classified substances above relevant thresholds. Based on available data, the classification criteria are not met (method: calculation; source: supplier SDS).
f) Carcinogenicity:	The mixture does not contain classified substances above relevant thresholds. Based on available data, the classification criteria are not met (method: calculation; source: supplier SDS).
g) Reproductive toxicity:	The mixture does not contain classified substances above relevant thresholds. Based on available data, the classification criteria are not met (method: calculation; source: supplier SDS).
h) STOT-single exposure:	The mixture does not contain classified substances above relevant thresholds. Based on available data, the classification criteria are not met (method: calculation; source: supplier SDS).
i) STOT-repeated exposure:	The mixture does not contain classified substances above relevant thresholds. Based on available data, the classification criteria are not met (method: calculation; source: supplier SDS).
j) Aspiration hazard:	The mixture does not contain classified substances above relevant thresholds. Based on available data, the classification criteria are not met (method: calculation; source: supplier

	SDS).

11.1.2. Information on the likely routes of exposure

The product can be absorbed into the body by inhalation of its aerosol, through the skin and by ingestion.

11.2. Information on other hazards

Endocrine-disrupting properties for human health have not been identified for the components of this mixture.

SECTION 12: Ecological information

12.1. Toxicity

Calculation methods established in Part 4 of Annex I of Regulation (EC) 1272/2008 have been used for hazard classification. The mixture does not contain substances classified as hazardous to the environment above relevant thresholds.

12.2. Persistence and degradability

Not applicable (no substances identified in section 3 as hazardous to the environment).

12.3. Bioaccumulative potential

Not applicable (no substances identified in section 3 as hazardous to the environment).

12.4. Mobility in soil

Not applicable (no substances identified in section 3 as hazardous to the environment).

12.5. Results of PBT and vPvB assessment

PBT assessment is not applicable (mixture of inorganic substances).

12.6. Endocrine disrupting properties

Endocrine-disrupting properties for the environment have not been identified for the components of this mixture.

12.7. Other adverse effects

Large quantities of fertiliser released into the environment may kill vegetation and fish and cause algae blooms if bodies of water are contaminated.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Please contact your supplier or an authorized waste management facility if you need guidance on disposing of the product.

Remaining product: Same safety measures in place for handling the product must be taken into consideration when handling waste. Waste should not be disposed of by release to sewers. Waste should be delivered to an authorized waste management facility for proper treatment and disposal.

Contaminated packaging: Disposal should be carried out in accordance with local regulations.

European waste code: 06 10 (fertiliser waste).

Applicable regulations (EU): Directive 2008/98/EC. Check your local regulations regarding waste.

SECTION 14: Transport information

14.1. UN number or ID number

Not defined as dangerous goods under transport regulations.

14.2. UN proper shipping name

Not applicable.

14.3. Transport hazard class(es)

Not applicable.

14.4. Packing group

Not applicable.

14.5. Environmental hazards

Not applicable.

14.6. Special precautions for user

Transport within user's premises: always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

14.7. Maritime transport in bulk according to IMO instruments

Not applicable.

SECTION 15: Regulatory information

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

- REACH Annex XVII - Use Restrictions: Not listed.
- REACH Annex XIV - List of substances subject to authorization: Not listed.
- PIC Procedure (Regulation EC 649/2012): Not applicable.
- Fertilising products (Regulation (EU) 2019/1009): PFC 1(C)(I)(b)(ii): Compound liquid inorganic macronutrient fertiliser.
- Explosives precursors (Regulation (EU) 2019/1148): Not applicable.
- Drug Precursors (Regulation CE 273/2004): Not applicable.

Storages:

- Directive 2012/18/EU on the control of major-accident hazards involving dangerous substances (SEVESO): Not applicable.
- Please refer to your local regulations on the storage of chemical products.
- Water hazard class (WGK) – Germany (AwSV): WGK 1.

15.2. Chemical safety assessment

Supplier has not carried out a chemical safety assessment of the mixture. Exposure scenarios for the substances contained in the mixture are not required (not classified mixture).

SECTION 16: Other information

Advice on any training appropriate for workers:

To ensure protection of human health and environment, workers must be provided with proper training about how to handle and store chemicals used at work.

Hazard statements in full and classification codes indicated in section 3:

Acute Tox. 4: Acute toxicity (oral), Hazard Category 4.

H302: Harmful if swallowed.

Eye Dam. 1: Serious eye damage, Hazard Category 1

H318: Causes serious eye damage.

Eye Irrit. 2: Serious eye irritation, Hazard Category 2.

H319: Causes serious eye irritation.

Met. Corr. 1: Corrosive to metals, Hazard Category 1.

H290: May be corrosive to metals.

Skin Corr. 1B: Skin corrosion, Hazard Category 1, Sub-Category 1B.

H314: Causes severe skin burns and eye damage.

Skin Irrit. 2: Skin irritation, Hazard Category 2.

H315: Causes skin irritation.

Abbreviations and acronyms:

ATE	Acute Toxicity Estimation.
CLP	Regulation EC 1272/2008.
PBT	Persistent, Bioaccumulative and Toxic.
PPE	Personal protective equipment.

REACH	Regulation EC 1907/2006.
SCL	Specific Concentration Limit.
SDS	Safety data sheet.
SVHC	Substances of very high concern.
UFI	Unique Formula Identifier.
vPvB	Very persistent and very bioaccumulative.

Methods of evaluating information used for the purpose of classification: See sections 11 and 12.

Version number: 1.0.

Replaced version: -

Changes compared to the previous version: -

Key literature references and sources for data:

- GESTIS International Limit Values database.
- Internal company documentation.
- Supplier Safety Data Sheets.
- ECHA database.

Note to the reader:

The information provided in this Safety Data Sheet has been prepared in accordance with Commission Regulation (EU) 2020/878 of 18 June 2020 amending Annex II to Regulation (EC) 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH). It is recommended that this Safety Data Sheet is carefully studied, and if necessary, consult a specialist in order to understand the data it contains. The information presented herein corresponds to the present state of our knowledge and is offered in good faith. Nevertheless, the purpose of this SDS is purely informative; it makes no implicit or explicit warranty or guarantee about the properties of the product.

The information provided in this SDS should be considered as a starting point for a comprehensive health and safety program in your company, if you need further information about the product to conduct your risk assessment, please contact us and we will try to assist you as much as possible.