



Safety Data Sheet

Advanced Nutrients pH-Up

Section 1. Identification

GHS product identifier	: Advanced Nutrients pH-Up
Other means of identification	: Product Code: 3850 Formula Code: 001A
Recommended use of the chemical and restriction on use	: A solution used to maintain optimum pH level for proper plant growth when the pH of the nutrient solution or growing medium gets too low. Not to be used as food or feed in any forms.
Supplier/Manufacturer's details	: Advanced Nutrients Ltd. 109-31063 Wheel Ave. Abbotsford, BC Canada V2T6H1 Tel: (877) 604-8637 Email: info@advancednutrients.com www.advancednutrients.com
Emergency Phone number	: 24 Hour Transportation Emergency Number – CHEMTREC 1-800-424-9300 U.S.A, Canada, International

Section 2. Hazard Identification

GHS classification of the substance/mixture	: Acute Toxic – Category 4 Skin Corrosion -1A
GHS label elements	
Pictogram symbol	:  
Signal word	: Warning Danger
Hazard statement	: Harmful if swallowed or inhaled. Causes severe skin burn or eye damage.
Precautionary statement	
General	: Read label before use. Keep out of reach of children. If medical advice is needed, have product container/label at hand.
Prevention	: Wash hands thoroughly after handling. Do not eat, drink or smoke when using this product. Wear protective gloves/protective clothing/eye

Response	<p>protection /face protection. Avoid breathing fume/gas/mist/vapours spray. Use only outdoors or in a well-ventilated area.</p> <p>: If swallowed: call a poison center or doctor if you feel unwell. Rinse mouth thoroughly. Do not induce vomiting.</p> <p>If on skin (hair): take off immediately all contaminated clothing. Rinse skin with plenty of water. Wash contaminated clothings before use. Call a poison center or doctor if you feel unwell.</p> <p>If inhaled: Remove person to fresh air and kept comfortable for breathing. Immediately poison center or doctor if you feel unwell.</p> <p>If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.</p>
Storage	: Store in cool and dry place. Store locked up.
Disposal	: Dispose of contents and container in accordance with local, regional, national and international regulations.
Other hazards (not covered the GHS)	: Not applicable.

Section 3. Composition/Information on Ingredients

Substance/Mixture	: Mixture
Chemical identity	: Not applicable
Common name/synonym	: Not available
CAS number and other unique identifiers	: Not applicable
Impurities and stabilizing additives	: Not applicable

Ingredient name	CAS number	% (w/w)	Classification according to OSHA Law and Regulations
Potassium Hydroxide	1310-58-3	35-50	N.A

The chemical identity of the remaining ingredients and their exact proportions used in the mixture are a proprietary trade secret (protected by the Confidential Business Information – CBI) and, within the current knowledge of the manufacturer and in the concentration applicable, they are not hazardous to health or the environment.

Section 4. First-aid Measures

Description of necessary measures

- Self-protection of first-aiders** : No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus.
- General information** : Remove contaminated clothing immediately. In case of accident or unwellness, seek medical attention immediately.
- Inhalation** : Remove victim to fresh air. Give artificial respiration only if breathing has stopped. If breathing is difficult, give oxygen. Seek immediate medical attention.
- Skin contact** : Remove contaminated clothing. Wash affected area with soap and water. Seek medical attention if irritation occurs or persists.
- Eye contact** : Check for and remove any contact lenses. Flush immediately with water for at least 20 minutes. Forcibly hold eyelids apart to ensure complete irrigation of eye tissue. Seek immediate medical attention.
- Ingestion** : Do not induce vomiting. If vomiting occurs, lean victim forward to prevent breathing in vomit. Give a cup of water to dilute. Do not give anything by mouth to an unconscious or convulsing person. Seek immediate medical attention.

Most important symptoms/effects, acute and delayed:

- Inhalation** : Exposure to decomposition products may cause a health hazard. Serious effects may be delayed following exposure.
- Skin contact** : Immediate severe skin burn due to skin contact.
- Eye contact** : If in eyes it causes severe eye irritation.
- Ingestion** : Irritating to mouth, throat and stomach.

Indication of immediate medical attention and special treatment needed:

- Notes to physician** : Probable mucosal damage may contraindicate the use of gastric lavage.
- Specific treatments** : No specific treatment.

See also toxicological information (Section 11).

Section 5. Fire-fighting Methods

- Suitable extinguishing media** : Where fire is involved use any fire fighting agent that is appropriate extinguishing media for material that is supplying the fuel to the fire.
- Unsuitable extinguishing media** : Not known.

Specific hazards arising from the chemical	: The product may react with metals such as aluminum, tin, zinc to form flammable and explosive hydrogen gas.
Special protective equipment for fire-fighters	: Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.
Special protective precautions for fire-fighters	: No special protection is required.

Section 6. Accidental Release Measures

Personal precautions, protective equipment and emergency procedures

For non-emergency personnel : Avoid breathing vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.

For emergency personnel : If specialized clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

Environmental precautions : Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

Methods and materials for containment and clean up

Small spill : Stop leak if without risk. Move containers from spill area. Use spark-proof tools and explosion-proof equipment. Dilute with water and mop up if water-soluble. Do not absorb in sawdust or other combustible material. It may lead to a fire risk when it dries out. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose via a licensed waste disposal contractor.

Large spill : Stop leak if without risk. Move containers from spill area. Use spark-proof tools and explosion-proof equipment. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Do not absorb in sawdust or other combustible material. It may lead to a fire risk when it dries out. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations. Dispose via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilled product.

Section 7. Handling and Storage

Precautions for safe handling

Advice on general hygiene

: Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

Protective measures

: Put on appropriate personal protective equipment (see Section 8). Do not ingest. Avoid contact with eyes, skin and clothing. Avoid breathing vapor or mist. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain product residue and can be hazardous. Do not reuse container.

Conditions for safe storage and any incompatibilities

: Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Store locked up. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination.

Section 8. Exposure Controls/Personal Protection

Control parameters

Occupational exposure limits

: Not applicable according to OSHA's mandatory PELs in the Z-Tables.

Biological limit values

: None.

Appropriate engineering controls

: Use only with adequate ventilation. If user operations generate dust, fumes, gas, vapor or mist, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits.

Environmental exposure controls

: Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation.

Individual protection measures

Hygiene measures	:	Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Ensure that eyewash stations and safety showers are close to the workstation location.
Personal Protective Equipment (PPE)	:	PPE should be used in conjunction with other control measures, including engineering controls, ventilation and isolation. See Section 5 (Fire-fighting measures) of the SDS for specific fire/chemical PPE advice.
Eye/face protection	:	Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts.
Skin protection	:	Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product. Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.
Respiratory protection	:	Use a properly fitted, air-purifying or supplied air respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.
Thermal hazards	:	None.

Section 9. Physical and Chemical Properties

Appearance (physical state)	:	Clear to white/light grey viscous liquid.
Odor	:	Odorless
Odor threshold	:	Odorless
pH	:	13.5 (0.1M Solution)
Melting point/Freezing point	:	-29°C (-20.2°F)
Initial boiling point and boiling range	:	132.2°C (270°F)
Flash point	:	Not applicable
Evaporation rate	:	Not available

Flammability (solid, gas)	: Not flammable
Upper/lower flammability or explosive limits	: Not applicable
Vapor pressure	: 390 mm Hg at 60°C
Vapor density	: Not available
Specific gravity	: 1.457 (@15.6°C)
Solubility (ies)	: Miscible in water
Partition coefficient: n-octanol/water	: Not available
Auto-ignition temperature	: Not applicable
Decomposition temperature	: Not available
Viscosity	: Not available

Section 10. Stability and Reactivity

Reactivity	: No specific test data related to reactivity available for this product or its ingredients.
Chemical stability	: Normally stable. Will absorb carbon dioxide from the air to form potassium carbonate.
Possibility of hazardous reactions	: Under normal conditions of storage and use, hazardous reactions will not occur.
Conditions to avoid	: Keep from freezing. Avoid contact with skin, eyes or ingestion.
Incompatible materials	: Reacts vigorously or violently with many organic and inorganic chemicals such as: acids, acrolein, acrylonitrile, chlorinated hydrocarbons (ie: 1,2 dichloroethylene, trichloroethylene), chlorine dioxide, maleic anhydride, nitroethane, nitroparaffins, 2-nitrophenol, nitropropane, phosphorus, potassium persulphate, and tetrahydrofuran (containing peroxides). Will react with aluminum, tin, zinc or sodium borohydride forming hydrogen gas. Mixing with water can cause spattering and release of large amounts of heat.
Hazardous decomposition products	: Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Section 11. Toxicological Information

Acute toxicity				
Ingredient	Toxicity	Species	Dose	Remark
Potassium Hydroxide	Oral LD50	Rat	273 mg/kg bw	
	Inhalation LC50	Not available	Not available	
	Dermal LD50	Not available	Not available	

Skin corrosion/irritation	: It causes severe skin burn.
Serious eye damage/irritation	: It causes severe eye damage.
Respiratory or skin sensitization	: No data available.
Germ cell mutagenicity	: No data available.
Carcinogenicity	: One study was identified relative to potassium hydroxide and carcinogenicity. Mice painted with a 3 to 6% aqueous potassium hydroxide solution for 46 weeks developed skin tumors. This study was conducted in 1925 and the adequacy of the test and its design are unknown. No conclusions can be drawn from this study. Potassium hydroxide is not listed on the IARC, OSHA or NTP carcinogen lists.
Reproductive toxicity	: No data available.
STOT-single exposure	: No data available.
STOT-repeated exposure	: No data available.
Aspiration hazard	: No data available.
The Likely routes of exposure, health effects and Symptoms related to the physical, chemical and toxicological characteristics	
Eye contact	: If in eyes, it causes eye irritation. The symptoms may include irritation, watering and redness.
Inhalation	: It harmful if inhaled.
Skin contact	: A study with a 10% solution showed severe tissue damage when applied to skin for 4 hours.
Ingestion	: It is harmful if ingested. Irritating to mouth, throat and stomach. There is no known health effect.
Delayed and immediate effects and also chronic effects from short or long term exposure	
Short-term exposure	
Potential immediate effects	: No data available.
Potential delayed effects	: No data available.
Long-term exposure	
Potential immediate effects	: No data available.
Potential delayed effects	: No data available.
Potential Chronic health effect	: No data available.
Numerical measures of toxicity	
Acute toxicity estimate	
Oral	: No data available.
Inhalation of vapors	: No data available.


Section 12. Ecological Information

Toxicity				
Ingredient name	Result	Species	Exposure	Reference
Potassium Hydroxide	Acute LC50 80 mg/L	Mosquito Fish	25 hours	ClearTech
Persistence and degradability	: No data available.			
Bio accumulative potential	: No data available.			
Mobility in soil	: No data available.			
Other adverse effects	: May cause shifts in water pH outside the range of pH 5-10. This change may be toxic to aquatic organisms.			

Section 13. Disposal Considerations

Disposal of waste methods	: Disposal of all waste must be done in accordance with municipal, provincial and federal regulations. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. No sewage disposal!!
Contaminated packaging	: Empty containers should be recycled or disposed of through an approved waste management facility. Persons conducting disposal, recycling or reclamation activities should follow the information in Section 8 of this SDS.

Section 14. Transport Information

Identification of ingredients according to UN Model Regulations	
UN number	1814
UN proper shipping name	Potassium Hydroxide
Transport hazard class(es)	 8
Packing group	II
Special precaution 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.
Transport in bulk	Not applicable (\leq 1000L-container).

Environmental hazards

Ingredient's name	IMDG	UN	ADR	RID	ADN
Potassium Hydroxide	Yes	Yes	Yes	Yes	Yes

Section 15. Regulatory Information

Safety, health and environmental regulations specific for the product in question	:	No known specific national and/or regional regulations applicable to this product (including its ingredients).
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Section 16. Other Information

Prepared by	:	Department of Product Development, Advanced Nutrients Ltd., Canada
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Revised Sections	:	Section 1
Key Acronyms:		
ADN	:	The European Agreement concerning the International Transport of Dangerous Goods by Inland Waterways
ADR	:	The European Agreement concerning the International Carriage of Dangerous Goods by Road
BW	:	Body Weight
IATA	:	International Air Transport Association shipment of Dangerous Goods Regulation
IMDG	:	International Maritime Dangerous Goods code
RID	:	The Regulation concerning the International Carriage of Dangerous Goods by Rail
SDS	:	Safety Data Sheet
Key Literature References:		
		Convention concerning International Carriage by Rail (COTIF) Appendix C – Regulation concerning the International Carriage of Dangerous Goods by Rail (RID), with effect from 1 January 2013. Intergovernmental Organization for International Carriage by Rail (OTIF). Berne, Switzerland, 2012.
		European Chemical Agency (ECHA) 2015. Information on Chemicals: Registered substances http://echa.europa.eu/information-on-chemicals/registered-substances . Online Database. Accessed on March 16, 2015.
		European Agreement concerning the International Transport of Dangerous Goods by Inland Waterways (ADN), including the Annexed Regulations, applicable as from 1 January 2013. Volume I and Volume II. ECE/TRANS/231 (Vol. I & II). UN Economic Commission for Europe-Committee on Inland Transport. New York and Geneva, 2012.
		European Agreement concerning the International Carriage of Dangerous Goods by Road (ADR), applicable as from 1 January 2013. Volume I and Volume II. ECE/TRANS/225

(Vol. I & II). United Nations Economic Commission for Europe-Committee on Inland Transport, New York and Geneva, 2012.

Globally Harmonized System of Classification and Labelling of Chemicals. 5th Edition. ST/SG/AC. 10.30/Rev. 5. United Nations, New York and Geneva, 2013.

Guidance on Labelling and Packaging Regulation in Accordance with EU Regulation 1272/2008 on the classification, labelling and packaging of substances and mixtures (CLP Regulation). European Chemical Agency, Finland, 2011.

International Maritime Dangerous Goods (IMDG) Code Volume 1 and 2. Incorporating Amendment 33-06, 2006 Edition. International Maritime Organization. London, 2006.

OSH Answers Fact Sheets. Canadian Centre for Occupational Health and Safety. http://www.ccohs.ca/oshanswers/chemicals/oxidizing/oxiziding_hazards.html
Accessed on April 08, 2015.

OSHA Law and Regulations. Occupational Safety and Health Standards 29 CFR: 1910. <https://www.osha.gov/law-regs.html> Accessed on April 15, 2015.

Recommendations on the Transport of Dangerous Goods – Manual of Test and Criteria. 5th Edition. ST/SG/AC. 10/11/Rev. 5. United Nations, New York and Geneva, 2009.

Recommendations on the Transport of Dangerous Goods – Model Regulations. 18th Edition. Volume I and II. ST/SG/AC. 10/1/Rev. 18. UN, New York and Geneva, 2013.

Regulation (EC) No. 1272/2008 of the European Parliament and of the Council 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. Official Journal of the European Union L 353/1. 2008.

Others : The data here is for hazard communication to our employees, our customers and their employees and authorized regulatory agencies. For the intended purpose, this SDS may be duplicated or the data transcribed to an alternative form.

Note: The information contained herein is provided in good faith and is believed to be correct as of the date of hereof. However, Advanced Nutrients Ltd. makes no representation as to the comprehensiveness or accuracy of the information provided. It is expected that individuals receiving the information will exercise their independent judgement in determining the appropriateness for a particular period. Accordingly, Advanced Nutrients Ltd. will not be responsible for damages of any kind resulting from the use of or reliance upon such information. No representations or warranties, either expressed or implied, of merchantability, fitness for a particular purpose or any other nature are made hereunder to which the information refers. The responsibility to provide a safe workplace remains with the user. The user should consider the health hazards and safety information contained herein as a guide and should take those precautions required in an individual operation to instruct employees and develop work practice procedures for a safe work environment.