

ДОДАТОК IV

СУРОВИНИ И ПОМОШНИ МАТЕРИИЈАЛИ, ДРУГИ СУПСТАНЦИИ И ЕНЕРГИИ УПОТРЕБЕНИ ИЛИ ПРОИЗВЕДЕНИ ВО ИНСТАЛАЦИЈАТА

НЕДЦАНН Северна Македонија
Дооел Охрид

ДОДАТОК IV

СУРОВИНИ И ПОМОШНИ МАТЕРИЈАЛИ, ДРУГИ СУПСТАНЦИИ И ЕНЕРГИИ УПОТРЕБЕНИ ИЛИ ПРОИЗВЕДЕНИ ВО ИНСТАЛАЦИЈАТА

Содржина

Вовед.....	3
4.1 Главни сировини кои се користат во инсталацијата	3
4.2.Помошни материјали и други супстанции	3
4.2.1.Вештачки ѓубрива	3
4.2.2 Електрична енергија	3
4.2.3 Вода	4
4.2.4. Јаглероден диоксид CO ₂	4
Прилог 4	6
4.3 Планирана потрошувачка на вода	6
4.4 Планирана потрошувачка на електрична енергија	6
4.5 Планирана потрошувачка на вештачки ѓубрива.....	6
4.6 Планирана потрошувачка на CO ₂	6
4. 7 Безбедносни сертификати за ѓубрива.....	7
4.7.1 Етанол	7
4.7.2 Fertigro FZ-59	17
4.7.3	18
4.7.4 YaraTera CALCINIT	35

Вовед

Согласно востановените производни процеси во инсталацијата Недцанн ДООЕЛ Охрид, основната дејност е indoor култивација на медицински канабис.

Производството на медицински канабис во инсталацијата Недцанн ДООЕЛ Охрид се одвива по највисоки стандарди. Производството на сув цвет и екстракти е планирано да се одвива под стандардизирани услови.

Производниот процес во инсталацијата Недцанн ДООЕЛ Охрид се одвива во следните локации

- Објект на обезбедување
- Надворешен магацин
- Центар за истражување и развој
- Фаза 1 производство
- Фаза 1 Административен дел

4.1 Главни сировини кои се користат во инсталацијата

Основна и најзначајна сировина во процесот на производство на сув цвет од канабис претставува квалитетниот семенски материјал кој се обезбедува од реномирани светски производители на ваков семенски материјал.

4.2. Помошни материјали и други супстанции

4.2.1. Вештачки ѓубрива

Во процесот на одгледувањето на растенијата важна улога има и нивното соодветно прихранување и поттикнување на развој па од тие причини употребата на соодветни вештачки ѓубрива и стимулатори исто така представува важен дел од начинот на одгледувањето на растенијата.

Во инсталацијата НЕДЦАНН ДООЕЛ Охрид се употребуваат следниве вештачки ѓубрива и препарати, а кои се одобрени за употреба од соодветни ЕУ регулаторни тела.

- Yara Tera kristalon bzown,
- Yara tera calcinit,
- Fertigro FZ-59,
- Fertigro-SZ-38.

4.2.2 Електрична енергија

Снабдувањето со електрична енергија се врши преку електроенергетската мрежа на која е поврзана инсталацијата НЕДЦАНН ДООЕЛ Охрид.

Меѓутоа заради обезбедување на електро енергетска независност за непречено функционирање на производните процеси во инсталацијата НЕДЦАНН ДООЕЛ Охрид поставени се и 4 дизел генератори со кои се овозможува непречено одвивање на процесите во случаи на испаѓање на електро енергетскиот систем.

4.2.3 Вода

Во Недцанн ДООЕЛ Охрид се користи вода од водоводен систем, која редовно се испитува од страна на Институт за Јавно Здравје (ИЈЗ), Охрид кој е акредитиран од Институтот за акредитација на РСМ за хемиско и микробиолошко испитување на водата. Според анализираните параметри, примерокот на вода од чешма е во согласност со постојните законски регулативи за вода за пиење.

Во постапка е процедурата за добивање на Дозвола за користење на бунарска вода за 6 вертикални бунари за снабдување со вода за процесот на одгледување и култивација на растенијата.

4.2.4. Јаглероден диоксид CO₂

Инсталацијата се снабдува со гас, јаглероден диоксид, две единици - батерии од боци со систем од 12 стандардни цилиндрични садови со течен CO₂ под притисок. Во цилиндричните садови CO₂ е во течна состојба и притисокот е ссa 60 (bar), зависно од температурата на амбиенталниот воздух. Од системот со садови гасот се води со флексибилно црево до редуccionата станица на притисок која се состои од два едностепени редуцири на притисокот комплет со сета неопходна регулациона, филтерска, сигурносна и запорна арматура.

Во редуccionата станица притисокот на гасот се намалува на p=4,0 (bar), за да не се пречекори дозволените работен притисок на цевоводот за снабдување на објектот со јаглероден диоксид предвиден е еден сигурносен вентил кој треба да отвара на притисок од p=6,0 (bar). Предвидени се и места за поврзување на инсталацијата на централен систем со резервоар со капацитет од 10 до 20 (t) за снабдување на целиот објект со јаглероден диоксид.

Регулацијата на концентрацијата на јаглерод диоксидот на потребното ниво е предвидено да се врши со помош на постоечките регулатори Maxi Controller кои имаат сензор за CO₂. а штом се постигне зададената концентрација го исклучува напонот на приклучницата. Затоа како извршен орган на регулацијата предвидени се по еден магнетен вентил од INOX со Ф1/2" за секоја просторија посебно. Концентрацијата на CO₂ во (ppm) се отчитува на екранот на контролерот кој се наоѓа кај влезната врата за соодветната просторија. За секоја просторија е предвидено да се монтира запорен вентил од INOX со Ф1/2" и плочка од PTFE (тефлон), со калибриран отвор за регулација на протокот на јаглероден диоксид за соодветната просторија. Доводот на јаглероден диоксид за секоја просторија се води до средината на всисниот отвор за

воздух на климатизерот од каде, со помош на вентилаторот и текстилните канали, се распределува рамномерно низ собата за одгледување канабис.

Предвидено е медицинскиот канабис да се постави во соби за одгледување каде сите параметри како светлина, температура, влага и д р, се држат под контрола, а покрај другите фактори и концентрацијата на јаглероден диоксид е фактор со големо влијание на зголемувањето на приносот на канабис.

Концентрацијата на CO₂ во атмосферскиот воздух е 410 до 430 (ppm), глобално, - Концентрацијата на CO₂ во собите за одгледување се намалува при растењето на растенијата, -Ако концентрацијата на CO₂ падне под 200 (ppm), престанува растењето на растенијата, -Концентрацијата помеѓу 800 и 1200 (ppm) може да го зголемат приносот за 10 до 25 %, -Концентрацијата поголема од 1500 (ppm) не е економична, - Потрошувачката на CO₂ зависи од стадиумот на растење на растенијата и таа варира помеѓу 0,0011489 и 0,0022977 (kg/hm²). За димензионирање на цевоводот за снабдување на растенијата со соодветно количество на потрошувачка на CO₂ земени се повисоките вредности при пресметките. Исто така и вкупната хоризонтална површина на просториите е земена во обзир при пресметките.

Прилог 4

4.3 Планирана потрошувачка на вода

ПЛАНИРАНА ПОТРОШУВАЧКА НА ВОДА м³	
месечно	годишно
400	4 800

4.4 Планирана потрошувачка на електрична енергија

ПЛАНИРАНА ПОТРОШУВАЧКА НА ЕЛЕКТРИЧНА ЕНЕРГИЈА kwh	
месечно	годишно
145 000	1 740 000

4.5 Планирана потрошувачка на вештачки ѓубрива


ПЛАНИРАНА ПОТРОШУВАЧКА НА ВЕШТАЧКИ ЃУБРИВА кг	
месечно	годишно
100	1 200


4.6 Планирана потрошувачка на ЦО2

ПЛАНИРАНА ПОТРОШУВАЧКА НА СО2 литри	
месечно	годишно
30 000	360 000

4. 7 Безбедносни сертификати за ђубрива

4.7.1 Етанол




SAFETY DATA SHEET

Creation Date 09-Jul-2009Revision Date 07-Jan-2022Revision Number 7

1. Identification

Product Name	Ethanol, Anhydrous (Histological)
Cat No. :	A405-20; A405F-1GAL; A405P-4
Synonyms	Grain alcohol, denatured; Ethyl alcohol, denatured; Ethyl hydroxide, denatured.
Recommended Use	Laboratory chemicals.
Uses advised against	Food, drug, pesticide or biocidal product use.

Details of the supplier of the safety data sheet

Company
Fisher Scientific Company
One Reagent Lane
Fair Lawn, NJ 07410
Tel: (201) 796-7100

Emergency Telephone Number CHEMTREC®, Inside the USA: 800-424-9300
CHEMTREC®, Outside the USA: 001-703-527-3887

2. Hazard(s) Identification

Classification
This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

Flammable liquids	Category 2
Serious Eye Damage/Eye Irritation	Category 2
Carcinogenicity	Category 2
Reproductive Toxicity	Category 2
Specific target organ toxicity (single exposure)	Category 2 Category 3
Target Organs - Central nervous system (CNS), Optic nerve, Respiratory system.	

Label Elements

Signal Word
Danger

Hazard Statements
Highly flammable liquid and vapor
Causes serious eye irritation
Suspected of causing cancer
Suspected of damaging fertility or the unborn child

Page 1 / 10

May cause damage to organs
May cause drowsiness or dizziness

**Precautionary Statements****Prevention**

Obtain special instructions before use
Do not handle until all safety precautions have been read and understood
Use personal protective equipment as required
Wash face, hands and any exposed skin thoroughly after handling
Wear eye/face protection
Do not breathe dust/fume/gas/mist/vapors/spray
Do not eat, drink or smoke when using this product
Keep away from heat/sparks/open flames/hot surfaces. - No smoking
Keep container tightly closed
Ground/bond container and receiving equipment
Use explosion-proof electrical/ventilating/lighting equipment
Use only non-sparking tools
Take precautionary measures against static discharge

Response

IF exposed or concerned: Get medical attention/advice

Skin

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

Eyes

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing

If eye irritation persists: Get medical advice/attention

Fire

In case of fire: Use CO₂, dry chemical, or foam for extinction

Storage

Store locked up

Store in a well-ventilated place. Keep cool

Disposal

Dispose of contents/container to an approved waste disposal plant

Hazards not otherwise classified (HNOC)

Repeated exposure may cause skin dryness or cracking

Other hazards

Poison, may be fatal or cause blindness if swallowed. Vapor harmful. CANNOT BE MADE NON-POISONOUS.

WARNING: Cancer and Reproductive Harm - <https://www.p65warnings.ca.gov/>.

3. Composition/Information on Ingredients

Component	CAS No	Weight %
Ethyl alcohol	64-17-5	90-95
Methyl alcohol	67-56-1	3-5
Methylisobutyl ketone	108-10-1	1-3
Ethyl acetate	141-78-6	1-2
Solvent naphtha (petroleum), light aliphatic	64742-89-8	1

4. First-aid measures

General Advice	If symptoms persist, call a physician.
Eye Contact	Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Get medical attention.
Skin Contact	Wash off immediately with plenty of water for at least 15 minutes. If skin irritation persists, call a physician.
Inhalation	Remove to fresh air. If not breathing, give artificial respiration. Get medical attention if symptoms occur.
Ingestion	Clean mouth with water and drink afterwards plenty of water.
Most important symptoms and effects	None reasonably foreseeable. Inhalation of high vapor concentrations may cause symptoms like headache, dizziness, tiredness, nausea and vomiting
Notes to Physician	Treat symptomatically

5. Fire-fighting measures

Suitable Extinguishing Media	Water spray, carbon dioxide (CO ₂), dry chemical, alcohol-resistant foam. Water mist may be used to cool closed containers.
Unsuitable Extinguishing Media	Water may be ineffective. Do not use a solid water stream as it may scatter and spread fire
Flash Point	13.9 °C / 57 °F
Method -	Estimated
Autoignition Temperature	362.8 °C / 685 °F
Explosion Limits	
Upper	18.0 vol %
Lower	3.3 vol %
Sensitivity to Mechanical Impact	No information available
Sensitivity to Static Discharge	No information available

Specific Hazards Arising from the Chemical

Flammable. Vapors may form explosive mixtures with air. Vapors may travel to source of ignition and flash back. Containers may explode when heated. Vapors may form explosive mixtures with air.

Hazardous Combustion Products

Carbon monoxide (CO). Carbon dioxide (CO₂).

Protective Equipment and Precautions for Firefighters

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

NFPA

Health	Flammability	Instability	Physical hazards
3	3	0	N/A

6. Accidental release measures

Personal Precautions	Use personal protective equipment as required. Ensure adequate ventilation.
Environmental Precautions	Should not be released into the environment.

Methods for Containment and Clean Up Soak up with inert absorbent material. Keep in suitable, closed containers for disposal.

7. Handling and storage

Handling	Wear personal protective equipment/face protection. Ensure adequate ventilation. Do not get in eyes, on skin, or on clothing. Avoid ingestion and inhalation.
Storage.	Keep containers tightly closed in a dry, cool and well-ventilated place. Keep away from heat, sparks and flame. Incompatible Materials. Strong oxidizing agents. Acids. Acid anhydrides. Acid chlorides. Peroxides. Alkali metals.

8. Exposure controls / personal protection

Exposure Guidelines

Component	ACGIH TLV	OSHA PEL	NIOSH IDLH	Mexico OEL (TWA)
Ethyl alcohol	STEL: 1000 ppm	(Vacated) TWA: 1000 ppm (Vacated) TWA: 1900 mg/m ³ TWA: 1000 ppm TWA: 1900 mg/m ³	IDLH: 3300 ppm TWA: 1000 ppm TWA: 1900 mg/m ³	STEL: 1000 ppm
Methyl alcohol	TWA: 200 ppm STEL: 250 ppm Skin	(Vacated) TWA: 200 ppm (Vacated) TWA: 260 mg/m ³ (Vacated) STEL: 250 ppm (Vacated) STEL: 325 mg/m ³ Skin TWA: 200 ppm TWA: 260 mg/m ³	IDLH: 6000 ppm TWA: 200 ppm TWA: 260 mg/m ³ STEL: 250 ppm STEL: 325 mg/m ³	TWA: 200 ppm STEL: 250 ppm
Methylisobutyl ketone	TWA: 20 ppm STEL: 75 ppm	(Vacated) TWA: 50 ppm (Vacated) TWA: 205 mg/m ³ (Vacated) STEL: 75 ppm (Vacated) STEL: 300 mg/m ³ TWA: 100 ppm TWA: 410 mg/m ³	IDLH: 500 ppm TWA: 50 ppm TWA: 205 mg/m ³ STEL: 75 ppm STEL: 300 mg/m ³	TWA: 20 ppm STEL: 75 ppm
Ethyl acetate	TWA: 400 ppm	(Vacated) TWA: 400 ppm (Vacated) TWA: 1400 mg/m ³ TWA: 400 ppm TWA: 1400 mg/m ³	IDLH: 2000 ppm TWA: 400 ppm TWA: 1400 mg/m ³	TWA: 400 ppm

Legend

ACGIH - American Conference of Governmental Industrial Hygienists
 OSHA - Occupational Safety and Health Administration
 NIOSH IDLH: NIOSH - National Institute for Occupational Safety and Health

Engineering Measures	Ensure adequate ventilation, especially in confined areas. Use explosion-proof electrical/ventilating/lighting equipment. Ensure that eyewash stations and safety showers are close to the workstation location.
-----------------------------	--

Personal Protective Equipment

Eye/face Protection	Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166.
Skin and body protection	Wear appropriate protective gloves and clothing to prevent skin exposure.
Respiratory Protection	Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced.
Hygiene Measures	Handle in accordance with good industrial hygiene and safety practice.

9. Physical and chemical properties

Physical State	Liquid
Appearance	Clear

Odor	Alcohol-like
Odor Threshold	No information available
pH	Not applicable
Melting Point/Range	< -90 °C / -130 °F
Boiling Point/Range	77.1 °C / 170.8 °F
Flash Point	13.9 °C / 57 °F
Method -	Estimated
Evaporation Rate	3.6 (Butyl acetate = 1.0)
Flammability (solid,gas)	Not applicable
Flammability or explosive limits	
Upper	18.0 vol %
Lower	3.3 vol %
Vapor Pressure	48 mmHg
Vapor Density	1.5
Specific Gravity	0.785 - 0.792
Solubility	Soluble in water
Partition coefficient; n-octanol/water	No data available
Autoignition Temperature	362.8 °C / 685 °F
Decomposition Temperature	No information available
Viscosity	No information available
VOC Content(%)	100

10. Stability and reactivity

Reactive Hazard	None known, based on information available
Stability	Stable under normal conditions.
Conditions to Avoid	Incompatible products. Excess heat. Keep away from open flames, hot surfaces and sources of ignition.
Incompatible Materials	Strong oxidizing agents, Acids, Acid anhydrides, Acid chlorides, Peroxides, Alkali metals
Hazardous Decomposition Products	Carbon monoxide (CO), Carbon dioxide (CO ₂)
Hazardous Polymerization	Hazardous polymerization does not occur.
Hazardous Reactions	None under normal processing.

11. Toxicological information

Acute Toxicity

Product Information

Oral LD50

Based on ATE data, the classification criteria are not met. ATE > 2000 mg/kg.

Dermal LD50

Based on ATE data, the classification criteria are not met. ATE > 2000 mg/kg.

Vapor LC50

Based on ATE data, the classification criteria are not met. ATE > 20 mg/l.

Component Information

Component	LD50 Oral	LD50 Dermal	LC50 Inhalation
Ethyl alcohol	LD50 = 10470 mg/kg OECD 401 (Rat) 3450 mg/kg (Mouse)	Not listed	LC50 = 117-125 mg/l (4h) OECD 403 (rat) 20000 ppm/10H (rat)
Methyl alcohol	LD50 = 1187 - 2769 mg/kg (Rat)	LD50 = 17100 mg/kg (Rabbit)	LC50 = 128.2 mg/l (Rat) 4 h
Methylisobutyl ketone	LD50 = 2080 mg/kg (Rat)	LD50 = 3000 mg/kg (Rabbit)	LC50 2000 - 4000 ppm (Rat) 4 h
Ethyl acetate	10,200 mg/kg (Rat)	> 20 mL/kg (Rabbit) > 18000 mg/kg (Rabbit)	58 mg/l (rat; 8 h)
Solvent naphtha (petroleum), light aliphatic	Not listed	LD50 = 3000 mg/kg (Rabbit)	Not listed

Toxicologically Synergistic No information available

Products**Delayed and immediate effects as well as chronic effects from short and long-term exposure****Irritation** Severe eye irritant**Sensitization** No information available**Carcinogenicity** The table below indicates whether each agency has listed any ingredient as a carcinogen.

Component	CAS No	IARC	NTP	ACGIH	OSHA	Mexico
Ethyl alcohol	64-17-5	Not listed	Known	A3	Not listed	A3
Methyl alcohol	67-56-1	Not listed	Not listed	Not listed	Not listed	Not listed
Methylisobutyl ketone	108-10-1	Group 2B	Not listed	A3	X	A3
Ethyl acetate	141-78-6	Not listed	Not listed	Not listed	Not listed	Not listed
Solvent naphtha (petroleum), light aliphatic	64742-89-8	Not listed	Not listed	Not listed	Not listed	Not listed

IARC (International Agency for Research on Cancer)**IARC (International Agency for Research on Cancer)**

Group 1 - Carcinogenic to Humans

Group 2A - Probably Carcinogenic to Humans

Group 2B - Possibly Carcinogenic to Humans

NTP: (National Toxicity Program)

Known - Known Carcinogen

Reasonably Anticipated - Reasonably Anticipated to be a Human Carcinogen

A1 - Known Human Carcinogen

A2 - Suspected Human Carcinogen

A3 - Animal Carcinogen

ACGIH: (American Conference of Governmental Industrial Hygienists)**ACGIH: (American Conference of Governmental Industrial Hygienists)**

Mexico - Occupational Exposure Limits - Carcinogens

A1 - Confirmed Human Carcinogen

A2 - Suspected Human Carcinogen

A3 - Confirmed Animal Carcinogen

A4 - Not Classifiable as a Human Carcinogen

A5 - Not Suspected as a Human Carcinogen

Mexico - Occupational Exposure Limits - Carcinogens**Mutagenic Effects** Mutagenic effects have occurred in experimental animals.**Reproductive Effects** No information available.**Developmental Effects** No information available.**Teratogenicity** No information available.**STOT - single exposure** Central nervous system (CNS) Optic nerve Respiratory system**STOT - repeated exposure** None known**Aspiration hazard** No information available**Symptoms / effects, both acute and delayed** Inhalation of high vapor concentrations may cause symptoms like headache, dizziness, tiredness, nausea and vomiting**Endocrine Disruptor Information** No information available**Other Adverse Effects** The toxicological properties have not been fully investigated.**12. Ecological information****Ecotoxicity**

Contains a substance which is: Toxic to aquatic organisms. The product contains following substances which are hazardous for the environment.

Component	Freshwater Algae	Freshwater Fish	Microtox	Water Flea
Ethyl alcohol	EC50 (72h) = 275 mg/l (Chlorella vulgaris)	Fathead minnow (Pimephales promelas)	Photobacterium phosphoreum: EC50 = 34634	EC50 = 9268 mg/L/48h EC50 = 10800 mg/L/24h

Ethanol, Anhydrous (Histological)

Revision Date 07-Jan-2022

		LC50 = 14200 mg/l/96h	mg/L/30 min Photobacterium phosphoreum: EC50 = 35470 mg/L/5 min	
Methyl alcohol	Not listed	Pimephales promelas: LC50 > 10000 mg/L 96h	EC50 = 39000 mg/L 25 min EC50 = 40000 mg/L 15 min EC50 = 43000 mg/L 5 min	EC50 > 10000 mg/L 24h
Methylisobutyl ketone	EC50: 400 mg/L/96h	LC50: 496 - 514 mg/L 96h flow-through (Pimephales promelas)	EC50 = 79.6 mg/L 5 min	EC50: 4280.0 mg/L/24h EC50: 170 mg/L/48h EC50: 4280.0 mg/L/24h
Ethyl acetate	EC50 = 3300 mg/L/48h	Fathead minnow: LC50: 230 mg/l/ 96h Gold orfe: LC50: 270 mg/L/48h	EC50 = 1180 mg/L 5 min EC50 = 1500 mg/L 15 min EC50 = 5870 mg/L 15 min EC50 = 7400 mg/L 2 h	EC50 = 717 mg/L/48h
Solvent naphtha (petroleum), light aliphatic	EC50: = 4700 mg/L 72h (Pseudokirchneriella subcapitata)	Not listed	Not listed	Not listed

Persistence and Degradability Persistence is unlikely based on information available.

Bioaccumulation/ Accumulation No information available.

Mobility Will likely be mobile in the environment due to its volatility.

Component	log Pow
Ethyl alcohol	-0.32
Methyl alcohol	-0.74
Methylisobutyl ketone	1.19
Ethyl acetate	0.6

13. Disposal considerations

Waste Disposal Methods Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. Chemical waste generators must also consult local, regional, and national hazardous waste regulations to ensure complete and accurate classification.

Component	RCRA - U Series Wastes	RCRA - P Series Wastes
Methyl alcohol - 67-56-1	U154	-
Methylisobutyl ketone - 108-10-1	U161	-
Ethyl acetate - 141-78-6	U112	-

14. Transport information

DOT

UN-No UN1170
Proper Shipping Name ETHANOL SOLUTION
Hazard Class 3
Packing Group II

TDG

UN-No UN1170
Proper Shipping Name ETHANOL SOLUTION
Hazard Class 3
Packing Group II

IATA

UN-No UN1170
Proper Shipping Name ETHANOL SOLUTION
Hazard Class 3
Packing Group II

IMDG/IMO

UN-No UN1170
Proper Shipping Name ETHANOL SOLUTION
Hazard Class 3

Packing Group

II

15. Regulatory information**United States of America Inventory**

Component	CAS No	TSCA	TSCA inventory notification - Active-Inactive	TSCA - EPA Regulatory Flags
Ethyl alcohol	64-17-5	X	ACTIVE	-
Methyl alcohol	67-56-1	X	ACTIVE	-
Methylisobutyl ketone	108-10-1	X	ACTIVE	-
Ethyl acetate	141-78-6	X	ACTIVE	-
Solvent naphtha (petroleum), light aliphatic	64742-89-8	X	ACTIVE	-

Legend:

TSCA US EPA (TSCA) - Toxic Substances Control Act, (40 CFR Part 710)

X - Listed

- - Not Listed

TSCA 12(b) - Notices of Export Not applicable

International Inventories

Canada (DSL/NDL), Europe (EINECS/ELINCS/NLP), Philippines (PICCS), Japan (ENCS), Japan (ISHL), Australia (AICS), China (IECSC), Korea (KECL).

Component	CAS No	DSL	NDL	EINECS	PICCS	ENCS	ISHL	AICS	IECSC	KECL
Ethyl alcohol	64-17-5	X	-	200-578-6	X	X	X	X	X	KE-13217
Methyl alcohol	67-56-1	X	-	200-659-6	X	X	X	X	X	KE-23193
Methylisobutyl ketone	108-10-1	X	-	203-550-1	X	X	X	X	X	KE-24725
Ethyl acetate	141-78-6	X	-	205-500-4	X	X	X	X	X	KE-00047
Solvent naphtha (petroleum), light aliphatic	64742-89-8	X	-	265-192-2	X	-	-	X	X	KE-31661

KECL - NIER number or KE number (<http://ncis.nier.go.kr/en/main.do>)**U.S. Federal Regulations****SARA 313**

Component	CAS No	Weight %	SARA 313 - Threshold Values %
Methyl alcohol	67-56-1	3-5	1.0
Methylisobutyl ketone	108-10-1	1-3	0.1

SARA 311/312 Hazard Categories See section 2 for more information

CWA (Clean Water Act)**Clean Air Act**

Component	HAPS Data	Class 1 Ozone Depletors	Class 2 Ozone Depletors
Methyl alcohol	X	-	-
Methylisobutyl ketone	X	-	-

OSHA - Occupational Safety and Health Administration Not applicable

CERCLA

Component	Hazardous Substances RQs	CERCLA EHS RQs
Methyl alcohol	5000 lb	-
Methylisobutyl ketone	5000 lb	-

Ethanol, Anhydrous (Histological)

Revision Date 07-Jan-2022

Ethyl acetate	5000 lb	-
---------------	---------	---

California Proposition 65

Ethyl alcohol is only considered a Proposition 65 developmental hazard when it is ingested as an alcoholic beverage. This product contains the following Proposition 65 chemicals.

Component	CAS No	California Prop. 65	Prop 65 NSRL	Category
Ethyl alcohol	64-17-5	Development (alcoholic beverages only) Carcinogen	-	Developmental Carcinogen
Methyl alcohol	67-56-1	Developmental	-	Developmental
Methylisobutyl ketone	108-10-1	Carcinogen Developmental	-	Developmental Carcinogen

U.S. State Right-to-Know Regulations

Component	Massachusetts	New Jersey	Pennsylvania	Illinois	Rhode Island
Ethyl alcohol	X	X	X	X	X
Methyl alcohol	X	X	X	X	X
Methylisobutyl ketone	X	X	X	X	X
Ethyl acetate	X	X	X	-	X

U.S. Department of Transportation

Reportable Quantity (RQ): Y
DOT Marine Pollutant N
DOT Severe Marine Pollutant N

U.S. Department of Homeland Security

This product does not contain any DHS chemicals.

Other International Regulations

Mexico - Grade

Serious risk, Grade 3

Authorisation/Restrictions according to EU REACH

Component	REACH (1907/2006) - Annex XIV - Substances Subject to Authorization	REACH (1907/2006) - Annex XVII - Restrictions on Certain Dangerous Substances	REACH Regulation (EC 1907/2006) article 59 - Candidate List of Substances of Very High Concern (SVHC)
Methyl alcohol	-	Use restricted. See item 69. (see link for restriction details)	-
Methylisobutyl ketone	-	Use restricted. See item 75. (see link for restriction details)	-
Ethyl acetate	-	Use restricted. See item 75. (see link for restriction details)	-
Solvent naphtha (petroleum), light aliphatic	-	Use restricted. See item 28. (see link for restriction details) Use restricted. See item 29. (see link for restriction details) Use restricted. See item 75. (see link for restriction details)	-

<https://echa.europa.eu/substances-restricted-under-reach>

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

Component	CAS No	OECD HPV	Persistent Organic Pollutant	Ozone Depletion Potential	Restriction of Hazardous Substances (RoHS)
Ethyl alcohol	64-17-5	Listed	Not applicable	Not applicable	Not applicable
Methyl alcohol	67-56-1	Listed	Not applicable	Not applicable	Not applicable

Ethanol, Anhydrous (Histological)

Revision Date 07-Jan-2022

Methylisobutyl ketone	108-10-1	Listed	Not applicable	Not applicable	Not applicable
Ethyl acetate	141-78-6	Listed	Not applicable	Not applicable	Not applicable
Solvent naphtha (petroleum), light aliphatic	64742-89-8	Listed	Not applicable	Not applicable	Not applicable

Component	CAS No	Seveso III Directive (2012/18/EC) - Qualifying Quantities for Major Accident Notification	Seveso III Directive (2012/18/EC) - Qualifying Quantities for Safety Report Requirements	Rotterdam Convention (PIC)	Basel Convention (Hazardous Waste)
Ethyl alcohol	64-17-5	Not applicable	Not applicable	Not applicable	Annex I - Y42
Methyl alcohol	67-56-1	500 tonne	5000 tonne	Not applicable	Not applicable
Methylisobutyl ketone	108-10-1	Not applicable	Not applicable	Not applicable	Annex I - Y42
Ethyl acetate	141-78-6	Not applicable	Not applicable	Not applicable	Annex I - Y42
Solvent naphtha (petroleum), light aliphatic	64742-89-8	Not applicable	Not applicable	Not applicable	Not applicable

16. Other information

Prepared By

Regulatory Affairs
Thermo Fisher Scientific
Email: EMSDS.RA@thermofisher.com

Creation Date

09-Jul-2009

Revision Date

07-Jan-2022

Print Date

07-Jan-2022

Revision Summary

This document has been updated to comply with the US OSHA HazCom 2012 Standard replacing the current legislation under 29 CFR 1910.1200 to align with the Globally Harmonized System of Classification and Labeling of Chemicals (GHS).

Disclaimer

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text

End of SDS



CERTIFICATE OF ANALYSIS

Fertigro FZ-59

Typical Analysis**Chemical composition**

Phosphoric acid	(H ₃ PO ₄)	:	59 %
Phosphorus pentoxide	(P ₂ O ₅)	:	42.5 %
Acidity	(H ⁺)	:	6.00 mol/kg

Physical properties

Density, at 20°C	:	1.42 kg/dm ³
------------------	---	-------------------------

Productcode : PL030L
Revision : 1

Disclaimer: The information herein contained is to the best of Brinkman Agro B.V. knowledge and belief accurate. The conditions of your use and application of the suggested formulations and recommendations are beyond our control. The recommendations are intended as a general guide and must be adapted to the local conditions. No warranty is made as to the accuracy of any data or statements contained herein. Brinkman Agro B.V. specifically disclaims any responsibility or liability to the use of the suggested formulations and recommendations and shall not in any event be liable for any special, incidental or consequential damages arising from such use.

Brinkman Agro BV

Postal Address
P.O. Box 2
2690 AA 's-Gravenzande
The Netherlands

Visiting Address
Woutersweg 10
2691 PR 's-Gravenzande

Telephone
+31 (0) 174 44 8100

Chamber of Commerce
04015052
VAT number
NL003742532B01

Press Esc to exit full screen

Conforms to Regulation (EC) No. 1907/2006 (REACH), Annex II / Regulation (EU) No. 2015/830.
- Netherlands

Date of issue/ Date of revision : 07.02.2018
Date of previous issue : 23.03.2017
Version : 3.0



SAFETY DATA SHEET

Phosphoric acid 59% /Fertigro FZ-59

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

1.1 Product identifier

Product name : Phosphoric acid 59% H₃PO₄
Index number : 015-011-00-6
EC number : 231-633-2
REACH Registration number : 01-2119485924-24Not available.
CAS number : 7664-38-2
Product code : PL030L
Product type : liquid (Clear viscous liquid.)
Chemical formula : H₃PO₄

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

Identified uses
Industrial distribution. Industrial USE to formulate chemical product mixtures. Professional formulation of fertiliser products.

Uses advised against	: Other non-specified industry
Reason	: Due to lack of related experience or data, the supplier cannot approve this use.

1.3 Details of the supplier of the safety data sheet

Address : Royal Brinkman
Street : Woutersweg
Number : 10
Postal code : 2691 PR
City : 's-Gravenzande
Country : Netherlands

Date of issue : 07.02.2018

Page:1/26

Phosphoric acid 59% /Fertigro FZ-59

P.O. Box Address

P.O. Box : 58
Postal code : 3130 AB
City : 's-Gravenzande
Country : Netherlands
Telephone number : +31 (174) 44 6300
Fax no. : +31 (174) 44 6350
e-mail address of person : SDS@royalbrinkman.com
responsible for this SDS

1.4 Emergency telephone number

National advisory body/Poison Center

Name : Nationaal Vergiftigings Informatie Centrum
Telephone number : +31 (0) 30 274 88 88 Uitsluitend bestemd om
professionele hulpverleners te informeren bij acute
vergiftigingen. (Only intended to inform professionals
in acute poisonings.)

Hours of operation : 24h

Supplier

Telephone number : +31 (0) 10 44 53 188
Hours of operation : 24 h

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture.

Product definition : Mono-constituent substance

Classification according to Regulation (EC) No. 1272/2008 [CLP/GHS]

Classification : Met. Corr. 1, H290
Skin Corr. 1B, H314

The product is classified as hazardous according to Regulation (EC) 1272/2008 as amended.

See Section 16 for the full text of the H statements declared above.

See Section 11 for more detailed information on health effects and symptoms.

2.2 Label elements

Hazard pictograms :



Signal word : Danger

Hazard statements : H290 May be corrosive to metals.

Date of issue : 07.02.2018

Page:2/26

Phosphoric acid 59% /Fertigro FZ-59

H314 Causes severe skin burns and eye damage.

Precautionary statements

Prevention	:	P280	Wear protective gloves and eye protection.
	:	P260-b	Do not breathe gas or vapour.
Response	:	P305	IF IN EYES:
	:	P351	Rinse cautiously with water for several minutes.
	:	P338	Remove contact lenses, if present and easy to do. Continue rinsing.
	:	P310	Immediately call a POISON CENTER or doctor/physician.
	:	P303	IF ON SKIN (or hair):
	:	P361-a	Take off immediately all contaminated clothing.
	:	P353	Rinse skin with water.
Storage	:	P234	Keep only in original packaging.

EU Regulation (EC) No. 1907/2006 (REACH) Annex XVII - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles : Applicable, Table 3.

Special packaging requirements

Containers to be fitted with child-resistant fastenings : Not applicable.
Tactile warning of danger : Not applicable.

2.3 Other hazards

Substance meets the criteria for PBT according to Regulation (EC) No. 1907/2006, Annex XIII : Not applicable.
Substance meets the criteria for vPvB according to Regulation (EC) No. 1907/2006, Annex XIII : Not applicable.
Other hazards which do not result in classification : None.
Other hazards which do not result in classification : Attacks many metals producing extremely flammable hydrogen gas which can form explosive mixtures with air.

SECTION 3: Composition/information on ingredients

3.1 Substances : Mono-constituent substance

Product/ingredient	Identifiers	%	Classification	Type
Date of issue : 07.02.2018		Page:3/26		

Phosphoric acid 59% /Fertigro FZ-59

name			Regulation (EC) No. 1272/2008 [CLP]	
phosphoric acid	RRN: 01-2119485924- 24 EC: 231-633-2 CAS : 7664-38-2 Index: 015-011-00-6	>= 50 - < 65	Met. Corr. 1, H290 Skin Corr. 1B, H314 Eye Dam. 1, H318	[A]

Type

[A] Constituent

[B] Impurity

[C] Stabilizing additive

See Section 16 for the full text of the H statements declared above.

There are no additional ingredients present which, within the current knowledge of the supplier, are classified and contribute to the classification of the substance and hence require reporting in this section.

Occupational exposure limits, if available, are listed in Section 8.

SECTION 4: First aid measures

4.1 Description of first aid measures

Eye contact	:	Immediately flush eyes with plenty of water for at least 15 minutes, keeping eyelids open. Check for and remove any contact lenses. Get medical attention immediately.
Inhalation	:	Avoid inhalation of vapor, spray or mist. If inhaled, remove to fresh air. Get medical attention immediately. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus.
Skin contact	:	In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Get medical attention immediately. Chemical burns must be treated promptly by a physician.
Ingestion	:	Wash out mouth with water. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink.
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. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Wash contaminated clothing thoroughly with water before removing it, or wear gloves.

Date of issue : 07.02.2018

Page:4/26

4.2 Most important symptoms and effects, both acute and delayed

Potential acute health effects

- Eye contact** : Causes serious eye damage.
- Inhalation** : Vapor may be irritating to eyes and respiratory system.
- Skin contact** : Causes severe burns.
- Ingestion** : May cause burns to mouth, throat and stomach.

Over-exposure signs/symptoms

- Eye contact** : Adverse symptoms may include the following:
pain
watering
redness
- Inhalation** : No specific data.
- Skin contact** : Adverse symptoms may include the following:
pain or irritation
blistering may occur
- Ingestion** : Adverse symptoms may include the following:
stomach pains
Irritating to mouth, throat and stomach.
May cause burns to mouth, throat and stomach.

4.3 Indication of any immediate medical attention and special treatment needed

- Notes to physician** : Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
- Specific treatments** : No specific treatment.

SECTION 5: Firefighting measures

5.1 Extinguishing media

- Suitable extinguishing media** : Use an extinguishing agent suitable for the surrounding fire.
- Unsuitable extinguishing media** : None identified.

5.2 Special hazards arising from the substance or mixture

- Hazards from the substance or mixture** : In a fire or if heated, a pressure increase will occur and the container may burst.
- Hazardous thermal decomposition products** : Decomposition products may include the following materials:
phosphorus oxides
Avoid breathing dusts, vapors or fumes from burning

Phosphoric acid 59% /Fertigro FZ-59

materials.
In case of inhalation of decomposition products in a fire, symptoms may be delayed.

5.3 Advice for firefighters

- Special precautions for fire-fighters** : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.
- 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. Clothing for fire-fighters (including helmets, protective boots and gloves) conforming to European standard EN 469 will provide a basic level of protection for chemical incidents.
- Additional information** : None.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

- For non-emergency personnel** : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Do not breathe vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.
- For emergency responders** : 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".

- 6.2 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).

6.3 Methods and materials for containment and cleaning up

- Small spill** : Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Absorb spillage to prevent material damage. Dispose of via a licensed waste disposal contractor.
- Large spill** : Stop leak if without risk. Move containers from spill area. Absorb spillage to prevent material damage. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an

Date of issue : 07.02.2018

Page:6/26

Phosphoric acid 59% /Fertigro FZ-59

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 of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilled product.

6.4 Reference to other sections

- : See Section 1 for emergency contact information.
- : See Section 8 for information on appropriate personal protective equipment.
- : See Section 13 for additional waste treatment information.

SECTION 7: Handling and storage

The information in this section contains generic advice and guidance. The list of Identified Uses in Section 1 should be consulted for any available use-specific information provided in the Exposure Scenario(s).

7.1 Precautions for safe handling

- Protective measures** : Put on appropriate personal protective equipment (see Section 8). Do not get in eyes or on skin or clothing. Do not breathe vapor or mist. Do not ingest. If during normal use the material presents a respiratory hazard, use only with adequate ventilation or wear appropriate respirator. 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. Spillages should be cleaned up promptly to avoid damage to surrounding materials.
- Advice on general occupational 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.

7.2 Conditions for safe storage, including any incompatibilities

- Recommendations** : 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 in a corrosion resistant container with a resistant inner liner. 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. Bund storage facilities to prevent soil and water pollution in the event of spillage.

Date of issue : 07.02.2018

Page:7/26

Phosphoric acid 59% /Fertigro FZ-59

7.3 Specific end use(s)

Recommendations : Not available.

SECTION 8: Exposure controls/personal protection

The list of Identified Uses in Section 1 should be consulted for any available use-specific information provided in the Exposure Scenario(s).

8.1 Control parameters

Occupational exposure limits

Product/ingredient name	Exposure limit values
phosphoric acid	MinSZW Wettelijke Grenswaarden (2007-01-01) TWA 1 mg/m ³ STEL 2 mg/m ³ EU OEL (2000-06-01) TWA 1 mg/m ³ STEL 2 mg/m ³

Recommended monitoring procedures : If this product contains ingredients with exposure limits, personal, workplace atmosphere or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment.
Reference should be made to monitoring standards, such as the following:
European Standard EN 689 (Workplace atmospheres - Guidance for the assessment of exposure by inhalation to chemical agents for comparison with limit values and measurement strategy)
European Standard EN 14042 (Workplace atmospheres - Guide for the application and use of procedures for the assessment of exposure to chemical and biological agents)
European Standard EN 482 (Workplace atmospheres - General requirements for the performance of procedures for the measurement of chemical agents)
Reference to national guidance documents for methods for the determination of hazardous substances will also be required.

DNELs/DMELs

Product/ingredient name	Type	Exposure	Value	Population	Effects
phosphoric acid	DNEL	Long term Inhalation	2,92 mg/m ³	Workers	Systemic
phosphoric acid	DNEL	Long term Inhalation	0,73 mg/m ³	Consumers	Systemic

PNECs

Date of issue : 07.02.2018

Page:8/26

Phosphoric acid 59% /Fertigro FZ-59

No PNECs available.

PNEC Summary : Not available.

8.2 Exposure controls

Appropriate engineering controls : 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.

Individual protection measures

Hygiene measures : A washing facility or water for eye and skin cleaning purposes should be present.

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. chemical splash goggles and/or face shield. If inhalation hazards exist, a full-face respirator may be required instead. Recommended: face shield
Tightly-fitting goggles CEN: EN166

Skin protection

Hand 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. For general applications, we recommend gloves with a thickness typically greater than 0.35 mm. It should be emphasised that glove thickness is not necessarily a good predictor of glove resistance to a specific chemical, as the permeation efficiency of the glove will be dependent on the exact composition of the glove material.
> 8 hours (breakthrough time): butyl rubber, natural rubber (latex), neoprene, nitrile rubber, PVC, Viton®

Body protection : Personal protective equipment for the body should be selected based on the task being performed and the risks involved. Recommended: Protective clothing

Other skin protection : 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 : In case of inadequate ventilation wear respiratory protection. Recommended: acid gas filter (Type E) self-contained breathing apparatus (SCBA) Filter P2SL (EN 143, 140)

Environmental exposure controls : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering

Date of issue : 07.02.2018

Page:9/26

Phosphoric acid 59% /Fertigro FZ-59

modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Appearance

Physical state	: liquid (Clear viscous liquid.)
Color	: Colorless.
Odor	: Odorless.
Odor threshold	: Not determined.
pH	: < 3

Melting point/freezing point : < -10 °C

Initial boiling point and boiling range : 135 - 158 °C

Flash point : Not determined

Fire point : Not determined

Evaporation rate : Not determined

Flammability (solid, gas) : Non-flammable.

Upper/lower flammability or explosive limits : **Lower:** Not determined

Upper: Not determined

Vapor pressure : Not determined

Vapor density : Not determined

Relative density : Not determined

Bulk density : Not determined

Density : 1,42 g/cm³ @ 20 °C

Miscibility with water : Miscible in water.

Partition coefficient: n-octanol/water : Not determined

Auto-ignition temperature : Not determined

Viscosity : **Dynamic:** Not determined

Kinematic: Not determined

Explosive properties : None.

Oxidizing properties : None

9.2 Other information

No additional information.

SECTION 10: Stability and reactivity

10.1 Reactivity : May be corrosive to metals. Expert judgment

10.2 Chemical stability : The product is stable.

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

Phosphoric acid 59% /Fertigro FZ-59

- 10.4 Conditions to avoid** : Avoid contamination by any source including metals, dust and organic materials.
- 10.5 Incompatible materials** : Reactive or incompatible with the following materials: metals
- 10.6 Hazardous decomposition products** : Under normal conditions of storage and use, hazardous decomposition products should not be produced.

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure	References
phosphoric acid	LD50 Oral	Rat	2.600 mg/kg OECD 423	Not applicable.	IUCLID5

Conclusion/Summary : No known significant effects or critical hazards.

Irritation/Corrosion

Product/ingredient name	Result	Species	Score	Exposure	Observation	References
phosphoric acid	Skin - Visible necrosis Primary dermal irritation index (PDII)	Rabbit	Not applicable.	1 h	72 h	IUCLID5

Conclusion/Summary

- Skin** : Corrosive to the skin.
- Eyes** : Corrosive to eyes.
- Respiratory** : May be irritating to the respiratory system.

Sensitization

Conclusion/Summary

- Skin** : Corrosive to skin on contact.
- Respiratory** : No data available for this end-point, hence this classification is not considered to be applicable.

Mutagenicity

Conclusion/Summary

- : No known significant effects or critical hazards.

Carcinogenicity

Conclusion/Summary

- : No known significant effects or critical hazards.

Date of issue : 07.02.2018

Page:11/26

Phosphoric acid 59% /Fertigro FZ-59

Reproductive toxicity

Product/ingredient name	Maternal toxicity	Fertility	Development toxin	Species	Dose	Exposure	References
phosphoric acid	Not applicable.	Negative	Not applicable.	Rat	Oral : > 500 mg/kg bw/day OECD 422	54 days	IUCLID5
	Negative	Not applicable.	Negative	Rat	Oral : > 410 mg/kg bw/day OECD 414	10 days	IUCLID5
	Negative	Not applicable.	Negative	Mouse	Oral : > 370 mg/kg bw/day OECD 414	10 days	IUCLID5

Conclusion/Summary : No known significant effects or critical hazards.

Information on the likely routes of exposure : Not available.

Potential acute health effects

Inhalation : Vapor may be irritating to eyes and respiratory system.

Ingestion : May cause burns to mouth, throat and stomach.

Skin contact : Causes severe burns.

Eye contact : Causes serious eye damage.

Symptoms related to the physical, chemical and toxicological characteristics

Inhalation : No specific data.

Ingestion : Adverse symptoms may include the following:
stomach pains
Irritating to mouth, throat and stomach.
May cause burns to mouth, throat and stomach.

Skin contact : Adverse symptoms may include the following:
pain or irritation
blistering may occur

Eye contact : Adverse symptoms may include the following: pain
watering redness

Delayed and immediate effects and also chronic effects from short and long term exposure

Short term exposure

Potential immediate effects : Adverse health effects are considered unlikely, when the

Date of issue : 07.02.2018

Page:12/26

Phosphoric acid 59% /Fertigro FZ-59

product is used according to directions.

Potential delayed effects : None identified.

Long term exposure

Potential immediate effects : Adverse health effects are considered unlikely, when the product is used according to directions.

Potential delayed effects : None identified.

Potential chronic health effects

Product/ingredient name	Result	Species	Dose	Exposure	References
phosphoric acid	Sub-chronic NOAEL Oral	Rat	250 mg/kg OECD 422	54 days	IUCLID5

Carcinogenicity : No known significant effects or critical hazards.

Mutagenicity : No known significant effects or critical hazards.

Fertility effects : No known significant effects or critical hazards.

Developmental effects : No known significant effects or critical hazards.

Effects on or via lactation : No known significant effects or critical hazards.

Other effects : No known significant effects or critical hazards.

SECTION 12: Ecological information

12.1 Toxicity

Product/ingredient name	Result	Species	Exposure	References
phosphoric acid	Acute EC50 > 100 mg/l Fresh water OECD 202	Water flea	48 h	IUCLID5
	Acute EC50 > 100 mg/l Fresh water OECD 201	Algae	72 h	IUCLID5

Conclusion/Summary : Practically non-toxic to aquatic organisms.

12.2 Persistence and degradability

Conclusion/Summary : Readily biodegradable in plants and soils. The product does not show any bioaccumulation phenomena.

12.3 Bioaccumulative potential

Conclusion/Summary : Bioaccumulative potential : Not reported

Date of issue : 07.02.2018

Page:13/26

12.4 Mobility in soil

Soil/water partition coefficient (KOC) : Not available.

Mobility : This product may move with surface or groundwater flows because its water solubility is:

12.5 Results of PBT and vPvB assessment

PBT : Not applicable.

vPvB : Not applicable.

12.6 Other adverse effects : No known significant effects or critical hazards.

SECTION 13: Disposal considerations

The information in this section contains generic advice and guidance. The list of Identified Uses in Section 1 should be consulted for any available use-specific information provided in the Exposure Scenario(s).

13.1 Waste treatment methods

Product

Methods of disposal : The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction.

Hazardous waste : Yes.

European waste catalogue (EWC)

Waste code	Waste designation
06 01 04*	phosphoric and phosphorous acid


Packaging

Methods of disposal : The generation of waste should be avoided or minimized wherever possible. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible.

Special precautions : This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Avoid dispersal of spilled material and runoff and contact

Phosphoric acid 59% /Fertigro FZ-59

Additional information	
<u>Marine pollutant</u>	: Not available.
<u>IMDG Code Segregation group</u>	: SG01
<u>Emergency schedules (EmS)</u>	: F-A, S-B

Regulation: IATA	
14.1 UN number	1805
14.2 UN proper shipping name	PHOSPHORIC ACID, SOLUTION
14.3 Transport hazard class(es)	8
	
14.4 Packing group	III
14.5 Environmental hazards	No.
Additional information	
<u>Marine pollutant</u>	: No.

14.6 Special precautions for user : Transport within user's premises: Ensure that persons transporting the product know what to do in the event of an accident or spillage.

14.7 Transport in bulk according to Annex II of MARPOL and the IBC Code

Proper shipping name : Phosphoric acid
Ship type : 3
Pollution category : Z

14.8 IMSBC : Not applicable.

SECTION 15: Regulatory information

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

EU Regulation (EC) No. 1907/2006 (REACH)

Annex XIV - List of substances subject to authorization

Annex XIV: None of the components are listed.

Substances of very high concern: None of the components are listed.

EU Regulation (EC) No. 1907/2006 (REACH) Annex XVII - Restrictions on the manufacture, placing on the market and use of certain : Applicable, Table 3.

Date of issue : 07.02.2018

Page:16/26

Phosphoric acid 59% /Fertigro FZ-59

dangerous substances, mixtures and articles

Other EU regulations

Ozone depleting substances (1005/2009/EU)

None of the components are listed.

Prior Informed Consent (PIC) (649/2012/EU)

None of the components are listed.

Seveso Directive

This product is not controlled under the Seveso Directive.

National regulations

Biocidal products regulation : Not applicable.

Water Discharge Policy (ABM) : Slightly harmful to aquatic organisms., Abatement effort:, B

Notes : To our knowledge no other country or state specific regulations are applicable.

15.2 Chemical Safety Assessment

: Complete.

SECTION 16: Other information

Abbreviations and acronyms : ATE = Acute Toxicity Estimate
CLP = Classification, Labelling and Packaging Regulation
[Regulation (EC) No. 1272/2008]
DNEL = Derived No Effect Level
DMEL = Derived Minimal Effect Level
EUH statement = CLP-specific Hazard statement
PNEC = Predicted No Effect Concentration
RRN = REACH Registration Number
PBT = Persistent, Bioaccumulative and Toxic
vPvB = Very Persistent and Very Bioaccumulative
bw = Body weight

Procedure used to derive the classification according to Regulation (EC) No. 1272/2008 [CLP/GHS]

Classification	Justification
Met. Corr. 1, H290	Calculation method
Skin Corr. 1B, H314	Calculation method

Full text of abbreviated H statements

H290	May be corrosive to metals.
H314	Causes severe skin burns and eye damage.

Date of issue : 07.02.2018

Page:17/26

Phosphoric acid 59% /Fertigro FZ-59

H318	Causes serious eye damage.
------	----------------------------

Full text of classifications [CLP/GHS]

Met. Corr. 1, H290	CORROSIVE TO METALS - Category 1
Skin Corr. 1B, H314	SKIN CORROSION/IRRITATION - Category 1B
Eye Dam. 1, H318	SERIOUS EYE DAMAGE/ EYE IRRITATION - Category 1

Revision comments : See Section 1 for supplier contact information.

Date of printing : 14.02.2018

Date of issue/ Date of revision : 07.02.2018

Date of previous issue : 23.03.2017

Version : 3.0

Prepared by : Yara Chemical Compliance (YCC).

[] Indicates information that has changed from previously issued version.

Notice to reader

To the best of our knowledge, the information provided in this Safety Data Sheet is accurate as at the date of its issue. The information it contains is being given for safety guidance purposes and relates only to the specific material and uses described in it. This information does not necessarily apply to that material when combined with other material(s) or when used otherwise than as described herein, since all materials may represent unknown hazards and should be used with caution. Final determination of the suitability of any material is the sole responsibility of the user.

Date of issue : 07.02.2018

Page:18/26

4.7.4 YaraTera CALCINIT

Conforms to Regulation (EC) No. 1907/2006 (REACH), Annex II / Regulation (EU) No. 2015/830,
- United Kingdom (UK)

Date of issue/ Date of revision : 08.12.2020
Date of previous issue : 18.09.2019
Version : 6.0



SAFETY DATA SHEET

YaraTera CALCINIT

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

1.1 Product identifier

Product name : YaraTera CALCINIT
EC number : 239-289-5
REACH Registration number : 01-2119493947-16
CAS number : 15245-12-2
Product code : PA34IP
Product type : Solid

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

Identified uses
Industrial distribution. Industrial USE to formulate chemical product mixtures. Professional formulation of fertiliser products. Professional USE as fertiliser at Farm - loading and spreading. Professional USE as fertiliser in Greenhouse. Professional USE as liquid fertiliser in open field.

Uses advised against	: Other non-specified industry
Reason	: Due to lack of related experience or data, the supplier cannot approve this use.

1.3 Details of the supplier of the safety data sheet

Address : Yara UK Limited
Street : Harvest House, Europarc
Postal code : DN37 9TZ
City : Grimsby, North East Lincolnshire
Country : United Kingdom
Telephone number : +44 (0) 1472 889250
Fax no. : +44 (0) 1472 889251
e-mail address of person : yarauk.hesq@yara.com

Date of issue : 08.12.2020

Page:1/24

responsible for this SDS

1.4 Emergency telephone number

National advisory body/Poison Center : Not available.

Supplier

Emergency telephone number (with hours of operation) : National Chemical Emergency Centre
+44 (0) 1865 407333 (24h)

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Product definition : Mono-constituent substance

Classification according to Regulation (EC) No. 1272/2008 [CLP/GHS]

Classification : Acute Tox. 4, H302
Eye Dam. 1, H318

The product is classified as hazardous according to Regulation (EC) 1272/2008 as amended.

See Section 16 for the full text of the H statements declared above.
See Section 11 for more detailed information on health effects and symptoms.

2.2 Label elements

Hazard pictograms :



Signal word : Danger

Hazard statements : H302 Harmful if swallowed.
H318 Causes serious eye damage.

Precautionary statements

Prevention : P280 Wear protective gloves and eye protection.
P270 Do not eat, drink or smoke when using this product.
P264-a Wash hands thoroughly after handling.

Response : P305 IF IN EYES:
P351 Rinse cautiously with water for several minutes.
P338 Remove contact lenses, if present and easy to do. Continue rinsing.
P310 Immediately call a POISON CENTER or doctor/physician.
P301 IF SWALLOWED:
P312 Call a POISON CENTER or doctor/physician if you feel unwell.
P330 Rinse mouth.

EU Regulation (EC) No. 1907/2006 (REACH) Annex XVII : Applicable, Table 65.

- Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles

Special packaging requirements

Containers to be fitted with child-resistant fastenings : Not applicable.

Tactile warning of danger : Not applicable.

2.3 Other hazards

Product meets the criteria for PBT or vPvB according to Regulation (EC) No. 1907/2006, Annex XIII

PBT	P	B	T	vPvB	vP	vB
Not applicable (Inorganic)	N/A	N/A	N/A	Not applicable (Inorganic)	N/A	N/A

Other hazards which do not result in classification : None known.

SECTION 3: Composition/information on ingredients

3.1 Substances : Mono-constituent substance

Product/ingredient name	Identifiers	%	Regulation (EC) No. 1272/2008 [CLP]	Type
Nitric acid, ammonium calcium salt	RRN: 01-2119493947-16 EC: 239-289-5 CAS : 15245-12-2	100	Acute Tox. 4, H302 Eye Dam. 1, H318	[A]

Type

[A] Constituent

[B] Impurity

[C] Stabilizing additive

See Section 16 for the full text of the H statements declared above.

There are no additional ingredients present which, within the current knowledge of the supplier, are classified and contribute to the classification of the substance and hence require reporting in this section.

SECTION 4: First aid measures

4.1 Description of first aid measures

Eye contact : Immediately flush eyes with running water for at least 15

Date of issue : 08.12.2020

Page:3/24

minutes, keeping eyelids open. Check for and remove any contact lenses. Get medical attention immediately.

- | | | |
|-----------------------------------|---|---|
| Inhalation | : | If inhaled, remove to fresh air. Get medical attention immediately. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. |
| Skin contact | : | Gently wash with plenty of soap and water. Do not rub affected area. Get medical attention if irritation develops. |
| Ingestion | : | Wash out mouth with water. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Do not induce vomiting unless directed to do so by medical personnel. Get medical attention if you feel unwell. |
| 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. Wash contaminated clothing thoroughly with water before removing it, or wear gloves. |

4.2 Most important symptoms and effects, both acute and delayed

Over-exposure signs/symptoms

- | | | |
|---------------------|---|---|
| Eye contact | : | Adverse symptoms may include the following: pain, watering, redness |
| Inhalation | : | No specific data. |
| Skin contact | : | Adverse symptoms may include the following: irritation, redness |
| Ingestion | : | Adverse symptoms may include the following: stomach pains |

4.3 Indication of any immediate medical attention and special treatment needed

- | | | |
|----------------------------|---|---|
| Notes to physician | : | Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled. In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours. |
| Specific treatments | : | No specific treatment. |

SECTION 5: Firefighting measures

5.1 Extinguishing media

- | | | |
|---------------------------------------|---|---|
| Suitable extinguishing media | : | Use flooding quantities of water for extinction. |
| Unsuitable extinguishing media | : | Do NOT use chemical extinguisher or foam or attempt to smother the fire with steam or sand. |

5.2 Special hazards arising from the substance or mixture

- | | | |
|--|---|--|
| Hazards from the substance or mixture | : | No specific fire or explosion hazard. |
| Hazardous combustion products | : | Decomposition products may include the following materials: nitrogen oxides, ammonia, Avoid breathing dusts, vapors or fumes from burning materials. In case of inhalation of decomposition products in a fire, symptoms |

may be delayed.

Remark : Non-flammable substance.

5.3 Advice for firefighters

Special protective actions for fire-fighters : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.

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. Clothing for fire-fighters (including helmets, protective boots and gloves) conforming to European standard EN 469 will provide a basic level of protection for chemical incidents.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

For non-emergency personnel : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment (see Section 8).

For emergency responders : 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".

6.2 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).

6.3 Methods and materials for containment and cleaning up

Small spill : Move containers from spill area. Avoid dust generation. Using a vacuum with HEPA filter will reduce dust dispersal. Place spilled material in a designated, labeled waste container. Dispose of via a licensed waste disposal contractor.

Large spill : Move containers from spill area. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Avoid dust generation. Do not dry sweep. Vacuum dust with equipment fitted with a HEPA filter and place in a closed, labeled waste container. Dispose of via a licensed waste disposal contractor.

6.4 Reference to other sections : See Section 1 for emergency contact information.
See Section 8 for information on appropriate personal protective equipment.
See Section 13 for additional waste treatment information.

SECTION 7: Handling and storage

The information in this section contains generic advice and guidance. The list of Identified Uses in Section 1 should be consulted for any available use-specific information provided in the Exposure Scenario(s).

7.1 Precautions for safe handling

Not for human or animal consumption.

Protective measures	:	Put on appropriate personal protective equipment (see Section 8). Do not get in eyes or on skin or clothing. Do not ingest. If during normal use the material presents a respiratory hazard, use only with adequate ventilation or wear appropriate respirator. 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.
Advice on general occupational 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.

7.2 Conditions for safe storage, including 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. Keep away from: organic materials, oil and grease.

7.3 Specific end use(s)

Recommendations	:	Not available.
------------------------	---	----------------

SECTION 8: Exposure controls/personal protection

The information in this section contains generic advice and guidance. Information is provided based on typical anticipated uses of the product. Additional measures might be required for bulk handling or other uses that could significantly increase worker exposure or environmental releases.

8.1 Control parameters

Occupational exposure limits

Remark	:	No exposure limit value known.
Recommended monitoring procedures	:	If this product contains ingredients with exposure limits, personal, workplace atmosphere or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory

Date of issue : 08.12.2020

Page:6/24

protective equipment.
 Reference should be made to monitoring standards, such as the following:
 European Standard EN 689 (Workplace atmospheres - Guidance for the assessment of exposure by inhalation to chemical agents for comparison with limit values and measurement strategy)
 European Standard EN 14042 (Workplace atmospheres - Guide for the application and use of procedures for the assessment of exposure to chemical and biological agents)
 European Standard EN 482 (Workplace atmospheres - General requirements for the performance of procedures for the measurement of chemical agents)
 Reference to national guidance documents for methods for the determination of hazardous substances will also be required.

DNELs/DMELs

Product/ingredient name	Type	Exposure	Value	Population	Effects
Nitric acid, ammonium calcium salt	DNEL	Short term Oral	10 mg/kg bw/day	General population [Consumers]	Systemic

PNECs

Product/ingredient name	Type	Compartment Detail	Value	Method Detail
Nitric acid, ammonium calcium salt	PNEC	Sewage Treatment Plant	18 mg/l	Assessment Factors

8.2 Exposure controls

Appropriate engineering controls : 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.

Individual protection measures

Hygiene measures : A washing facility or water for eye and skin cleaning purposes should be present. 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. Wash contaminated clothing before reusing.


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.
Recommended: Tightly-fitting goggles, CEN: EN166.

Skin protection

Hand 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. For general applications, we recommend gloves with a thickness typically greater than 0.35 mm. It should be emphasized that glove thickness is

not necessarily a good predictor of glove resistance to a specific chemical, as the permeation efficiency of the glove will be dependent on the exact composition of the glove material.

> 8 hours (breakthrough time): Protective gloves should be worn under normal conditions of use.

Body protection	: Personal protective equipment for the body should be selected based on the task being performed and the risks involved.
Other skin protection	: 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	: In case of inadequate ventilation wear respiratory protection. Recommended Filter P2 (EN 143)
Environmental exposure controls	: Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.
Personal protective equipment (Pictograms)	: 

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Appearance

Physical state	: Solid (prills)
Color	: White.
Odor	: Odorless.
Odor threshold	: Not determined.
pH	: 5 - 7 [Conc.: 110 g/l]
Melting point/freezing point	: 400 °C

Initial boiling point and boiling range	: Not determined
Flash point	: Not determined
Evaporation rate	: Not determined
Flammability (solid, gas)	: Non-flammable.

Upper/lower flammability or explosive limits	: Lower: Not determined Upper: Not determined
Vapor pressure	: Not determined
Vapor density	: Not determined
Relative density	: 2.05

Bulk density	: 1,100 kg/m ³
--------------	---------------------------

Solubility(ies)	: > 100 g/l Easily soluble in the following materials:
-----------------	---

cold water

Water solubility	: > 100 g/l
Partition coefficient: n-octanol/water	: Not determined
Auto-ignition temperature	: Not determined
Viscosity	: Dynamic: Not determined. Kinematic: Not determined.
Explosive properties	: Non-explosive.
Oxidizing properties	: None

9.2 Other information

No additional information.

SECTION 10: Stability and reactivity

10.1 Reactivity	: No specific test data related to reactivity available for this product or its ingredients.
10.2 Chemical stability	: The product is stable.
10.3 Possibility of hazardous reactions	: Under normal conditions of storage and use, hazardous reactions will not occur.
10.4 Conditions to avoid	: Avoid contamination by any source including metals, dust and organic materials.
10.5 Incompatible materials	: alkalis combustible materials, reducing materials, organic materials, Acids
10.6 Hazardous decomposition products	: Under normal conditions of storage and use, hazardous decomposition products should not be produced.

SECTION 11: Toxicological information**11.1 Information on toxicological effects****Acute toxicity**

Product/ingredient name	Method	Species	Result	Exposure	References
Nitric acid, ammonium calcium salt	OECD 423 LD50 Oral	Rat	500 mg/kg	Not applicable.	CSR
	OECD 402 LD50 Dermal	Rat	2,000 - 5,000 mg/kg	Not applicable.	

Conclusion/Summary : Harmful if swallowed.**Acute toxicity estimates**

Product/ingredient name	Oral	Dermal	Inhalation (gases)	Inhalation (vapors)	Inhalation (dusts and mists)

Date of issue : 08.12.2020

Page:9/24

No tradename available.	500 mg/kg	N/A	N/A	N/A	N/A
Nitric acid, ammonium calcium salt	500 mg/kg	N/A	N/A	N/A	N/A

Irritation/Corrosion

Product/ingredient name	Method	Species	Result	Exposure	References
Nitric acid, ammonium calcium salt	OECD 405	Rabbit	Damage	24 - 72 h	CSR
	Eyes				

Conclusion/Summary

- Skin** : Non-irritating to the skin.
Eyes : Causes serious eye damage.
Respiratory : Non-irritating to the respiratory system.

Sensitization**Conclusion/Summary**

- Skin** : Not sensitizing
Respiratory : Not determined.

Mutagenicity**Conclusion/Summary**

- : No known significant effects or critical hazards.

Carcinogenicity**Conclusion/Summary**

- : No known significant effects or critical hazards.

Reproductive toxicity**Conclusion/Summary**

- : No known significant effects or critical hazards.

Information on the likely routes of exposure:

- : Not available.

Potential acute health effects**Inhalation**

- : May give off gas, vapor or dust that is very irritating or corrosive to the respiratory system. Exposure to decomposition products may cause a health hazard. Serious effects may be delayed following exposure.

Ingestion

- : Harmful if swallowed. May cause burns to mouth, throat and stomach.

Skin contact

- : No known significant effects or critical hazards.

Eye contact

- : Causes serious eye damage.

Symptoms related to the physical, chemical and toxicological characteristics**Inhalation**

- : No specific data.

Ingestion

- : Adverse symptoms may include the following: stomach pains

Skin contact

- : Adverse symptoms may include the following: irritation,

Eye contact : redness
Adverse symptoms may include the following: pain, watering, redness

Delayed and immediate effects and also chronic effects from short and long term exposure

Short term exposure

Potential immediate effects : Adverse health effects are considered unlikely, when the product is used according to directions.

Potential delayed effects : None identified.

Long term exposure

Potential immediate effects : Adverse health effects are considered unlikely, when the product is used according to directions.

Potential delayed effects : None identified.

Potential chronic health effects

Product/ingredient name	Method	Species	Result	Exposure	References
Nitric acid, ammonium calcium salt	OECD 407 Sub-acute NOAEL Oral	Rat	> 1,000 mg/kg	28 days	CSR

Carcinogenicity : No known significant effects or critical hazards.

Mutagenicity : No known significant effects or critical hazards.

Fertility effects : No known significant effects or critical hazards.

Developmental effects : No known significant effects or critical hazards.

Effects on or via lactation : No known significant effects or critical hazards.

Other effects : No known significant effects or critical hazards.

Toxicokinetics

Absorption : Rapidly absorbed.

Distribution : Enters the systemic circulation without passing through liver tissues.

Metabolism : Rapidly metabolized.
Metabolized to the following:
Ca²⁺
NH₄⁺
NO₃⁻

Elimination : Excreted via the urine.
The chemical and its metabolites are fully excreted and do not accumulate within the body.

Other information : Not available.

SECTION 12: Ecological information

12.1 Toxicity

Product/ingredient name	Method	Species	Result	Exposure	References
Nitric acid, ammonium calcium salt					
	Acute LC50 Fresh water	Fish	447 mg/l	48 h	IUCLID 5
	OECD 202 Acute EC50 Fresh water	Daphnia	> 100 mg/l	48 h	CSR
	OECD 201 Acute LC50 Fresh water	Algae	> 100 mg/l	72 h	IUCLID 5
	OECD 209 Acute EC50 Activated sludge	Activated sludge	> 1,000 mg/l	3 h	CSR

Conclusion/Summary : The product does not show any bioaccumulation phenomena. The product is not expected to harm the environment when used properly according to directions.

12.2 Persistence and degradability

Conclusion/Summary : Readily biodegradable in plants and soils.

12.3 Bioaccumulative potential

Conclusion/Summary : No known significant effects or critical hazards.

12.4 Mobility in soil

Soil/water partition coefficient (KOC) : < 1

Mobility : This product may move with surface or groundwater flows because its water solubility is: high

12.5 Results of PBT and vPvB assessment

Product/ingredient name	PBT	P	B	T	vPvB	vP	vB
Nitric acid, ammonium calcium salt	Not applicable (Inorganic)	N/A	N/A	N/A	Not applicable (Inorganic)	N/A	N/A

12.6 Other adverse effects : No known significant effects or critical hazards.

SECTION 13: Disposal considerations

The information in this section contains generic advice and guidance. The list of Identified Uses in Section 1 should be consulted for any available use-specific information provided in the Exposure Scenario(s).

13.1 Waste treatment methods

Date of issue : 08.12.2020

Page:12/24

Product**Methods of disposal**

: The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction.

Hazardous waste

: Yes.

European waste catalogue (EWC)

Waste code	Waste designation
06 10 02*	wastes containing hazardous substances

Packaging**Methods of disposal**

: The generation of waste should be avoided or minimized wherever possible. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. Empty the bag by shaking to remove as much as possible of its contents. Empty bags may be disposed of as non-hazardous material or returned for recycling.

Special precautions

: This material and its container must be disposed of in a safe way.
Care should be taken when handling emptied containers that have not been cleaned or rinsed out.
Empty containers or liners may retain some product residues.
Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

SECTION 14: Transport information**Regulation: ADR/RID**

14.1 UN number	Not regulated.
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	No.
Additional information	

Regulation: ADN

14.1 UN number	Not regulated.
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	No.

Date of issue : 08.12.2020

Page:13/24

YaraTera CALCINIT

Additional information

Danger code : Not applicable.

Regulation: IMDG

14.1 UN number	Not regulated.
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	No.

Additional information

Marine pollutant : No.

Regulation: IATA

14.1 UN number	Not regulated.
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	No.

Additional information

Marine pollutant : No.

14.6 Special precautions for user : Transport within user's premises: Ensure that persons transporting the product know what to do in the event of an accident or spillage.

14.7 Transport in bulk according to IMO instruments : Not applicable.

14.8 IMSBC

Bulk cargo shipping name	: CALCIUM NITRATE FERTILIZER
Class	: Not applicable.
Group	: C
Marpol V	: Non-HME

SECTION 15: Regulatory information

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

EU Regulation (EC) No. 1907/2006 (REACH)

Annex XIV - List of substances subject to authorization

Annex XIV

None of the components are listed.

Substances of very high concern

None of the components are listed.

EU Regulation (EC) No. 1907/2006 (REACH) Annex XVII : Applicable, Table 65.

- Restrictions on the manufacture, placing on the market and use of certain

Date of issue : 08.12.2020

Page:14/24

**dangerous substances,
mixtures and articles**

Other EU regulations
Europe inventory

: All components are listed or exempted.

Ozone depleting substances (1005/2009/EU)
None of the components are listed.

Prior informed Consent (PIC) (649/2012/EU)
None of the components are listed.

Seveso Directive

This product is not controlled under the Seveso Directive.

Other regulations

: This product is regulated by Regulation (EU) 2019/1148: all suspicious transactions, and significant disappearances and thefts should be reported to the relevant national contact point. Please see https://ec.europa.eu/home-affairs/sites/homeaffairs/files/what-we-do/policies/crisis-and-terrorism/explosives/explosives-precursors/docs/list_of_competent_authorities_and_national_contact_points_en.pdf.

National regulations

Biocidal products regulation

: Not applicable.

Notes

: To our knowledge no other country or state specific regulations are applicable.

**15.2 Chemical Safety
Assessment**

: Complete.

SECTION 16: Other information

Abbreviations and acronyms

: ATE = Acute Toxicity Estimate
CLP = Classification, Labelling and Packaging Regulation [Regulation (EC) No. 1272/2008]
DNEL = Derived No Effect Level
DMEL = Derived Minimal Effect Level
EUH statement = CLP-specific Hazard statement
N/A = Not available
PNEC = Predicted No Effect Concentration
RRN = REACH Registration Number
SGG = Segregation Group
PBT = Persistent, Bioaccumulative and Toxic
vPvB = Very Persistent and Very Bioaccumulative
bw = Body weight

Key data sources

: EU REACH ECHA/IUCLID5 CSR.
National Institute for Occupational Safety and Health, U.S. Dept. of Health, Education, and Welfare, Reports and Memoranda Registry of Toxic Effects of Chemical

Substances.
Sphera Solutions Inc., 4777 Levy Street, St Laurent,
Quebec HAR 2P9, Canada.
Regulation (EC) No 1272/2008 Annex VI.

Procedure used to derive the classification according to Regulation (EC) No. 1272/2008 [CLP/GHS]

Classification	Justification
Acute Tox. 4, H302	Calculation method
Eye Dam. 1, H318	Calculation method

Full text of abbreviated H statements

H302	Harmful if swallowed.
H318	Causes serious eye damage.

Full text of classifications [CLP/GHS]

Acute Tox. 4	ACUTE TOXICITY oral - Category 4
Eye Dam. 1	SERIOUS EYE DAMAGE/ EYE IRRITATION - Category 1

Revision comments : The following sections contain new and updated information: 2, 15.

Date of printing : 08.02.2021
Date of issue/ Date of revision : 08.12.2020
Date of previous issue : 18.09.2019
Version : 6.0
Prepared by : Yara Chemical Compliance (YCC).

|| Indicates information that has changed from previously issued version.

Notice to reader

To the best of our knowledge, the information provided in this Safety Data Sheet is accurate as at the date of its issue. The information it contains is being given for safety guidance purposes and relates only to the specific material and uses described in it. This information does not necessarily apply to that material when combined with other material(s) or when used otherwise than as described herein, since all materials may represent unknown hazards and should be used with caution. Final determination of the suitability of any material is the sole responsibility of the user.