1.0 Identification

Product Identifier	PEAK BOOST Liquid Fertiliser
Other Means of Identification	Peak Boost
Recommended Use and Restrictions on use	Dilute and apply as directed on the label
Details of Importer	APTUS PLANT TECH Australia Unit 1/11 Didswith St, East Brisbane QLD 4169
Emergency Phone Number	Australian Poisons Information (24 hours / 7 days) 13 11 26

2.0 GHS Hazard identification

Classification of The Hazardous Chemical	HAZARDOUS - Category 1B (POISON)
Signal Word	**WARNING**
Hazard Statement	Causes severe skin burns and eye damage Harmful if inhaled
Precautionary Statements	**Do not breathe dusts or mists. Use only outdoors or in a well-ventilated area** **Wash hands and any exposed skin thoroughly after handling.** **Wear protective gloves/protective clothing/eye protection/face protection.**
GHS Pictograms	

3.0 Ingredients / Composition %w/w

Ingredient Name/Nature	<2	2>10	>10	>20	>30	>40	>50	>60	>70	>80	>90	>100
Proprietary Ingredients determined to be hazardous at that concentration												
Phosphoric acid CAS 7664-38-2												

4.0 First Aid Measures

First Aid Instructions	**D**anger? **R**esponse? Yes → Make comfortable, monitor → No **S**end for Help. **A**irway? **B**reathing? No → **C**PR (30 compress: 2 breathes). **D**efibrillation. → Yes (Recovery Position & Monitor)
Swallowed	**IF SWALLOWED: Rinse mouth** and spit**. Do NOT induce vomiting.** If conscious give a glass of water. **Immediately call a POISON CENTER** (e.g. phone Australia 13 11 26; or a doctor)
Eye	**IF IN EYES: Rinse cautiously with** running **water for several minutes.** - **Remove contact lenses, if present and easy to do.** - **Continue rinsing.** - **Immediately call a POISON CENTER** (e.g. phone Australia 13 11 26; or a doctor)
Skin	**IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.** Seek medical advice as merited.
Inhaled	**IF INHALED: Remove person to fresh air and keep comfortable for breathing.** **Call a POISON CENTER** 13 11 26 **if you feel unwell.**
Symptoms caused by exposure	Local effects can be anticipated due to corrosive nature.
Medical Attention / Special Treatment	Neutralise the acid solution using dilution, see section 11 for additional data.

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5.0 Fire Fighting Measures

Extinguishing media	Use extinguishing media most appropriate for the surrounding fire. No limitations to the type of extinguishing media. Small fire: Use dry chemical, CO2 or water spray. Large fire: Use water spray, fog or foam - Do NOT use water jets.
Specific Hazards arising from the chemical	Phosphoric acid forms toxic phosphorous oxide fumes on combustion.
Special protective equipment and precautions for fire fighters HAZCHEM	HAZCHEM 2R Wear SCBA and chemical splash suit. Fully encapsulating, gas-tight suits should be worn for maximum protection. Structural firefighter's uniform is NOT effective for these materials. Material does not burn. Fire or heat will produce irritating, poisonous and/or corrosive gases. Containers may explode when heated.

6.0 Accidental Release Measures

Personal precautions, protective equipment and emergency procedures	Avoid inhalation and ingestion. Avoid contact with skin, eyes and clothing. Evacuate the area of all non-essential personnel. Wear protective gloves/protective clothing/eye protection/face protection. Wash hands thoroughly after handling. In event of emergency or planned entry into unknown concentrations a positive pressure, full-face piece SCBA should be used.
Environmental precautions	Concentrate as supplied should not enter to waterways, may clause localised effects.
Methods and materials for containment and cleaning up	Absorb or contain liquid with sand, earth or spill control material. Shovel up using non sparking tools and place in a labelled, sealable container for subsequent safe disposal. Put leaking containers in a labelled drum or over-drum. Rinse residue with large volumes of water.

7.0 Storage and Handling

Precautions for Safe Handling	Use with adequate ventilation. In case of insufficient ventilation, wear suitable respiratory equipment. . Always wash hands before smoking, eating or using the toilet. Wash contaminated clothing and other protective equipment before storing or re-using.
Safe Storage Practice	Store in well ventilated area. Store away from foodstuffs. Keep containers securely sealed and protected against physical damage. Store away from sources of heat or ignition. Keep dry and protect from direct sunlight. Protect from freezing. So not store with alkalies, flammables, oxidising agents.
- Avoid	Avoid prolonged or repeated contact with skin, eyes and clothing
- Control	Contact with metals, Extremely corrosive in presence of copper, brass and stainless steel. Highly corrosive in presence of aluminium. Mild corrosive effect on bronze. Corrosive to ferrous metals and alloys. Non-corrosive in presence of glass.
- Maintain	Keep locked up KEEP OUT OF REACH OF CHILDREN
- Other	Wash PPE and surfaces exposed to the contrite with large volumes of running water after use. Protective clothing should be worn, preferably with and apron. (See AS 3765 Clothing for Protection Against Hazardous Chemicals

8.0 Exposure Controls / Personal Protection

National Exposure Standards	Phosphoric acid STEL 3 mg/mL^3 TWA 1 mg/m^3				
Control Banding	Band Zero – Household or Consumer Use	Band 1 – Industrial hygiene practice	Band 2 – use local exhaust ventilation	Band 3 – enclose the process	Other
Engineering Controls	Provide sufficient ventilation to ensure that the working environment is below the TWA (time weighted average). In industrial situations maintain the concentrations values below the TWA. This may be achieved by process modification, use of local exhaust ventilation, capturing substances at the source, or other methods.				
PPE	Where ventilation is not adequate, **respiratory protection may be required**. Respiratory protection should comply with AS 1716 - Respiratory Protective Devices and be selected in accordance with AS 1715 - Selection, Use and Maintenance of Respiratory Protective Devices. Filter capacity and respirator type depends on exposure levels. If respiratory protection is required, institute a complete respiratory protection program including selection, fit testing, training, maintenance and inspection. The use of a **face shield, chemical goggles or safety glasses with side shield protection as appropriate**. Must comply with Australian Standards AS 1337 and be selected and used in accordance with AS 1336. Avoid skin contact when removing gloves from hands, do not touch the gloves outer surface. Dispose of gloves as hazardous waste. Hand protection should comply with AS 2161, Occupational protective gloves - Selection, use and maintenance. Recommendation: **rubber or plastic gloves**. Final choice of personal protective equipment will depend on individual circumstances and/or according to risk assessments undertaken. **Safety boots** in industrial situations is advisory.				

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9.0 Physical & Chemical Properties

Appearance	Brown coloured solution	**Partition Co-efficient n-Octonol/water**	Not determined
Odour	acidic (corrosive) do NOT inhale	**Solubility**	Water soluble
pH	3.0 to 4.0	**Vapour Pressure**	Not determined
Melting / Freezing Pt	~ 0ºC	**Vapour Density**	Not determined
Boiling Point	~ 100ºC	**Relative Density**	~1.1 to 1.2 g/mL
Flash Point	Not determined	**Auto-ignition Temp**	Not determined
Evaporation Rate	Not determined	**Decomposition Temp**	Not determined
Flammability	Not classified as flammable	**Viscosity**	Not determined
Explosive Limits	Not classified as explosive	**Other**	Not determined

10.0 Stability & Reactivity

Reactivity	Acetulides, alcohols, aldehydes, amides, amines, ammonia or bleach, azo-compounds, carbides, carbamates, caustics, hlorides, combustible materials, cyanides, esters, epoxides, fluorides, glycols, halogenated organics, ketones, mercaptins, nitromethane, organic peroxides, organophosphates, phenols and cresols, phosphides, silicides, sodium tetrahydroborate, strong caustics, sulfides and unsaturated halides. Extremely corrosive in presence of copper, brass and stainless steel. Highly corrosive in presence of aluminium. Mild corrosive effect on bronze. Corrosive to ferrous metals and alloys.
Chemical Stability	Stable under normal use conditions.
Possibility of Hazardous Reactions	Phosphoric acid decomposes under formation of toxic fumes on contact with incompatible substances.
Conditions to avoid	Heat, freezing, reactive substa nces
In compatible materials	Phosphoric acid decomposes under formation of toxic fumes on contact with alcohols, cyanides, ketones, phenols, esters, sulfides, mercaptans and halogenated organic compounds. Liberates explosive hydrogen gas when reacting with chlorides and stainless steel. Exothermic reactions with aldehydes, amines, amides, alcohols and glycols, azo- compounds, carbamates, esters, caustics, phenols and cresols, organophosphates, epoxides, explosives, combustible materials, unsaturated halids, sodium tetrahydroborate, organic peroxides. Extremely corrosive in presence of copper, brass and stainless steel. Highly corrosive in presence of aluminium. Mild corrosive effect on bronze. Corrosive to ferrous metals and alloys.
Hazardous Decomposition Products	Phosphoric acid decomposes under formation of toxic fumes on contact with incompatible substances.

11.1 Known Toxicological Information Phosphoric acid contained at ~20% CAS 7664-38-2

Ingredient Name / Type	**Data**
Acute Toxicity	LD_{50} ~ 2000mg/kg (rats)
Skin Corrosion / Irritation	Harmful if absorbed through skin. Corrosive. Concentrated acid solutions can cause redness, pain, itching, scaling, occasional blistering, and severe skin burns.
Serious Eye Damage Irritation	Harmful if contact the eyes. Mists may cause eye irritation. Symptoms include of redness, pain, tearing, eyelid spasms, blurred vision, chemical conjunctivitis, burns and permanent eye damage. **risk of blindness**
Respiratory or skin sensitisation	Harmful if inhaled. Vapour or mist can cause irritation of the nose, throat, and upper respiratory tract. Severe exposures can lead to a chemical pneumonitis.
Germ cell mutagenicity	No evidence of mutagenic effects.
Carcinogenicity	No evidence of carcinogenic properties.
Reproductive toxicity	No data
Specific Target Organ Toxicity – single exposure - repeated exposure	Dermatitis may occur from prolonged or repeated skin contact. Prolonged or over exposure to phosphoric acid can increase fluid levels in the lungs (pulmonary oedema). May cause clammy skin and dermatitis, weak and rapid pulse, shallow respiration, very little urine, bronchitis, shortness of breath. Severe exposure to phosphoric acid can lead to shock, circulatory collapse and death.
Aspiration hazard.	Harmful if inhaled. Vapour or mist can cause irritation of the nose, throat, and upper respiratory tract. Severe exposures can lead to a chemical pneumonitis.

Continued over……

Skin - Acute	The chemical has moderate to low acute dermal toxicity depending on the concentration.
Inhaled - Acute	Harmful by inhalation.
Swallowed - Acute	Harmful if swallowed and absorbed through membranes. Burns to the mouth, throat and stomach. Symptoms include sour acrid taste, coughing, difficult breathing and swallowing, conjunctivitis, severe gastrointestinal irritation, nausea, vomiting, bloody diarrhoea, severe abdominal pains, extreme thirst, convulsions.
Eye - Acute	Harmful if contact the eyes. Mists may cause eye irritation. Symptoms include of redness, pain, tearing, eyelid spasms, blurred vision, chemical conjunctivitis, burns and permanent eye damage. risk of blindness!
Early Onset Symptoms	Corrosive effects
Delayed Health Effects from exposure	As anticipated from corrosive effects
Exposure Level & Health Effects	An acute inhalation toxicity study was carried out in male rabbits, rats, mice and guinea pigs, exposed for one hour to smoke, generated from pure unformulated red phosphorus ignited in an air stream, which produces phosphorus pentoxide (the anhydride of phosphoric acid). The target concentrations of smoke ranged from 111 to 6731 mg/m^3 as phosphoric acid. Expressed as phosphoric acid, the inhalation median lethal concentration (LC50) values were 5337 mg/m^3 (rabbit), 3846 mg/m^3 (rat), 856 mg/m^3 (mouse) and 193 mg/m^3 (guinea pig).
Interactive effects	no data
Other	Phosphoric acid can be absorbed by ingestion, inhalation and dermal contact. Absorbed phosphate is widely distributed in the body. Phosphate is present in plasma and extracellular fluid, in cell membranes and intracellular fluid, and in collagen and bone tissue. More than 90 % of plasma phosphate is filterable, of which 80 % is actively reabsorbed. Phosphate excreted in the urine represents the difference between the amount filtered and that reabsorbed

12.0 Ecological Information

Ecotoxicity (as supplied)	Quantitative data on the ecological effect of this product are not available.
Persistence & Biodegradability	Likely to be biodegradable
Bioaccumulative Potential	Phosphate (formed when phosphoric acid is dissolved) is unlikely to bio-accumulate in most aquatic species.
Mobility in soil	no data
Other effects	Excessive amounts of phosphoric acid can affect the pH shift leading to a potential risk to aquatic organisms.

13.0 Disposal Considerations

Disposal Containers & Methods	Whatever cannot be saved for recovery or recycling should be disposed of according to relevant local, state and federal government regulations. FULLY DRAIN then carefully rinse container; dispose as permitted by local jurisdiction.
Physical/chemical properties that may affect disposal options.	None identified
Effects of sewage disposal.	Diluted solutions are unlike to contribute to issues of concern
Special precautions for incineration or land fill.	Diluted solutions are unlike to contribute to issues of concern

14.0 Transport Information

UN Number	**Proper Shipping Name / Technical Name**	**Transport Hazard Class**	**Packaging Group**
N/A	N/A	N/A	**N/A**
Environmental Hazards for Transport Purposes		**Special Precautions for user**	
None		None	

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15.0 Regulatory Information

Montreal Protocol	Stockholm Convention	Rotterdam Convention	Basel Convention	MARPOL
Not applicable	Not included	Not Included	Not Included	Not Included
SUSMP	S6 POISON			
Prohibitions / Licensing Restrictions	KEEP OUT OF REACH OF CHILDREN READ SAFETY DIRECTIONS BEFORE OPENING OR USING DO NOT SWALLOW			
APVMA	Excluded by purpose			
NICNAS	All ingredients are included in AICS			

16.0 Other Information

16.1 Consumer & General Usage Information

Directions for use	Dilute and apply as directed on the label.
Directions for Removal	Rinse under running water.
Nano Materials	None identified
Animal Derived Ingredients	None identified

16.2 SDS Preparation

Date Prepared	20th June 2018.
Changes Made	4th December 2019 revision 1.2 for Australia
Reference Standards	Preparation of Safety Data Sheets for Hazardous Chemicals Code of Practice February 2016. ISBN 978-0-642-33311-7. GLOBALLY HARMONIZED SYSTEM OF CLASSIFICATION AND LABELLING OF CHEMICALS (GHS) Fourth revised edition
Resources Relied upon include	Hazardous Substances Data Bank (HSDB) https://toxnet.nlm.nih.gov/cgi-bin/sis/htmlgen?HSDB Suppliers' SDS; RTECS Toxicity Database; IRAC; CDC NIOSH, HSIS, Safework Australia GHS Hazardous Chemical Information List. Information provided by manufacturer(s).

Disclaimer: This SDS provides safety data only for the product and circumstances of use nominated. The SDS summarises our best knowledge of the specific, well-known and equivocally demonstrated health and safety hazard information pertaining to workplace use of the nominated substance(s) however the author expressly disclaims that the SDS is complete, is a representation or is a guarantee. Published and other resources have been relied upon, and in some cases conflicting information has been identified. Each user should read the SDS and consider the information in the context of their specific conditions and circumstances, and in conjunction with other products. If clarification is required or further information sought in order to make a risk assessment the user should contact the nominated sponsor company. The responsibility for products sold is subject to our standard terms and conditions that are available on request.

16.3 Key abbreviations or acronyms used

%	Percent (parts per hundred)
***C or ºC**	degrees Celsius
<	less than
>	greater than
ACCC	Australian Competition and Consumer Commission
ADG	Australian Dangerous Goods
AICS	Australian Inventory of Chemical Substances
APVMA	Australian Pesticides and Veterinary Medicines Authority
AS	Australian Standard
ASCC	Australian Society of Cosmetic Chemists
bw	Body weight (nominally a human adult of 60kg is applied)
BOD	Biochemical Oxygen Demand
CAS	Chemical Abstracts Service (Registry Number)
cc	cubic centimetres (equivalent to mL)
COD	Chemical Oxygen Demand
CMR	CMR substances: Article 15 of the EU Cosmetics Regulation 1223/2009 contains provisions on the use of CMR in cosmetic products. Typically substances classified as CMR substances Cat 1A, 1B, or 2 under Part 3 of Annex IV Regulation (EC) No 1272/2008 are banned for use in cosmetic products
COSING	The European Commission database with information on Cosmetic Ingredients & Substances Dangerous Goods
EINECS	European Inventory of Existing Commercial Chemical Substances (Identifying Number)
dw	Dry weight
DNEL	Derived No effect level

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EU	Europe / European
FSANZ	Food Standards Australia New Zealand
g	gram
GHS	Globally Harmonised System (safety symbols and labelling)
GMO	Genetically modified organism
h or hr	Hour
HAZCHEM	Emergency action code of numbers and letters that provide information to emergency services especially fire fighters
HSIS	The Safe Work Australia Hazardous Substances Information System
IATA	The International Air Transport Association
IMAP	NICNAS Inventory Multi-tiered Assessment and Prioritisation
ICAO	The International Civil Aviation Organization
IFA	The International Fragrance Association
INCI	The International Nomenclature of Cosmetic Ingredients
kg	kilogram
L	Litre
LC_{50}	LC_{50} is the average concentration of a material (by a defined route) that causes the death of 50% (one half) of a group of (defined) test animals. Normally quoted in mg/kg body weight.
LD_{50}	LD_{50} is the average dose of a material, given all at once, which causes the death of 50% of a group of (defined) test animals. Normally quoted in mg/kg body weight. Products with a LD_{50} of less than 5000mg/kg are scheduled poisons in Australia (see SUSMP)
LD_{Lo}	Lethal Dose Low, is the minimum amount of a material shown to be lethal to a specified type of animal. Typically quoted in mg/kg body weight.
m or min	minute
m^3	cubic metre
Max or max	maximum
mg	milligram
Min or min	minimum
mL	millilitre
mm	millimetre
mm Hg	millimetre of Mercury
MOS	Margin of Safety
MRL	Maximum Residue Limit
MSDS	Material Safety Data Sheet (see also SDS)
Nano	Nano(sized) material / Nano Technology; …industrial materials (including a cosmetic ingredient) comprising 10% or more by composition that has been intentionally produced, manufactured or engineered to have either an internal or external property that is a size range typically between 1 nm and 100 nm.
ng	nanogram
NICNAS	The National Industrial Chemicals Notification and Assessment Scheme (AUSTRALIA)
NIOSH	The National Institute for Occupational Safety and Health (USA)
NOAEL	No observed Adverse Effects Limit
NOHSC	National Occupational Health and Safety Commission (AUSTRALIA)
NOS	Not otherwise specified
NZS	New Zealand Standard
OECD	Organization for Economic Co-operation and Development (Test Method number)
OSHA	The Occupational Safety and Health Administration (USA)
Perm.	Permethrin (Active ingredient of this formulation)
PEL	Permissible Exposure Limit
pH	(pH) A measure of acidic (less than 7) or alkalinity (above 7); extreme values represent extreme acidic or alkaline conditions. Typically products with a pH less than three or greater than 11 are scheduled poisons (SUSMP)
PNEC	Predicted no effect concentration
ppb	parts per billion
PPE	Personal Protective Equipment
ppm	parts per million
RTECS	The Registry of Toxic Effects of Chemical Substances
S2	Schedule 2, SUSMP **Pharmacy Medicine** – Substances, the safe use of which may require advice from a pharmacist and which should be available from a pharmacy or, where a pharmacy service is not available, from a licensed person.
S3	Schedule 3, SUSMP **Pharmacist Only Medicine** – Substances, the safe use of which requires professional advice but which should be available to the public from a pharmacist without a prescription.

S4	Schedule 4, SUSMP **Prescription Only Medicine**, or **Prescription Animal Remedy** – Substances, the use or supply of which should be by or on the order of persons permitted by State or Territory legislation to prescribe and should be available from a pharmacist on prescription.
S5	Schedule 5, SUSMP **Caution** – Substances with a low potential for causing harm, the extent of which can be reduced through the use of appropriate packaging with simple warnings and safety directions on the label.
S6	Schedule 6, SUSMP **Poison** – Substances with a moderate potential for causing harm, the extent of which can be reduced through the use of distinctive packaging with strong warnings and safety directions on the label.
S7	Schedule 7, SUSMP **Dangerous Poison** – Substances with a high potential for causing harm at low exposure and which require special precautions during manufacture, handling or use. These poisons should be available only to specialised or authorised users who have the skills necessary to handle them safely. Special regulations restricting their availability, possession, storage or use may apply.
S8	Schedule 8, SUSMP **Controlled Drug** – Substances which should be available for use but require restriction of manufacture, supply, distribution, possession and use to reduce abuse, misuse and physical or psychological dependence.
S9	Schedule 9, SUSMP **Prohibited Substance** – Substances which may be abused or misused, the manufacture, possession, sale or use of which should be prohibited by law except when required for medical or scientific research, or for analytical, teaching or training purposes with approval of Commonwealth and/or State or Territory Health Authorities.
S10	Schedule 10, SUSMP **Substances of such danger to health as to warrant prohibition of sale, supply and use** - Substances which are prohibited for the purpose or purposes listed for each poison.
SCCP	Scientific Committee on Cosmetic Products and Non-Food Products (EUROPE)
SDS	Safety Data Sheet, (previously called MSDS) now SDS under GHS
STEL	Short Term Exposure Limit
SUSMP	Standard for the Uniform Scheduling of Medicine & Poisons (AUSTRALIA) also Poisons Standard. Poisons are not scheduled on the basis of a universal scale of toxicity. Although toxicity is one of the factors considered, and is itself a complex of factors, the decision to include a substance in a particular Schedule also takes into account many other criteria such as the purpose of use, potential for abuse, safety in use and the need for the substance.
T1 or TI	NICNAS IMPA Framework Low risk; chemicals that are not expected to pose a concern to workers, public health or the environment
T2 or TII	NICNAS IMPA Framework Assessable risk; products not classified as T1 risk information on a substance-by-substance or chemical category-by-category
TGA	Therapeutic Goods Administration (AUSTRALIA)
TLV	Threshold Limit Value
TWA	Time Weighted Average
ug	microgram
uL	microlitre
UN	United Nations (number)
US or USA	The United States of America

End of SDS