



SAFETY DATA SHEET

In accordance with Regulations (EC) n° 1907/2006 and (EC) n° 1272/2008

SECTION 1

IDENTIFICATION OF THE MIXTURE AND OF THE COMPANY /UNDERTAKING

1.1. Product identifier

Mixture name:	Superior 20% Concentrate
Product Code:	A003

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

Relevant identified use:	Plant strengthener/foliar fertilizer for use in agriculture and horticulture.
Uses advised against:	There are no specific uses advised against.

1.3. Details of the supplier of the safety data sheet

Supplier: Atlantic Gold.
Head office: 23 Rathgar Avenue, Rathgar, Dublin 6, Ireland.
Tel: +353-1-451-2608
Fax: +353-1-451-2612

E-mail address of the competent person responsible for the Safety Data Sheet: mat@atlanticgold.ie

1.4. Emergency telephone number

Emergency telephone number (out of office hours): +353833338885 (Gabriel Keenan)
Emergency Contact Name: Quality, Safety and Environmental Manager (Gabriel Keenan)
Emergency Contact Times: Monday - Friday, 9am – 5pm (GMT)



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SECTION 2 HAZARDS IDENTIFICATION


2.1 Classification of the mixture

Classification of the substance in accordance with Regulation (EC) N°. 1272/2008:

Hazard class	Class code and hazard category	Hazard statement
Skin corrosion/irritation	Skin Corr. 1A	H314: Causes severe skin burns and eye damage

2.2 Label elements

Labelling in accordance with Regulation (EC) N. 1272/2008:

Pictograms	
Signal word	Danger
Hazard statements (H)	H314 - Causes severe skin burns and eye damage
Precautionary statements (P)	P102 – Keep out of reach of children P260 - Do not breathe dust/fume/gas/mist/vapours/spray. P280 - Wear protective gloves, protective clothing, eye protection and face protection P301 + P330 + P331 - IF SWALLOWED: Rinse mouth. Do NOT induce vomiting. P303 + P361 + P353 – IF ON SKIN (or hair): Wash skin with water/ shower. Wash contaminated clothing before reuse P405 - Store away from food, drink and animal feed.
Supplemental information	If skin irritation occurs: Get medical advice/attention Keep out of the reach of children This product may stain skin upon prolonged exposure.

2.3 Other hazards (which do not results in the classification)

The mixture satisfies the PBT criteria

- PBT
- vPvB

YES	NO
	X
	X

Given the pH range of 5.8 – 7.0, the following applies:

- Metals: The substance may be corrosive to metals.

Physico-chemical hazards: The components Phosphoric acid and Potassium hydroxide are corrosive to metal.
Health hazards: Ingestion: might cause nausea, vomiting, and digestive disorders in general.



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Inhalation: might cause irritation.

SECTION 3 COMPOSITION/INFORMATION ON INGREDIENTS

Hazardous ingredients:

Name	Number EC	Number CAS	Conc.% (w/w)	Classification (1272/2008/CE) ^[*]
Phosphoric acid	231-633-2	7664-38-2	5 - 15	Met Corr. 1, H290 Acute Tox. 4, H302 Skin Corr.1A, H314 <u>Specific Conc. Limits:</u> Skin Irrit. 2; H315: 10% ≤ C < 25% Skin Corr. 1B; H314: C ≥ 25% Eye Irrit. 2; H319: 10% ≤ C < 25%
Potassium hydroxide	215-181-3	1310-58-3	0- 10	Met. Corr. 1, H290 Acute Tox. 4, H302 Skin Corr. 1A, H314 <u>Specific Conc. Limits:</u> Skin Irrit. 2; H315: 0,5% ≤ C < 2% Skin Corr. 1A; H314: C ≥ 5% Skin Corr. 1B; H314: 2% ≤ C < 5% Eye Irrit. 2; H319: 0,5% ≤ C < 2%

^[*]For the explanation of Hazard statements and Risk phrases: see Section 16

Other substances:

Ascophyllum nodosum, extract - CAS Number 84775-78-0 (REACH registration number: 01-2120070500-70-0000)
Zinc, Manganese, Copper, Urea, Potassium, Phosphorous, Boron and Nitrogen.

SECTION 4 FIRST AID MEASURES

4.1 Description of the first aid measures

<i>Eye contact:</i>	Rinse eyes with water for at least 15 minutes, lifting the upper and lower eyelids. Seek medical advice immediately.
<i>Skin contact:</i>	Remove contaminated clothing and wash with soap and water. Seek medical advice if irritation occurs
<i>Ingestion:</i>	Do not administer anything orally and do not induce vomiting if patient is unconscious. Seek medical advice immediately.
<i>Inhalation:</i>	Remove patient from exposure site and transfer him in a well ventilated place. Get medical attention.
<i>First Aid Responders</i>	Wear rubber or nitrile gloves to prevent contact with skin.

4.2 Most important symptoms and effects, both acute and delayed

<i>Acute symptoms and effects:</i>	Contact with skin and eye: Causes severe skin burns and eye damage Ingestion: might cause nausea, vomiting, digestive disorders in general
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Delayed symptoms and effects: Delayed symptoms and effects are not known.

4.3 Indication of any immediate medical attention and special treatment needed

In case of poisoning call the doctor. Consult a Poison Control Center.

SECTION 5 FIREFIGHTING MEASURES

This substance is non-flammable and non-explosive

5.1 Extinguishing media

- *Suitable extinguishing media* Carbon dioxide, Water spray, dry chemical, foam.
In the event of a fire, keep containers cool with water spray.
Slippery in liquid form or when mixed with water
- *Unsuitable extinguishing media* Not known.

5.2 Special hazards arising from the mixture

Hazardous combustion products: In case of contact with acids or reducing substances, or on heating, the product may produce toxic fumes.

5.3 Advice for firefighters

- *Recommendations, protection techniques:* Do not try to extinguish the fire without the use of a self-contained breathing apparatus (SCBA) and suitable protective clothing.
- *Special protective equipment for fire fighters* Wear protective equipment for eyes and face, boots, gloves, complying with the relevant EN standards. Use the devices in maximum precautionary conditions based on the information reported in previous subsections.

SECTION 6 ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

When handling a spill of this product, wear suitable protective equipment; for recommendations see EXPOSURE CONTROLS / PERSONAL PROTECTION. If exposed to material during cleaning operations, see First Aid Measures, for actions to follow. Immediately remove the contaminated clothing. Immediately after exposure, wash contaminated skin with soap and water. Wash clothing before reuse.

6.2 Environmental precautions

In case of accidental release or spill, avoid discharge to surface water or groundwater. If significant volume of the product has run into a watercourse, sewer or contaminate soil or vegetation, notify the competent authorities.

6.3 Methods and material for containment and cleaning up

Methods and material for containment and cleaning up: Stop the leak as much as possible. Collect material scattered on the ground wearing appropriate protective equipment, and place it in a clean and dry Container. Wash the area with plenty of water



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- *Small spills* May be washed to drain.
- *Large spills* Contain spill with sand, sawdust, absorbent clay or similar material. Sweep up and transfer material into labelled containers for transfer to a safe place for disposal. Flush the area with plenty of water when all the spillage has been removed. This product will stain concrete.
- *Drainage* Do not discharge into drains or rivers. Prevent the spillage from entering Watercourses, s e w e r s or drains if possible. Inform the authorities if gross contamination of water is threatened or occurs.

6.4 Reference to other sections

See also sections 8 and 13

SECTION 7 HANDLING AND STORAGE

7.1. Precautions for safe handling

Recommendation for handling: Handle in a well ventilated places.
Wear suitable Personal Protective Equipment (see section 8).
Avoid breathing mist/spray/dust/fumes/gas/vapors.
If irritation occurs: Get medical advice/attention.
Keep out of reach of children.
Avoid excessive handling which may cause staining of skin.
Wash your hands after use.

Advice on general occupational hygiene: Do not eat, drink and smoke in the working areas.
Wash hands after handling the substance.
Remove contaminated clothing and personal protective equipment before entering eating areas.

7.2. Condition for safe storage including any incompatibilities

Store product in original container in a cool, ventilated area away from moisture. Store in a suitable cool, dry location, out of direct sunlight, away from direct sources of heat. Keep containers tightly closed. Store in containers correctly labelled. Protect from frost. Keep away from food, drink and animal feeding stuffs.

7.3. Specific end use(s)

- Recommendation for specific final use(s): Chemical for agriculture.

	YES	NO
- Exposure scenario attached		X
- Chemical Safety Assessment (CSA) attached		X
- Other available Safety Assessments (safety assessments of industry or market sectors)		X



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SECTION 8 EXPOSURE CONTROLS/ PERSONAL PROTECTION

8.1. Control parameters

Community/National Exposure Limit values :	Occupational	STEL = 3 mg/m ³ (Phosphoric acid) TWA = 1 mg/m ³ (Phosphoric acid)
Other Exposure Limit values:	National Occupational	Not defined.
Community/ Limit values (BEI):	National Biological	Not defined.
Other values:	National Biological Limit	Not defined.
Occupational Values outside the EU:	Exposure Limit	PEL/REL = 1 mg/m ³ (Phosphoric acid)
Procedures for environmental monitoring:		The measurement of substances in the workplace must be carried out with standardized methods (e.g. EN 689:1997: Workplace atmospheres - Guide for assessment of exposure by inhalation to chemical agents for comparison with limit values and measurement strategy; EN 482:2006: atmospheres in the workplace - General requirements for the provision of procedures for the measurement of chemical agents) or, failing that, with appropriate methods.
DNEL values (for components)		Not available.
PNEC values (for components):		Not available.

8.2. Exposure controls

Personal Protective Equipment's

Respiratory protection:	In case of exceeding the threshold value (if available) of one or more of the substances present in the product wear a mask with type A filter or universal type filter, the class (1, 2 or 3) should be chosen according to the limit concentration of use. The use of respiratory protection equipment is necessary in absence of technical measures limiting worker exposure.
Hands protection:	Use gloves to ensure adequate protection to the permeability (eg. Butyl rubber, nitrile rubber). Remove and replace gloves immediately if there are signs of degradation or chemical infiltration. Rinse and remove gloves immediately after use and wash hands with soap and water.
Eye protection:	Wear protective goggles. Eyewash facilities should be available.
Body protection:	Wear appropriate protective clothing chemically resistant.
Environmental exposure controls:	Avoid letting product reach surface or subterranean waters.
Engineering Controls:	Advisable to spray product in a well-ventilated area. Do not intentionally breathe spray.

SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties



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Appearance:	Black/ brown liquid
Odor:	Marine.
Olfactive threshold:	Not available.
pH:	5.8 – 7.0
Melting point / freezing point:	Not available.
Boiling point and boiling range:	Not available.
Flash point:	Not available.
Evaporation rate:	Not available.
Flammability (solid, gas):	Not available.
Upper/lower flammability or explosive limits:	Not available.
Vapour pressure:	Not available.
Vapor density:	Not available.
Density:	1.23 1.26 kg/l
Solubility in water:	Soluble ($\geq 99\%$)
Solubility in organic solvents:	Not available.
Octanol/water partition coefficient (Log Kow):	Not available.
Autoignition temperature:	Not available.
Decomposition temperature:	Not available.
Viscosity:	Not available.
Explosive properties:	Not available.
Exidant properties:	Not available.

9.2. Other information

Not available.

SECTION 10 STABILITY AND REACTIVITY

10.1. Reactivity

The mixture is not considered reactive under normal conditions of use.

10.2. Chemical stability

The mixture is stable under normal conditions of temperature and pressure and when stored stored in closed containers in a well ventilated and cool place. It can be stored for 2 years in unopened containers.

Potassium hydroxide and Phosphoric acid are corrosive, can give rise to hazardous reactions.

10.3. Possibility of hazardous reactions

Under normal conditions of storage and use, hazardous reactions will not occur.

10.4. Condition to avoid

Potential heat, high temperatures, ignition sources, moisture, direct sunlight, freezing



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10.5. Incompatible materials

Avoid contact with metals, Potassium hydroxide and Phosphoric acid are classified corrosive to metals. Avoid contact with oxidizing and reducing agents. Oxidants and acids may cause degradation. Do not mix with highly acidic or alkaline chemicals.

10.6. Hazardous decomposition products

On heating at high temperatures the product may decompose, releasing toxic fumes and gases containing CO_x, NO_x, and other substances in the event of incomplete decomposition.

SECTION 11 TOXICOLOGICAL INFORMATION

Effects (acute, delayed, chronic) following the exposure (short and/or prolonged):

Dermal: Skin Contact: corrosive.
Eye contact: corrosive.
Inhalation: Might cause irritation of the mucous membranes of the upper airway.
Ingestion: corrosive.

Toxicological information on hazardous components:

Acute toxicity effects:

<i>Oral:</i>	LD ₅₀ (rat) = 1.530	mg/kg	Phosphoric acid
	LD ₅₀ (rat) = 333	mg/kg	Potassium hydroxide
<i>Dermal:</i>	LD ₅₀ (rabbit) = 2.740	mg/kg	Phosphoric acid
<i>Inhalation:</i>	LC ₅₀ (rat) = 850	mg/m ³ /1h	Phosphoric acid

Skin corrosion/irritation:

Potassium hydroxide and Phosphoric acid cause severe skin burns.

Serious eye damage/ irritation:

Potassium hydroxide and Phosphoric acid cause severe eye injury.

Sensitization:

Skin: No data on the mixture; Potassium hydroxide does not cause sensitization.

Inhalation: Not available.

CMR Effects:

Mutagenicity: Not available.
Carcinogenicity: Not available.
Reproductive toxicity: Not available.

Specific target organ toxicity (STOT) - single exposure: Not available.

Specific target organ toxicity (STOT) - repeated exposure: Not available.



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Aspiration hazard: There is no evidence that the mixture can cause aspiration toxicity.

Reasons for no classification:

When the mixture is not classified for a particular hazard class, this is due to lack of data, inconclusive data or data which are conclusive although insufficient for the classification based on the criteria defined by the legislation, mentioned in this Safety Data Sheet.

SECTION 12 ECOLOGICAL INFORMATION

12.1. Toxicity

Toxicity to Plants: High concentrations may cause scorching in plants

Toxicity to Aquatic organisms:

Toxicity to fish:	LC ₅₀ (<i>Mosquitofish (Gambusia)</i>) = 138 mg/l/96 h	Phosphoric acid
	LC ₅₀ (<i>Gambusia affinis</i>) = 80 mg/l/96 h	Potassium hydroxide
Toxicity to <i>Daphnia magna</i> :	Not available	
Toxicity to algae:	Not available	

12.2. Persistence and degradability

Some nutrients present are fundamentally inorganic and persistent (Zinc, Manganese, Copper, Urea, Potassium, Phosphorus, Boron and Nitrogen).

12.3. Bioaccumulative potential

No data available for the mixture.

12.4. Mobility in soil

No data available for the mixture.

12.5. Results of PBT e vPvB assessment

Chemical safety report and PBT/vPvB assessment: not performed.

12.6. Other adverse effects

Other adverse effects are not expected.

Reasons for no classification:

When the mixture is not classified for a particular hazard class, this is due to lack of data, inconclusive data or data which are conclusive although insufficient for the classification based on the criteria defined by the legislation, mentioned in this Safety Data Sheet.



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SECTION 13 DISPOSAL CONSIDERATION

13.1. Waste treatment methods

Any disposal practice must be in compliance with all local, national and Community laws and regulations. Send wastes to disposal (landfill or incinerator) or recycle them. Do not dump into any sewers, on the ground, or into any body of water. Person carrying out disposal should wear PVC gloves. Do not contaminate surface waters or ditches with product or used containers.

SECTION 14 TRANSPORT INFORMATION

- **ONU Number:** 1814
- **UN proper shipping name:** POTASSIUM HYDROXIDE SOLUTION (Potassium hydroxide, Phosphoric acid)

ADR



Class, Code, Group: 8 C5 III
Hazard identification number: 80
Limited quantities (LQ): 5 L
Tunnel Restriction Code: (E)

RID



Class, Code, Group: 8 C5 III
Hazard identification number: 80
Limited quantities (LQ): 5 L

IMDG



Class: 8
Packaging group: III
EmS sheet: F-A, S-B
Limited quantities (LQ): 5 L
Marine Pollutant: NO

IATA



Class: 8
Packaging group: III
Hazard Label: Corrosive
Erg code: 8L
Passenger and cargo: (LIMITED QUANTITY) P.I.: Y841;
max net quantity per pack: 1 L;



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Passenger and cargo: P.I.: 852; max net q.ty per pack: 5 L;
Cargo only: P.I.: 856; max net q.ty per pack: 60 L.
Special provision: A803.

SECTION 15 REGULATORY INFORMATION

In this section, all other information on regulation are reported if not provided in other sections/subsection of the Safety Data Sheet.

15.1 Safety, Health and Environmental regulation/legislation specific for the substance

- Council Directive 89/391/EEC of 12 June 1989 on the introduction of measures to encourage improvements in the safety and health of workers at work
- Council Directive 89/686/EEC of 21 December 1989 on the approximation of the laws of the Member States relating to personal protective equipment
- Council Directive 98/24/EC of 7 April 1998 on the protection of the health and safety of workers from the risks related to chemical agents at work (fourteenth individual Directive within the meaning of Article 16(1) of Directive 89/391/EEC)

15.2. Chemical Safety Assessment

Not performed.

SECTION 16 OTHER INFORMATION

Revisions:

- Edition n.12, 24th July 2015 (First Edition in accordance with Regulation (CE) N. 1907/2006 and subsequent modifications and supplements and Regulation (CE) N. 1272/2008)

Literature references and sources for data:

Previous SDS
ChemID plus Lite
DailyMed site
EPA site
ECHA site

Acronyms

- ACGIH: American Conference of Governmental Industrial Hygienists
- ADI : Admissible Daily Intake
- ADME: absorption, distribution, metabolism, and excretion
- ADR: Agreement concerning the carriage of dangerous goods by Road
- AEL : Admissible Exposure level
- BCF: Bioconcentration factor
- BEI : Biological Exposure Indices
- CAS: Chemical Abstract Service (division of the American Chemical Society)
- CLP: Classification, Labelling and Packaging
- CMR: Carcinogens, Mutagens, Toxic for re production substances
- DNEL: Derived No Effect Level
- EINECS: European Inventory of Existing Commercial Chemical Substances



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- EPA: US Environmental Protection Agency
- FAC : Free Available Chlorine
- GHS: Globally Harmonized System of Classification and Labelling of Chemicals
- IARC: International Agency for Research on Cancer
- IATA: Air Transport Association
- IMDG: International Maritime Dangerous Goods
- IUPAC: International Union of Pure and Applied Chemistry
- LOEL: Lowest Observed Effect Level
- NOAEL: No Observed Adverse Effect Level
- NOAL: No Observed Adverse Level
- NTP: National Toxicology Program
- OEL: Occupational Exposure Limit
- OSHA: Occupational Safety and Health Administration
- PBT: Persistent, Bioaccumulable and Toxic
- PNEC: Predicted No Effect Concentration
- RID: Règlement concernant le transport International ferroviaire des marchandises Dangereuses
- STEL : Short Term Exposure Limit
- TLV-TWA: Threshold Limit Value-Threshold Weighted Average
- vPvB: very Persistent and very Bioaccumulable

Information concerning health, safety and environment, in accordance with Regulation (EC) No. 1272/2008:

List of hazards statements:

H314 Causes severe skin burns and eye damage.

Precautionary statements:

P102 – Keep out of reach of children

P260 - Do not breathe dust/fume/gas/mist/vapours/spray.

P280 - Wear protective gloves, protective clothing, eye protection and face protection, respiratory protection

P301 + P330 + P331 - IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.

P303 + P361 + P353 – IF ON SKIN (or hair): Wash skin with water/ shower. Wash contaminated clothing before reuse

P405 - Store away from food, drink and animal feed.

Information on workers training

Comply with the provisions of Directive 98/24/EC

Restriction of use (for ingredients): None

Mixture which contains a substance under authorization: No

References and technical contact: +353 (0)

Fax. + 353 (0) info@Atlanticgold.ie



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Disclaimer:

Operating under the supervision of personnel trained in handling chemicals. The product should not be used for purposes other than those mentioned in section 1, unless they are given adequate written information received on how to handle the material. The provider of this document cannot provide any warnings related to the dangers of using, interaction with other materials or chemicals or user's safe use of the product, the suitability of the product for which is applied or its proper disposal. The information should not be considered a declaration or guarantee, either expressed or implied, of merchantability, fitness for a particular purpose, quality, or any other. The information contained in this SDS are in accordance with Annex II of Regulation (CE) N. 1907/2006 , (CE) N. 1272/2008) and subsequent modifications and supplements.