



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 Lono Potato
Product code LEV2015-05
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 fertiliser concentrate for potatoes
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: Levity Crop Science Ltd
Supplier address: Levity Crop Science Ltd
The Rural Business Centre
Myerscough College
Bilsborough
United Kingdom
PR3 0RY

Supplier telephone: +44 (0) 1995 642351
Email: info@levitycropscience.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) Acute toxicity, Oral (Category 4)
Serious eye irritation (Category 2)
2.2.2. Directives 67/548/EEC, 1999/45/EC Harmful if swallowed (Xn)
Irritating to eyes (Xi)

2.2. Label elements

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



CLP Hazard Pictograms:

Signal Word(s): Warning

Hazard Statements:

H302 Harmful if swallowed
H319 Causes serious eye irritation

Precautionary Statements:

P264 Wash hands thoroughly after handling this product
P280 Wear eye protection
P301 + P312 IF SWALLOWED: Call a POISON CENTRE or doctor/physician if you feel unwell
P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
P337 + P313 If eye irritation persists: Get medical advice/attention
P501 Dispose of contents in accordance with local regulations, dispose of container to appropriate domestic recycling stream

According to European Directive 67/548/EEC as amended.



Hazard symbol(s):

Risk phrases:

Xn; R22 Harmful if swallowed
Xi; R36 Irritating to eyes

Safety phrases:

S13 Keep away from food, drink and animal feeding-stuffs
S24/25 Avoid contact with skin and eyes
S26 In case of contact with eyes, rinse immediately with plenty of water and seek medical attention
S28 After contact with skin, wash immediately with plenty of water
S39 Wear eye protection
S46 If swallowed, seek medical advice immediately and show this document

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	H statements
Water	40 – 50	7732-18-5	231-791-2	-	-
Calcium nitrate dihydrate	10 – 30	13477-34-4	-	01-2119463277-33-####	H272, H302, H319
Ferric chloride anhydrous	1 – <3	7705-08-0	231-729-4	01-2119497998-05-####	H302, H315, H318
Manganese chloride tetrahydrate	1 – <3	7773-01-5	231-869-6	01-2119934899-15-####	H302, H318, H373, H411

EEC Classification No 67/548/EEC

Hazardous ingredient(s)	%w/w	CAS no	EC no	REACH Registration no	Risk Phrases
Water	40 – 50	7732-18-5	231-791-2	-	-
Calcium nitrate dihydrate	10 – 30	13477-34-4	-	01-2119463277-33-####	R8, R22, R36
Ferric chloride anhydrous	1 – <3	7705-08-0	231-729-4	01-2119497998-05-####	R22, R36/38
Manganese chloride tetrahydrate	1 – <3	7773-01-5	231-869-6	01-2119934899-15-####	R22, R41, R48/20, R51/53

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 and seek medical advice

If on skin (or hair): Wash affected skin with plenty of soap and water. Wash clothes before reuse



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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): Where not washed exposure may result in redness and irritation. Irritation may occur to skin especially when already sore or dry according to contact time.

If in eyes: Exposure to eyes will result in immediate pain and tearing. Burns to the eye may occur if not washed promptly

If swallowed: Ingestion may cause abdominal pain, vomiting and diarrhoea within six hours of ingestion. Large doses of calcium nitrate can cause renal stones, hypercalcemia and methemoglobinemia. Iron poisoning can cause hepatotoxicity and hypovolemic shock

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

Medical treatment: Hypercalcemia can be treated with saline hydration; the salt content of this product should be considered when deciding a treatment regime. Activated carbon may be administered when treating after ingestion of methemoglobinemia causing substances. Deferroxamine may be indicated as a chelation treatment for iron poisoning, activated carbon is not useful in this instance.

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 calcium, magnesium, iron, manganese, zinc, copper, carbon, nitrogen and chlorine

Other special hazards during fire: None known



5.3. Advice for firefighters

Protective actions during firefighting:	Wear self-containing breathing apparatus
Special protective equipment for firefighters:	No special instructions
Other advice:	Not applicable

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:	Avoid contact with strong acids, bases and reducing agents
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
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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, neutralise with lime or limestone powder. 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
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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 acids, bases or reducing agents
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: Incompatible with strong acids, bases or reducing agents

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

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. On prolonged exposure may be corrosive to aluminium, copper, carbon steel and stainless steel



7.3. Specific end use(s)

Uses: Use as a fertiliser concentrate for potatoes by foliar, furrow or drip irrigation

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	
Iron Salts	-	-	1.0	-	2.0	The Carc., Sen. and Sk notations are not exhaustive. Notations have been applied to the substances identified in IOELV Directives

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: Not required

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 420 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 green/brown liquid
Physical state:	Liquid
Colour:	Green to brown
Odour:	Slightly sweet and metallic
Odour threshold:	Data not available
pH:	1.5 – 2.5
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:	1.31 – 1.32 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 acids, bases and reducing agents
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	Reducing and alkaline materials
10.6. Hazardous decomposition products	No known hazardous decomposition products known

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity	Oral (rat) – LD50; 2,780 mg/kg body weight (extrapolated from constituent components)
Skin corrosion/irritation	Anticipated to be irritating to skin
Serious eye damage/irritation	Classified as irritating 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;	Data not available
11.2. Other information	No other information

SECTION 12: Ecological information



12.1. Toxicity

No specific data available from tests performed on this product. The mixture is not classified as an environmental hazard. Data below has been extrapolated from constituent components

Species	Test	Value
Rainbow trout (<i>Oncorhynchus mykiss</i>)	LC50 96H	1.0 mg/L
Water flea (<i>Daphnia magna</i>)	EC50 48H	9.6 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 not 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 to landfill 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 rinse with water. Dilute washings should be recycled where possible

SECTION 14: Transport information

14.1. UN number Not applicable

14.2. UN proper shipping name ADR/RID Not dangerous goods
 IMDG Not dangerous goods
 IATA Not dangerous goods



- 14.3. Transport hazard class(es)** Not applicable
- 14.4. Packing group** Not applicable
- 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>

The Royal Children's Hospital Melbourne:

http://www.rch.org.au/clinicalguide/guideline_index/Iron_Poisoning/

Cole Palmer Chemical Resistance Database:



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<http://www.coleparmer.co.uk/Chemical-Resistance>

HSE – EH40:2005 Workplace Exposure Limits:

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

Chem One Ltd. – Incompatibility List:

<http://www.chemone.com/default/other/chemical%20incompatibility%20list.pdf>

Agency for Toxic Substance and Disease Registry – Nitrate/Nitrite Toxicity:

<http://www.atsdr.cdc.gov/csem/csem.asp?csem=28&po=13>

NLM – Toxicology Data Network:

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

Last accessed (22/01/2016)

Some physical properties reported from direct laboratory testing performed at Grotech Production Ltd

Some data has been derived from constituent safety datasheets

d) Details of relevant hazard information

H272	May cause fire or explosion; strong oxidiser
H302	Harmful if swallowed
H315	Causes skin irritation
H318	Causes serious eye damage
H319	Causes serious eye irritation
H373	May cause damage to organs through prolonged or repeated exposure
H411	Toxic to aquatic life with long lasting effects
P264	Wash hands thoroughly after handling
P270	Do not eat, drink or smoke when using this product
P280	Wear eye protection
P301 + P312	IF SWALLOWED: Call a POISON CENTRE or doctor/physician if you feel unwell
P305 + P351 + P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
P330	Rinse mouth
P337 + P313	If eye irritation persists: Get medical advice/attention
P501	Dispose of contents in accordance with local regulations, dispose of container to appropriate domestic recycling stream
R8	Contact with combustible material may cause fire
R22	Harmful if swallowed
R36/38	Irritating to skin and eyes
R41	Risk of serious damage to the eyes
R48/20	Danger of serious damage to health by prolonged exposure through inhalation
R51/53	Toxic to aquatic organisms, may cause long term adverse effects in the environment
S13	Keep away from food, drink and animal feeding-stuffs
S24/25	Avoid contact with skin and eyes
S26	In case of contact with eyes, rinse immediately with plenty of water and seek medical attention
S28	After contact with skin, wash immediately with plenty of water
S39	Wear eye protection
S46	If swallowed, seek medical advice immediately and show this document



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e) Appropriate training for workers

Training for spillage handling and chemical handling is recommended

f) Classification method:

CLP classification, CHIP classification