



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 INDRA
Product code LEV2011-10
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 protected 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) Serious eye damage (Category 1)
 Acute aquatic toxicity (Category 1)
 Chronic aquatic toxicity (Category 1)

2.2. Label elements

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



CLP Hazard Pictograms:

Signal Word(s): Danger

Hazard Statements:

H318 Causes serious eye damage
H410 Very toxic to aquatic life with long lasting effects



Precautionary Statements:

P280
P302 + P352
P305 + P351 + P338

P310
P332 + P313
P501

Wear skin and eye protection
IF ON SKIN: Wash with plenty of soap and water
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 or doctor/physician
If skin irritation occurs: Get medical advice/attention
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	H statements
Water	40 – 70	7732-18-5	231-791-2	-	-
Iron sulphate heptahydrate	5 – 20	7720-78-7	231-753-5	01-2119474684-27-####	H302, H315, H319
Zinc sulphate heptahydrate	5 – 20	7446-19-7	231-793-3	01-2119474684-27-####	H302, H318, H410
Manganese sulphate monohydrate	1 – 10	7785-87-7	232-089-9	01-2119456624-35-####	H373, H411
Copper sulphate pentahydrate	1 – 10	7758-99-8	231-847-6	01-2119520566-40-####	H302, H315, H319, H410

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 soap and water. 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 unless advised by a medical professional. 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 soreness. 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 eyes will likely occur if not washed immediately
If swallowed:	Ingestion may cause nausea, vomiting, abdominal pain, diarrhoea and other symptoms of gastro-intestinal distress within the first hours. Zinc poisoning can cause burns to the gastrointestinal tract. Iron poisoning can cause hepatotoxicity and hypovolemic shock. Severe manganese toxicity may lead to shaking and neurological effects

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

Medical treatment:	Treatment for zinc ingestion is symptomatic and supportive, early endoscopy to evaluate for burns. Deferroxamine may be indicated as a chelation treatment for iron poisoning, activated carbon is not useful in this instance. EDTA chelation treatment may decrease the body burden of copper and manganese.
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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, carbon and sulphur
Other special hazards during fire:	Organic components may burn once dried

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 bases or oxidising 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: 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

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 fertiliser concentrate for protected 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	
Iron salts (as Fe)	-	-	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	-	-	-
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: 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 dark blue liquid

Physical state: Liquid

Colour: Dark blue

Odour: Slightly metallic

Odour threshold: Data not available

pH: pH 3.0 – 4.0

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 – 1.28 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 and oxidising 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	Oxidising 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 LD50; >2,000 mg/kg body weight (extrapolated from constituent components)
Skin corrosion/irritation	Anticipated to be slightly irritating 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; Data not available
11.2. Other information No other information

SECTION 12: Ecological information

12.1. Toxicity

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

Species	Test	Value
Water flea (<i>Daphnia magna</i>)	EC50 48H	4 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 UN3082

14.2. UN proper shipping name



ADR/RID	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S., (CONTAINS ZINC SULPHATE)
IMDG	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S., (CONTAINS ZINC SULPHATE)
IATA	Environmentally Hazardous Substance, Liquid, N.O.S., (Contains Zinc Sulphate)

14.3. Transport hazard class(es)	9
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:

Safety datasheet has been completely rewritten

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/

HSE – EH40:2005 Workplace Exposure Limits:



EU Safety Data Sheet

Version 2.0
Updated: 12.10.2017

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

NLM – Toxicology Data Network:

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

Last accessed (12/10/2017)

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

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
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
P280	Wear skin and eye protection
P273	Avoid release to the environment
P302 + P352	IF ON SKIN: Wash with plenty of soap and water
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
P332 + P313	If skin irritation occurs: Get medical advice/attention
P337 + P313	If eye irritation persists: Get medical advice/attention
P391	Collect spillage
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