Triad

According to REACH Regulation (EC) No 1907/2006, as amended by UK REACH Regulations SI 2019/758 and SI 2020/1577

SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1 Product identifier

Product Name	Triad (Contains: manganese sulphate, Zinc Sulphate, copper sulphate)
Trade Name	Triad

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

Identified Use(s)	Fertiliser
Uses Advised Against	Not known.

1.3 Details of the supplier of the safety data sheet

Manufacturer	
Company Identification	AIVA LTD (Aiva Fertiliser)
Address of Manufacturer	Old Farm Offices Manor Farm, Ginge, Oxfordshire, United Kingdom
Postal code	OX12 8QS
Telephone:	01234 834 997
Fax	Not known.
E-mail	office@aivafertiliser.co.uk
Office hours	Office hours: Monday - Friday 0830 - 1700
Supplier	
Company Identification	AIVA LTD (Aiva Fertiliser)
Address of Supplier	Old Farm Offices Manor Farm, Ginge, Oxfordshire, United Kingdom
Postal code	OX12 8QS
Telephone:	01234 834 997
Fax	Not known.
E-mail	office@aivafertiliser.co.uk
Office hours	Office hours: Monday - Friday 0830 - 1700

1.4 Emergency telephone number

Emergency Phone No.	01235834997
Contact	Call 111
National response centre	
Address	NHS Direct
Emergency Phone No.	+44 111

SECTION 2: HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

GB CLP Regulation, UK SI 2019/720 and UK SI 2020/1567	Eye Dam. 1 :Causes serious eye damage. STOT RE 2 :May cause damage to organs through prolonged or repeated exposure. Aquatic Acute 1 :Very toxic to aquatic life. Aquatic Chronic 2 :Toxic to aquatic life with long lasting effects.

2.2 Label elements

According to GB CLP Regulations, UK SI 2019/720 and UK SI 2020/1567

Product Name	Triad (Contains: manganese sulphate, Zinc Sulphate, copper sulphate)
Hazard Pictogram(s)	 GHS05  GHS08  GHS09
Signal Word(s)	Danger
Hazard Statement(s)	H318: Causes serious eye damage. H373: May cause damage to organs through prolonged or repeated exposure.

Triad

H410: Very toxic to aquatic life with long lasting effects.

Precautionary Statement(s)

P101: If medical advice is needed, have product container or label at hand.
P102: Keep out of reach of children.
P103: Read carefully and follow all instructions.
P260: Do not breathe dust/fume/gas/mist/vapours/spray.
P273: Avoid release to the environment.
P280: Wear protective gloves/protective clothing/eye protection/face protection.
P305+P351+P338+P310: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTRE/doctor.
P314: Get medical advice/attention if you feel unwell.
P391: Collect spillage.
P501: Dispose of contents in accordance with local, state or national legislation.

2.3 Other hazards

None known.

2.4 Additional Information

For full text of H/P Statements see section 16.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances

Not applicable.

3.2 Mixtures

HAZARDOUS INGREDIENT(S)	CAS No.	EC No. / Registration number(s)	%W/W	Hazard Statement(s)	Hazard Pictogram(s)
manganese sulphate	7785-87-7	232-089-9	<20	Eye Dam. 1 H318 STOT RE 2 H373 Aquatic Chronic 2 H411	GHS05 GHS08 GHS09
Zinc Sulphate	7733-02-0	231-793-3	<10	Acute Tox. 4 H302 Eye Dam. 1 H318 Aquatic Acute 1 H400 Aquatic Chronic 1 H410	GHS05 GHS07 GHS09
Urea	57-13-6	200-315-5	<10	Not classified.	None
copper sulphate	7758-98-7	231-847-6	<10	Acute Tox. 4 H302 Eye Dam. 1 H318 Aquatic Acute 1 H400 Aquatic Chronic 1 H410	GHS05 GHS07 GHS09
Citric acid	77-92-9	201-069-1	<2	Eye Irrit. 2 H319	GHS07

For full text of H/P Statements see section 16.

SECTION 4: FIRST AID MEASURES

4.1 Description of first aid measures

Inhalation: Get medical advice/attention if you feel unwell.
Skin Contact: Get medical advice/attention if you feel unwell.
Eye Contact: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTRE/doctor.
Ingestion: Get medical advice/attention if you feel unwell.

4.2 Most important symptoms and effects, both acute and delayed

Causes burns.

4.3 Indication of any immediate medical attention and special treatment needed

Get medical advice/attention if you feel unwell. If medical advice is needed, have product container or label at hand. Treat symptomatically.

SECTION 5: FIREFIGHTING MEASURES

Triad

5.1 Extinguishing media

Suitable Extinguishing media	As appropriate for surrounding fire.
Unsuitable extinguishing media	None.

5.2 Special hazards arising from the substance or mixture

May decompose in a fire, giving off toxic and irritant vapours.

5.3 Advice for firefighters

Fire fighters should wear complete protective clothing including self-contained breathing apparatus. Dike fire control water for later disposal.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

Provide adequate ventilation. Wear suitable protective clothing, gloves and eye/face protection.

6.2 Environmental precautions

Avoid release to the environment. Spillages or uncontrolled discharges into watercourses must be alerted to the appropriate regulatory body.

6.3 Methods and material for containment and cleaning up

Collect spillage. Adsorb spillages onto sand, earth or any suitable adsorbent material. Contain spillages with sand, earth or any suitable adsorbent material. Earth may be shovelled to contain spillage and to avoid contamination of sewers and watercourses.

6.4 Reference to other sections

See Also Section 8, 13.

SECTION 7: HANDLING AND STORAGE

7.1 Precautions for safe handling

Read carefully and follow all instructions. Do not breathe dust/fume/gas/mist/vapours/spray. Wear protective gloves/protective clothing/eye protection/face protection.

7.2 Conditions for safe storage, including any incompatibilities

Keep out of reach of children.

Storage temperature	Ambient.
Storage life	Stable under normal conditions.
Incompatible materials	None known.

7.3 Specific end use(s)

Fertiliser

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

8.1.1 Occupational Exposure Limits

Occupational Exposure Limits						
SUBSTANCE.	CAS No.	LTEL (8 hr TWA ppm)	LTEL (8 hr TWA mg/m³)	STEL (ppm)	STEL (mg/m³)	Note
Manganese and its inorganic compounds (as Mn) - Inhalable fraction	7785-87-7		0.2			
Manganese and its inorganic compounds (as Mn) - Respirable fraction	7785-87-7		0.05			
Copper and compounds: dust and mists (as Cu)	7758-98-7		1		2	

Region	Source
United Kingdom	UK Workplace Exposure Limits EH40/2005 (Fourth edition, published 2020)

Remark	Notes

8.2 Exposure controls

8.2.1. Appropriate engineering controls	Use with ventilation, local exhaust ventilation or breathing protection. A washing facility/water for eye and skin cleaning purposes should be present.

8.2.2. Personal protection equipment

Triad



Eye Protection — Wear eye protection with side protection (EN ISO 16321-1).



Skin protection — Wear protective clothing and gloves: Impervious gloves (EN 374). Breakthrough time of the glove material: refer to the information provided by the gloves' producer.



Respiratory protection — A suitable mask with filter type A (EN14387 or EN405) may be appropriate.



Thermal hazards — None known.

8.2.3. Environmental Exposure Controls — Spillages or uncontrolled discharges into watercourses must be alerted to the appropriate regulatory body.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

Appearance	Liquid. Colour : Not known.
Odour	Not known.
Odour threshold	Not known.
pH	< 2.8.
Melting point/freezing point	Not known.
Initial boiling point and boiling range	Not known.
Flash Point	Not known.
Evaporation rate	Not known.
Flammability (solid, gas)	Not known.
Upper/lower flammability or explosive limits	Not known.
Vapour pressure	Not known.
Vapour density	Not known.
Density (g/ml)	Not known.
Relative density	Not known.
Solubility(ies)	Solubility (Water) : Not known. Solubility (Other) : Not known.
Partition coefficient: n-octanol/water	Not known.
Auto-ignition temperature	Not known.
Decomposition Temperature (°C)	Not known.
Viscosity	Not known.
Explosive properties	Not known.
Oxidising properties	Not known.

9.2 Other information

None.

SECTION 10: STABILITY AND REACTIVITY

10.1 Reactivity

None anticipated.

10.2 Chemical Stability

Stable under normal conditions.

10.3 Possibility of hazardous reactions

No hazardous reactions known if used for its intended purpose.

10.4 Conditions to avoid

None anticipated.

10.5 Incompatible materials

Not known.

10.6 Hazardous decomposition products

No hazardous decomposition products known.

Triad

SECTION 11: TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute toxicity - Ingestion	Calculation method : Not classified. Calculation method : Calculated acute toxicity estimate (ATE) Calc ATE - 4000
Acute toxicity - Skin Contact	Calculation method : Not classified.
Acute toxicity - Inhalation	Calculation method : Not classified.
Skin corrosion/irritation	Calculation method : Not classified.
Serious eye damage/irritation	Calculation method : Causes serious eye damage.
Skin sensitization data	Calculation method : Not classified.
Respiratory sensitization data	Calculation method : Not classified.
Germ cell mutagenicity	Calculation method : Not classified.
Carcinogenicity	Calculation method : Not classified.
Reproductive toxicity	Calculation method : Not classified.
Lactation	Calculation method : Not classified.
STOT - single exposure	Calculation method : Not classified.
STOT - repeated exposure	Calculation method : May cause damage to organs through prolonged or repeated exposure.
Aspiration hazard	Calculation method : Not classified.

11.2 Other information

Not known.

SECTION 12: ECOLOGICAL INFORMATION

12.1 Toxicity

Very toxic to aquatic life with long lasting effects.

Toxicity - Aquatic invertebrates	Not known.
Toxicity - Fish	Not known.
Toxicity - Algae	Not known.
Toxicity - Sediment Compartment	Not classified.
Toxicity - Terrestrial Compartment	Not classified.

12.2 Persistence and degradability

Not known.

12.3 Bioaccumulative potential

Not known.

12.4 Mobility in soil

Not known.

12.5 Results of PBT and vPvB assessment

Not known.

12.6 Other adverse effects

None known.

SECTION 13: DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Dispose of contents in accordance with local, state or national legislation. Send to a licensed recycler, reclaimer or incinerator. Dispose of this material and its container to hazardous or special waste collection point. Dispose at suitable refuse site.

13.2 Additional Information

Disposal should be in accordance with local, state or national legislation.

SECTION 14: TRANSPORT INFORMATION

14.1 UN number

UN No. 3082

14.2 UN proper shipping name

UN proper shipping name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (MANGANESE SULPHATE)

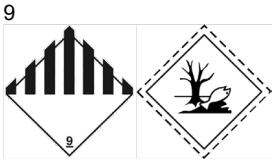
14.3 Transport hazard class(es)

ADR/RID

ADR/RID Class	9
ADR Classification Code	M6
Special Provisions	274 335 375 601
Limited Quantities	5 L
Excepted Quantities	E1

Triad

Emergency Action Code	•3Z
Packing Instructions for Packages	P001 IBC03 LP01 R001
Special Packing Provisions for Packages	PP1
Mixed Packing Instructions for Packages	MP19
Instructions for Portable Tanks	T4
Special Provisions for Portable Tanks	TP1 TP29
Tank Code for Tanks	LGBV
Special Provisions for Tanks	
Vehicle for Tank Carriage	AT
ADR Transport Category	3
Tunnel Restriction Code	-
Special Provisions for Carriage - Packages	V12
Special Provisions for Carriage - Bulk	
Special Provisions for Carriage - Loading, Unloading and Handling	CV13
Special Provisions for Carriage - Operation	
ADR HIN	90
IMDG	
IMDG Class	9
Special Provisions	274 335 969
Limited Quantities	5 L
Excepted Quantities	E1
Mixed Packing Instructions for Packages	P001 LP01 IBC03
Special Packing Provisions for Packages	PP1
Instructions for Portable Tanks	T4
Special Provisions for Portable Tanks	TP1 TP29
IMDG EMS	F-A S-F
Stowage and Handling	Category A
Segregation	
Marine Pollutant	
ICAO/IATA	
ICAO/IATA Class	9
Excepted Quantities	E1
Passenger and Cargo Aircraft Limited Quantities Packing Instructions	Y964
Passenger and Cargo Aircraft Limited Quantities Max net Qty	30Kg G
Passenger and Cargo Aircraft Packing Instructions	964
Passenger and Cargo Aircraft Max net Qty	450L
Cargo Aircraft Packing Instructions	964
Cargo Aircraft Max net Qty	450L
Special Provisions	A97, A158, A197, A215
Emergency Response Guidebook (ERG) Code	9L
Labels	
Labels	9



14.4 Packing group

Packing group III

14.5 Environmental hazards

Environmental hazards ADR/RID: Environmentally Hazardous
IMDG: Marine Pollutant

14.6 Special precautions for user

Special precautions for user Not known.

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

No information available

SECTION 15: REGULATORY INFORMATION

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

United Kingdom Regulations - Authorisations and/or Restrictions On Use

Triad

UK REACH Candidate List of Substances of Very High Concern for Authorisation	Not listed
UK REACH Authorisation List (Annex XIV) list of substances subject to authorisation	Not listed
UK REACH Restrictions List (Annex XVII) Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles	manganese sulphate (7785-87-7), copper sulphate (7758-98-7), Zinc Sulphate (7733-02-0), Citric acid (77-92-9)
UK REACH Rolling Action Plan (RAP)	Not listed
Persistent Organic Pollutants (Various Amendments) Regulations 2019 (SI 2019/1099)	Not listed
The Ozone-Depleting Substances and Fluorinated Greenhouse Gases (Amendment etc.) (EU Exit) Regulations 2019 (SI 2019/583)	Not listed
The Prior Informed Consent (PIC) Regulations concerning the export and import of hazardous chemicals SI2008/2108 as amended	Not listed
European Regulations - Authorisations and/or Restrictions On Use	
Community Rolling Action Plan (CoRAP)	Not listed
Seveso Directive	Code E1: Lower Tier Quantity 100 - Upper Tier Quantity 200 Code E2: Lower Tier Quantity 200 - Upper Tier Quantity 500

15.2 Chemical Safety Assessment

United Kingdom	A REACH chemical safety assessment has not been carried out.

SECTION 16: OTHER INFORMATION

The following sections contain revisions or new statements:

LEGEND

Hazard Pictogram(s)


GHS05


GHS08


GHS09

GHS07: GHS: Exclamation mark

Hazard classification

Acute Tox. 4 : Acute toxicity, Category 4
Eye Dam. 1 : Serious eye damage/irritation, Category 1
Eye Irrit. 2 : Serious eye damage/irritation, Category 2
STOT RE 2 : Specific target organ toxicity — repeated exposure, Category 2
Aquatic Acute 1 : Hazardous to the aquatic environment, Acute, Category 1
Aquatic Chronic 1 : Hazardous to the aquatic environment, Chronic, Category 1
Aquatic Chronic 2 : Hazardous to the aquatic environment, Chronic, Category 2

Hazard Statement(s)

H302: Harmful if swallowed.
H318: Causes serious eye damage.
H319: Causes serious eye irritation.
H373: May cause damage to organs through prolonged or repeated exposure.
H400: Very toxic to aquatic life.
H410: Very toxic to aquatic life with long lasting effects.
H411: Toxic to aquatic life with long lasting effects.

Precautionary Statement(s)

P101: If medical advice is needed, have product container or label at hand.
P102: Keep out of reach of children.
P103: Read carefully and follow all instructions.

Triad

	P260: Do not breathe dust/fume/gas/mist/vapours/spray. P273: Avoid release to the environment. P280: Wear protective gloves/protective clothing/eye protection/face protection. P305+P351+P338+P310: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTRE/doctor. P314: Get medical advice/attention if you feel unwell. P391: Collect spillage. P501: Dispose of contents in accordance with local, state or national legislation.
Acronyms	ADN : European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways ADR : European Agreement concerning the International Carriage of Dangerous Goods by Road ATE : Acute Toxicity Estimate CAS : Chemical Abstracts Service DNEL : Derived No Effect Level EC : European Community EINECS : European Inventory of Existing Commercial Chemical Substances IATA : International Air Transport Association IBC : Intermediate Bulk Container ICAO : International Civil Aviation Organization IMDG : International Maritime Dangerous Goods LTEL : Long term exposure limit PBT : Persistent, Bioaccumulative and Toxic PNEC : Predicted No Effect Concentration REACH : Registration, Evaluation, Authorisation and Restriction of Chemicals RID : Regulations concerning the International Carriage of Dangerous Goods by Rail STEL : Short term exposure limit STOT : Specific Target Organ Toxicity UN : United Nations vPvB : very Persistent and very Bioaccumulative
Key literature references and sources for data used to compile the SDS	GB CLP Regulation, UK SI 2019/720 and UK SI 2020/1567
Training Advice	Regular safety training as appropriate
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