SAFETY DATA SHEET

Jett

This safety data sheet complies with the requirements of:
Regulation (EC) No. 453/2010 and Regulation (EC) No. 1272/2008

SDS # : NP-0008-2A-A
Revision date: 2018-07-20
Format: EU
Version 1.01

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

Product Code(s) NP-0008-2A-A

Legacy Product Code UK0008

Product Name Jett

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

Recommended Use: A soluble micronutrient for use in agriculture

Restrictions on use Use as recommended by the label.

1.3. Details of the supplier of the safety data sheet

Manufacturer

FMC Agro Limited
Rectors Lane
Pentre
Flintshire
CH5 2DH
United Kingdom
Tel: + 44 1244 537370
E-mail: fmc.agro.uk@fmc.com

For further information, please contact:

Contact point

Tel: +44 1244 537370
Email: fmc.agro.uk@fmc.com

1.4. Emergency telephone number

Emergency telephone Tel: +44 1244 537370 (Office hours only)

Section 2: HAZARDS IDENTIFICATION

2.1. Classification of the substance or mixture *Regulation (EC) No 1272/2008*

Acute toxicity - Oral	Category 4
Skin corrosion/irritation	Category 1 Sub-category C
Specific target organ toxicity — repeated exposure	Category 2
Chronic aquatic toxicity	Category 3

2.2. Label elements

Hazard pictograms

Signal Word
Danger

Hazard Statements
H302 - Harmful if swallowed
H314 - Causes severe skin burns and eye damage
H373 - May cause damage to organs through prolonged or repeated exposure
H412 - Harmful to aquatic life with long lasting effects

Precautionary Statements
P260 - Do not breathe spray
P280 - Wear protective gloves/protective clothing/eye protection/face protection
P301 + P310 - IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician
P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
P314 - Get medical advice/attention if you feel unwell

2.3. Other hazards
This product is not identified as a PBT/vPvB substance.

Section 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances

Chemical name	EC-No	CAS-No	Weight percent	Classification according to Regulation (EC) No. 1272/2008 [CLP]	REACH registration number
MANGANESE DINITRATE	Present	10377-66-9	30-50	Ox. Sol. 2 (H272); Acute Tox. 4 (H302); Skin Corr. 1C (H314); STOT RE 2 (H373); Aquatic Chronic 3 (H412); (EUH071)	01-2119487993-17-0002
Nitric acid	Present	7697-37-2	<1	Acute Tox. 3 (H331) Skin Corr. 1A (H314) Met. Corr. 1 (H290)	01-2119487297-23-XXXX

Section 4: FIRST AID MEASURES

4.1. Description of first aid measures

Eye Contact Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.

Skin Contact Remove contaminated clothing and shoes. Do not remove clothing if adhering to skin. Rinse skin immediately with plenty of water for 15-20 minutes. Transfer to hospital if there are burns or symptoms of poisoning.

Inhalation Remove person from exposure ensuring one's own safety while doing so. If unconscious and breathing is OK, place in the recovery position. If conscious, ensure the casualty sits or lies down. If breathing becomes bubbly, have the casualty sit and provide oxygen if available. Transfer to hospital as soon as possible.

Ingestion Rinse mouth. Do NOT induce vomiting. Give 1 cup of water to drink every 10 minutes. If unconscious, check for breathing and apply artificial respiration if necessary. If

unconscious and breathing is OK, place in the recovery position. Transfer to hospital as soon as possible.

4.2. Most important symptoms and effects, both acute and delayed

Most important symptoms and effects, both acute and delayed

Skin contact: Severe burns may occur. Progressive ulceration will occur if treatment is not immediate.

Eye contact: Corneal burns may occur. May cause permanent damage.

Ingestion: Corrosive burns may appear around the lips. Blood may be vomited. There may be difficulty swallowing.

Inhalation: There may be shortness of breath with a burning sensation in the throat. Exposure may cause coughing or wheezing.

Delayed / immediate effects: Immediate effects can be expected after short-term exposure.

4.3. Indication of any immediate medical attention and special treatment needed

Indication of immediate medical attention and special treatment needed, if necessary

Eye bathing equipment should be available on the premises.

Section 5: FIREFIGHTING MEASURES

5.1. Extinguishing media

Suitable Extinguishing Media
Use extinguishing measures that are appropriate to local circumstances and the surrounding environment. Using spraywater to cool the containers.

Unsuitable extinguishing media
None known

5.2. Special hazards arising from the substance or mixture
Corrosive. Thermal decomposition can lead to release of toxic and corrosive gases/vapours.

5.3. Advice for firefighters
As in any fire, wear self-contained breathing apparatus and full protective gear. Wear protective clothing to prevent contact with skin and eyes.

Section 6: ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures

Personal Precautions
In case of spill, avoid contact. Isolate area and keep out animals and unprotected persons. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Stop leak if you can do it without risk.

.

For emergency responders
Use personal protection recommended in Section 8.

6.2. Environmental precautions
Keep people and animals away from and upwind of spill/leak. Keep material out of lakes, streams, ponds, and sewer drains. Keep out of waterways. Contain the spillage using bunding.

6.3. Methods and material for containment and cleaning up

Methods for Containment

Prevent further leakage or spillage if safe to do so. Absorb with earth, sand or other

non-combustible material and transfer to containers for later disposal.

Methods for cleaning up Clean-up should be dealt with only by qualified personnel familiar with the specific substance. Contain and collect spillage with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local/national regulations (see Section 13). Prevent product from entering drains.

6.4. Reference to other sections

See section 8 for more information. See section 13 for more information.

Section 7: HANDLING AND STORAGE

7.1. Precautions for safe handling

Handling
Avoid contact with skin, eyes and clothing. Ensure adequate ventilation. Do not handle in a confined space. Avoid the formation or spread of mists in the air.

Hygiene measures
Handle in accordance with good industrial hygiene and safety practice.

7.2. Conditions for safe storage, including any incompatibilities

Storage
Keep containers tightly closed in a dry, cool and well-ventilated place. Store above 5°C.

Packageing material Must only be kept in original packaging.

7.3. Specific end use(s)

Specific Use(s)
No data available.

Risk Management Methods (RMM)
The information required is contained in this Safety Data Sheet.

Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Control parameters

Chemical name	European Union	The United Kingdom	France	Spain	Germany
Nitric acid 7697-37-2	STEL 1 ppm STEL 2.6 mg/m³	STEL 1 ppm STEL 2.6 mg/m³	STEL 1 ppm STEL 2.6 mg/m³	STEL 1 ppm STEL 2.6 mg/m³	-
Chemical name	**Italy**	**Portugal**	**The Netherlands**	**Finland**	**Denmark**
Nitric acid 7697-37-2	STEL 1 ppm STEL 2.6 mg/m³	TWA 2 ppm STEL 4 ppm	STEL 1.3 mg/m³	TWA 0.5 ppm TWA 1.3 mg/m³ STEL 1 ppm STEL 2.6 mg/m³	STEL 1 ppm STEL 2.6 mg/m³
Chemical name	**Austria**	**Switzerland**	**Poland**	**Norway**	**Ireland**
Nitric acid 7697-37-2	STEL 1 ppm STEL 2.6 mg/m³	TWA 2 ppm TWA 5 mg/m³ STEL 2 ppm STEL 5 mg/m³	TWA 1.4 mg/m³ STEL 2.6 mg/m³	TWA 2 ppm TWA 5 mg/m³ STEL 4 ppm STEL 10 mg/m³	STEL 1 ppm STEL 2.6 mg/m³

Derived No Effect Level (DNEL) No information available.

Predicted No Effect Concentration (PNEC) No information available.

8.2. Exposure controls

Engineering measures Ensure adequate ventilation, especially in confined areas.

Personal protective equipment

Eye/Face Protection	Tightly fitting safety goggles. Maintain eye wash fountain and quick-drench facilities in work area.
Hand Protection	PVC gloves. Gloves (acid resistant).
Skin and Body Protection	Wear impervious gloves and/or clothing if needed to prevent contact with the material.
Respiratory Protection	Not required under normal use.
Environmental exposure controls	No special environmental precautions required.

Section 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

Physical State	Liquid
Appearance	No information available
Odour	Barely perceptible
Colour	Red brown
Odour threshold	No information available
pH	<2
Melting point/freezing point	No information available
Boiling point/boiling range	No information available
Flash point	No information available
Evaporation Rate	No information available
Flammability (solid, gas)	
Flammability Limit in Air	
Upper flammability limit:	No information available
Lower flammability limit	No information available
Vapour pressure	No information available
Vapour density	No information available
Specific gravity	~ 1.47
Water solubility	Soluble in water
Solubility in other solvents	No information available
Partition coefficient	No information available
Autoignition temperature	No information available
Decomposition temperature	No information available
Viscosity, kinematic	No information available
Viscosity, dynamic	No information available
Explosive properties	No information available
Oxidising properties	No information available

9.2. Other information

Softening point	No information available
Molecular weight	No information available
VOC content (%)	No information available
Density	No information available
Bulk density	No information available
K_{st}	No information available

Section 10: STABILITY AND REACTIVITY

10.1. Reactivity

Stable under recommended storage conditions

10.2. Chemical stability

Stable under recommended storage conditions.

Explosion data

Sensitivity to Mechanical Impact	No information available.
Sensitivity to Static Discharge	No information available.

10.3. Possibility of hazardous reactions

Hazardous polymerisation
None under normal processing.

Hazardous reactions
None under normal processing. Decomposition may occur on exposure to conditions or materials listed below.

10.4. Conditions to avoid

Heat.

10.5. Incompatible materials

Strong reducing agents. Bases.

10.6. Hazardous decomposition products

May emit toxic fumes under fire conditions.

Section 11: TOXICOLOGICAL INFORMATION

11.1. Information on toxicological effects

Acute toxicity

Product Information
.

Product is harmful by ingestion.

Product is harmful by inhalation.

This product is corrosive to living tissue.

Chemical name	LD50 Oral	LD50 Dermal	Inhalation LC50
MANGANESE DINITRATE	>300 mg/kg (rat)		
Nitric acid			= 130 mg/m³ (Rat) 4 h = 2500 ppm (Rat) 1 h

Skin corrosion/irritation No information available.
Serious eye damage/eye irritation No information available.
Sensitisation No information available
Mutagenicity No information available.
Carcinogenicity No information available.

Reproductive toxicity No information available.
STOT - single exposure No information available.
STOT - repeated exposure No information available.

Symptoms Skin contact: Severe burns may occur. Progressive ulceration will occur if treatment is not immediate.

Eye contact: Corneal burns may occur. May cause permanent damage.

Ingestion: Corrosive burns may appear around the lips. Blood may be vomited. There may be difficulty swallowing.

Inhalation: There may be shortness of breath with a burning sensation in the throat. Exposure may cause coughing or wheezing.

Delayed / immediate effects: Immediate effects can be expected after short-term exposure.

Aspiration hazard No information available.

Section 12: ECOLOGICAL INFORMATION

12.1. Toxicity

There is no data available for this product.

Chemical name	Toxicity to algae	Toxicity to fish	Toxicity to daphnia and other aquatic invertebrates
MANGANESE DINITRATE	Desmodesmus subspicatus: 72 ErC50 = 64.6 mg/L	Rainbow trout (Oncorhynchus mykiss): 96H LC50 = 47.2 mg/L	Daphnia magna: 48H EC50 = >100 mg/L
Nitric acid	-	96 h LC50: = 72 mg/L (Gambusia affinis)	-

12.2. Persistence and degradability

No information available.

12.3. Bioaccumulative potential

No information available.

Chemical name	Partition coefficient
Nitric acid	-2.3

12.4. Mobility in soil

Mobility in soil
After release, adsorbs onto soil.

Mobility
Readily absorbed to soil.

12.5. Results of PBT and vPvB assessment

This product is not identified as a PBT/vPvB substance.

12.6. Other adverse effects

Harmful to aquatic life.

Section 13: DISPOSAL CONSIDERATIONS

13.1. Waste treatment methods

Waste from residues / unused products Transfer to a suitable container and arrange for collection by specialised disposal company. Do not contaminate ponds, waterways or ditches with chemical or used containers. Do not discharge to sewer systems.

Contaminated Packaging Dispose of in accordance with federal, state and local regulations.

OTHER INFORMATION NOTE : The user's attention is drawn to the possible existence of specific European, national or local regulations regarding disposal.

Section 14: TRANSPORT INFORMATION

IMDG/IMO

14.1 UN/ID no	UN3264
14.2 Proper Shipping Name	Corrosive liquid, acidic, inorganic, n.o.s. (Manganese dinitrate)
14.3 Hazard class	8
14.4 Packing Group	III
14.5 Marine Pollutant	Not applicable
14.6 Special Provisions	No special precautions. Tunnel code: E Transport category: 3
14.7 Transport in bulk according to Annex II of MARPOL and the IBC Code	This product is not transported in bulk containers.

RID

14.1 UN/ID no	UN3264
14.2 Proper Shipping Name	Corrosive liquid, acidic, inorganic, n.o.s. (Manganese dinitrate)
14.3 Hazard class	8
14.4 Packing Group	III
14.5 Environmental Hazard	Not applicable
14.6 Special Provisions	No special precautions. Tunnel code: E Transport category: 3

ADR/RID

14.1 UN/ID no	UN3264
14.2 Proper Shipping Name	Corrosive liquid, acidic, inorganic, n.o.s. (Manganese dinitrate)
14.3 Hazard class	8
14.4 Packing Group	III
14.5 Environmental Hazard	Not applicable
14.6 Special Provisions	No special precautions. Tunnel code: E Transport category: 3

ICAO/IATA

14.1 UN/ID no	UN3264
14.2 Proper Shipping Name	Corrosive liquid, acidic, inorganic, n.o.s. (Manganese dinitrate)
14.3 Hazard class	8
14.4 Packing Group	III
14.5 Environmental Hazard	Not applicable
14.6 Special Provisions	No special precautions. Tunnel code: E Transport category: 3

Section 15: REGULATORY INFORMATION

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

European Union

Authorisations and/or restrictions on use:
This product does not contain substances subject to authorisation (Regulation (EC) No. 1907/2006 (REACH), Annex XIV)
This product does not contain substances subject to restriction (Regulation (EC) No. 1907/2006 (REACH), Annex XVII)

Persistent Organic Pollutants

Not Applicable

Ozone-depleting substances (ODS) regulation (EC) 1005/2009
Not Applicable

International Inventories

Chemical name	TSCA (United States)	DSL (Canada)	EINECS/ELINCS (Europe)	ENCS (Japan)	China (IECSC)	KECL (Korea)	PICCS (Philippines)	AICS (Australia)
MANGANESE DINITRATE 10377-66-9	X	X	X	X	X	X	X	X
Nitric acid 7697-37-2	X	X	X	X	X	X	X	X

15.2. Chemical safety assessment

A Chemical Safety Assessment has not yet been completed for this substance.

Section 16: OTHER INFORMATION

Key or legend to abbreviations and acronyms used in the safety data sheet

Full text of H-Statements referred to under sections 2 and 3
EUH071 - Corrosive to the respiratory tract
H272 - May intensify fire; oxidiser
H302 - Harmful if swallowed
H314 - Causes severe skin burns and eye damage
H373 - May cause damage to organs through prolonged or repeated exposure
H412 - Harmful to aquatic life with long lasting effects

Legend

ADR:	European Agreement concerning the International Carriage of Dangerous Goods by Road
CAS:	CAS (Chemical Abstracts Service)
Ceiling:	Maximum limit value:
DNEL:	Derived No Effect Level (DNEL)
EINECS:	EINECS (European Inventory of Existing Chemical Substances)
GHS:	Globally Harmonised System (GHS)
IATA:	International Air Transport Association (IATA)
ICAO:	International Civil Aviation Organization
IMDG:	International Maritime Dangerous Goods (IMDG)
LC50:	LC50 (lethal concentration)
LD50:	LD50 (lethal dose)
PBT:	Persistent, Bioaccumulative, and Toxic (PBT) Chemicals
RID:	Regulations Concerning the International Transport of Dangerous Goods by Rail
STEL:	Short term exposure limit
SVHC	SVHC: Substances of Very High Concern for Authorisation:
TWA:	time weighted average
vPvB:	very Persistent and very Bioaccumulative
Revision date:	2018-07-20
Reason for revision:	(M)SDS sections updated.

Disclaimer
The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. This company shall not be held liable for any damage resulting from handling or from contact with the above product.

Prepared By

FMC Corporation

End of Safety Data Sheet