



According to EC Regulations No. 453/2010 (REACH), 1272/2008 (CLP) & 453/2010

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

1.1. Product identifier

Trade name ELONA
Product code LEV2017-NPD008
REACH registration No. Not applicable

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

Identified use(s) Use as a foliar fertiliser concentrate for cereal crops

Uses advised against Not suitable for use as a ready to use product

1.3. Details of the supplier of the safety data sheet

Supplier name: Leivity Crop Science Ltd
Supplier address: Leivity Crop Science Ltd
The Rural Business Centre
Myerscough College
Bilsborrow
United Kingdom
PR3 0RY

Supplier telephone: +44 (0) 1995 642351
Email: info@leivitycropscience.com

1.4. Emergency telephone number

Emergency phone No. +44 (0) 1995 642351 (GMT English spoken, Mon-Fri – 08:00 – 17:00)

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

2.1.1. Regulation (EC) No.1272/2008 (CLP) Skin corrosion (Category 1)
Serious eye damage (Category 1)
Specific target organ toxicity after repeated exposure (Category 2)
Chronic aquatic toxicity (Category 3)

2.2. Label elements

Labelling according Regulation (EC) No 1272/2008 [CLP]



CLP Hazard Pictograms:

Signal Word(s): Danger

Hazard Statements:



EU Safety Data Sheet

Version 1.0
Updated: 12.03.2018

H314 Causes severe skin burns and eye damage
H373 May cause damage to organs (brain) through prolonged or repeated exposure (by inhalation)
H412 Harmful to aquatic life with long lasting effects

Precautionary Statements:

P280 Wear skin and eye protection
P301 + P330 + P331 IF SWALLOWED: Rinse mouth. DO NOT induce vomiting
P303 + P361 + P353 IF ON SKIN (or hair): Remove immediately all contaminated clothing. Rinse skin with water/shower
P304 + P340 IF INHALED: Remove victims to fresh air and keep at rest in a position comfortable for breathing
P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do. Continue rinsing.
P501 Dispose of contents in accordance with local regulations, dispose of container to appropriate domestic recycling stream

2.3. Other hazards This product has not been tested for PBT or vPvB

SECTION 3: Composition/information on ingredients

3.2. Mixtures

EC Classification No 1272/2008

Hazardous ingredient(s)	%w/w	CAS no	EC no	REACH Registration no	Hazard statements
Manganese nitrate anhydrous	10 - <25	10377-66-9	233-828-8	01-2119487993-17-0003	H272, H302, H314, H373, H412
Zinc chloride anhydrous	0 - <1	7646-85-7	231-592-0	01-2119472431-44-####	H302, H314, H410, C _≥ 5% H335

SECTION 4: First aid measures

4.1. Description of first aid measures

4.1.1. First aid instructions.

If inhaled: Move person into fresh air, rest in a position comfortable for breathing and seek medical attention if breathing becomes difficult

If on skin (or hair): Wash affected skin with soap and water, care should be taken when cleansing skin that is burned or damaged to prevent further damage. Wash clothes before reuse

If in eyes: Wash affected eyes for at least 15 minutes under running water with eyelids held open. Remove contact lenses if possible. Seek medical advice

If swallowed: Never give anything by mouth to an unconscious person. Rinse mouth and throat. Do not induce vomiting. Drink 1-2 glasses of water. Consult a physician

Other first aid advice: If vomiting occurs spontaneously, keep airways clear. Give more water when vomiting stops



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

If inhaled:	Inhalation of mist or vapours may cause irritation and a burning sensation to mucous membranes and upper respiratory tract. Symptoms may include irritation, coughing and tightness of breath
If on skin (or hair):	Exposure will quickly cause redness and soreness, if left unwashed skin burns can occur, especially to already dry or damaged skin.
If in eyes:	Exposure to eyes will result in immediate pain and tearing. Burns to the eyes will likely occur if not washed immediately
If swallowed:	Ingestion can cause burns to the mouth, throat and gastrointestinal tract. Other effects of ingestion may include headaches, dizziness, tremors, mental state changes, vomiting and diarrhoea. Chronic exposure can cause adverse effects to neurotoxicity with symptoms that resemble Parkinson's disease. Nitrate ingestion can lead to an increased risk of methemoglobinemia, which can cause fatigue and shortness of breath, severe reactions may lead to hospitalisation

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

Medical treatment:	Management of chemical burns and removal from exposure source should be immediate priority of first aid response. EDTA chelation treatment may decrease the body burden of copper, zinc and manganese. Intravenous methylene blue treatment may be indicated to treat methemoglobinemia. Treatment regime should only be determined and administered by a medical professional
--------------------	--

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media:	All extinguishing agents permitted
Unsuitable extinguishing media:	None known

5.2. Special hazards arising from the substance or mixture

Hazardous combustion products:	Oxides of copper, iron, magnesium, manganese, zinc, chlorine and nitrogen
Other special hazards during fire:	Nitrate component of product may promote fire once the product water content has been driven off

5.3. Advice for firefighters

Protective actions during firefighting:	Wear self-containing breathing apparatus
Special protective equipment for firefighters:	No special instructions
Other advice:	Keep product containers cool with water spray

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Non-emergency personnel PPE	See section 8.2
-----------------------------	-----------------



Emergency responders PPE See section 8.2

Controlling risks from accidental release: Remove any contaminated soil

Emergency procedures: Evacuate personnel to safe areas.

6.2. Environmental precautions

Keep accidental releases away from: Drains, water courses, soil and open ground. Discharge to ground, water courses or drains can cause eutrophication

6.3. Methods and material for containment and cleaning up

Containing a spill: Mop up and contain with absorbent materials

Cleaning up a spill Mop spills, recycle where possible

Other information on spill handling: Dilute with water, capture with absorbent material. Recycle where possible

6.4. Reference to other sections

References to other sections: See section 8.2 for personal protective equipment. See section 13.1 for disposal considerations

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Safe handling recommendations: Wash hands and exposed skin before meals and after use. Wear gloves when handling the product over long periods of time

Handling incompatibles: Do not use with strong bases

Reducing environmental risk: Do not discharge into drains or water courses

Occupational hygiene advice Wash hands after using this product and before eating, drinking or smoking. Remove contaminated clothing and protective equipment before entering eating areas

7.2. Conditions for safe storage, including any incompatibilities

Safe storage: managing risks during storage:

Explosive atmospheres formed during storage: Not applicable

Corrosive conditions during storage: Not applicable

Flammability hazards during storage: Not applicable

Incompatible substances or mixtures: Product will precipitate when mixed with alkaline solutions

Evaporative conditions: Not applicable

Potential ignition sources, including electrical equipment: Not applicable

Safe storage: controlling effects of ambient conditions:

Weather conditions: Do not store outside uncontained



EU Safety Data Sheet

Version 1.0
Updated: 12.03.2018

Ambient pressure: Not applicable

Temperature: Do not allow product to freeze or exceed 30°C

Sunlight: Keep out of direct sunlight

Humidity: Not applicable

Vibration: Not applicable

Safe storage: maintaining the integrity of the product:

Stabilisers: Stabilisers are not used in this product

Antioxidants: Antioxidants are not used in this product

Safe storage: other advice:

Ventilation requirements for storage: No specific ventilation requirements

Specific designs for storage rooms or vessels: No specific design criteria on storage areas apart from normal regulatory requirements for substances of this type

Quantity limits under storage conditions: Not applicable

Suitable packaging for the substance: Keep in original container

7.3. Specific end use(s)

Uses: Use as a foliar fertiliser concentrate for cereal products

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

8.1.1 Occupational exposure limits:

Current workplace exposure limits assigned to individual components according to HSE document EH40/2005

Substance	CAS number	Workplace Exposure Limit (WEL)				Comments
		Long-term exposure limit (8-hr TWA reference period)		Short-term exposure limit (15 minute reference period)		
		ppm	mg.m ⁻³	ppm	mg.m ⁻³	
Zinc chloride (fume)	7646-85-7	-	1	-	2	The Carc., Sen. And Sk notations are not exhaustive. Notations have been applied to the substances identified in IOELV Directives
Manganese and its inorganic compounds	-	-	0.5	-	-	
Iron salts (as Fe)	-	-	1	-	2	
Copper and compounds: dusts and mists (as Cu)	-	-	1	-	2	



- 8.1.2 Biological Limit Values: Not applicable
- 8.1.3 Current recommended monitoring procedures: Not applicable
- 8.1.4 Air contaminants formed when using the product as intended: Not applicable
- 8.1.5. PNECs and DNELs Not applicable

8.2. Exposure controls

- 8.2.1. Appropriate engineering controls: Handle in accordance with good industrial hygiene
- 8.2.2. Personal Protection Equipment
- Eye protection: Use safety glasses tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU)
- Face protection: Face-shield
- Hand protection: When handling the product over an extended period of time use nitrile, latex or rubber gloves, which satisfy the specifications of EU Directive 89/686/EEC and the standard EN 384 derived from it
- Other skin protection Do not wear open footwear
- Respiratory protection Not required
- Thermal hazards Not required
- 8.2.3. Environmental exposure controls Do not release substance to drains or surface water

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

- Appearance: Clear pale green liquid
- Physical state: Liquid
- Colour: Pale green
- Odour: Slightly metallic
- Odour threshold: Data not available
- pH: pH >0.1 – <2.0
- Melting point: Data not available
- Freezing point: <0°C
- Initial boiling point: Aqueous component will boil at 100°C
- Boiling range: Data not available
- Flash point: Data not available
- Flash point method: Data not available



Evaporation rate:	Data not available
Flammability (if solid or gas):	Data not available
Upper and lower flammability or explosive limits:	Data not available
Vapour pressure:	Data not available
Vapour density:	Data not available
Relative density:	1.25 – 1.30 g/cm ³ at 20°C
Solubility(ies)	Completely soluble in water
Partition coefficient: n-octanol/water	Data not available
Auto-ignition temperature	Data not available
Decomposition temperature	Data not available
Viscosity	<100 cPs at 20°C
Explosive properties	Data not available
Oxidising properties	Data not available
9.2. Other information	Data not available

SECTION 10: Stability and reactivity

10.1. Reactivity	Can react with strong bases
10.2. Chemical stability	Product is stable under anticipated storage and handling conditions
10.3. Possibility of hazardous reactions	Substance not known to react and/or polymerise
10.4. Conditions to avoid	Excessive heat (to water boiling point), mixing with alkalis
10.5. Incompatible materials	Alkaline materials
10.6. Hazardous decomposition products	No known hazardous decomposition products

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity	Oral LD50; >2,000 mg/kg body weight
Skin corrosion/irritation	Classified as corrosive to skin
Serious eye damage/irritation	Classified as corrosive to the eyes
Respiratory or skin sensitisation	Data not available
Germ cell mutagenicity	Data not available



Carcinogenicity	Data not available
Reproductive toxicity	Data not available
STOT-repeated exposure;	Chronic manganese poisoning primarily involves the central nervous system. Early symptoms include languor, sleepiness and weakness in legs. A solid mask-like appearance of the face, emotional disturbances such as uncontrollable laughter and an un-coordinated gait with tendency to fall in walking are findings in more advanced cases
11.2. Other information	No other information

SECTION 12: Ecological information

12.1. Toxicity

No test data is available for this product. Data has been extrapolated from constituent components

Species	Test	Value
Water flea (<i>Daphnia magna</i>)	EC50 48H	7 mg/L

12.2. Persistence and degradability Data not available

12.3. Bioaccumulative potential Data not available

12.4. Mobility in soil Data not available

12.5. Results of PBT and vPvB assessment Data not available

12.6. Other adverse effects

Environmental fate Data not available

Photochemical ozone creation potential Data not available

Ozone depletion potential Data not available

Endocrine disrupting potential Data not available

Global warming potential Data not available

SECTION 13: Disposal considerations

13.1. Waste treatment methods

This material, if discarded as produced, is classified as a hazardous waste. Waste treatment containers to be used for product include IBCs or drums. Recycle material where possible. If heavily soiled or disposal judged as necessary dispose in accordance with the Directive on waste 2008/98/EC

No specific waste treatment containers to be used for contaminated packaging, packaging should be recycled where possible. Waste treatment method for contaminated packaging should include a triple rinse with water. Dilute washings should be recycled where possible



SECTION 14: Transport information

14.1. UN number UN3264

14.2. UN proper shipping name

ADR/RID CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. (CONTAINS MANGANESE NITRATE)
IMDG CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. (CONTAINS MANGANESE NITRATE)
IATA Corrosive liquid, Acidic, Inorganic, N.O.S. (Contains manganese nitrate)

14.3. Transport hazard class(es) 8

14.4. Packing group III

14.5. Environmental hazards Not applicable

14.6. Special precautions for user Not applicable

14.7. Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code Not applicable

SECTION 15: Regulatory information

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

Ozone depleting substance (EC No 2037/2000): Not applicable

Persistent organic pollutants (EC No 850/2004) Not applicable

Export and import of dangerous chemicals (EC No 689/2008) Not applicable

COMAH/ Seveso II categories or named substance Not applicable

REACH Authorisations and/or Restrictions Not applicable

Any other relevant Safety, health and environmental regulations: Not applicable

15.2. Chemical safety assessment A chemical safety assessment has not been carried out for this product

SECTION 16: Other information

a) Changes made to SDS:

New safety datasheet

b) Key (or legend)

PPE Personal Protective Equipment
IOELV Indicative Occupational Exposure Limit Values
LD50 Lethal Dosage affecting 50% of sample population
EC50 Effective Concentration affecting 50% of sample population
TWA Time Weighted Average
WEL Workplace Exposure Limit

c) Literature references



European Chemicals Agency:

<http://echa.europa.eu/web/guest/information-on-chemicals/registered-substances>

HSE – EH40:2005 Workplace Exposure Limits:

<http://www.hse.gov.uk/pubns/priced/eh40.pdf>

NLM – Toxicology Data Network:

<https://www.nlm.nih.gov/>

Last accessed (12/03/2018)

Some data has been derived from constituent safety datasheets

d) Details of relevant hazard information

H272	May intensify fire, oxidiser
H302	Harmful if swallowed
H314	Causes severe skin burns and eye damage
H318	Causes serious eye damage
H335	May cause respiratory irritation
H373	May cause damage to organs through prolonged or repeated exposure
H410	Very toxic to aquatic life with long lasting effects
H412	Harmful to aquatic life with long lasting effects
P260	Do not breathe mist/vapour
P264	Wash hands thoroughly after handling
P280	Wear protective gloves/ protective clothing/ eye protection/ face protection
P273	Avoid release to the environment
P301 + P330 + P331	IF SWALLOWED: Rinse mouth. Do NOT induce vomiting
P303 + P361 + P353	IF ON SKIN (or hair): Remove/ Take off immediately all contaminated clothing. Rinse skin with water/ shower
P304 + P340	IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing
P305 + P351 + P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
P310	Immediately call a POISON CENTRE or doctor/physician
P314	Get medical advice/ attention if you feel unwell
P321	Specific treatment (none known)
P363	Wash contaminated clothing before reuse
P405	Store locked up
P501	Dispose of contents in accordance with local regulations, dispose of container to appropriate domestic recycling stream

e) Appropriate training for workers

Training for spillage handling and chemical handling is recommended

f) Classification method:

CLP classification