Classified as Hazardous

1. PRODUCT IDENTIFIER & IDENTITY FOR THE CHEMICAL

Product Name: **HumiPLEX TRACE**

LawrieCo Pty Ltd
A.B.N. 72 134 390 855
47 Naweena Road, Regency Park
SOUTH AUSTRALIA, 5010

Tel: +61 8 8260 1134
Fax: +61 8 8260 2263
Web: www.lawrieco.com.au
Email: info@lawrieco.com.au

Emergency Contact 24 hours	LawrieCo Technical Manager: 0408 268 058	Poisons Information Centre: 13 11 26 (Australia) 0800 764 766 (New Zealand)

CAS Number:	Mixture	Product Code:	BIOLTR/L

Other Names: None
Product Use: Recommended for use as a fertiliser only. A high analysis micronutrient liquid fertiliser, with biostimulants and soil conditioners. See product label for application recommendations.

2. HAZARD IDENTIFICATION

Classified as a Hazardous Substance
in accordance with Safe Work Australia - Hazardous Chemicals Information System (HCIS) Australia, Globally Harmonised System (GHS) of Classification and Labelling of Chemicals.

Classified as a Scheduled Poison S6
in accordance with the Standard for the Uniform Scheduling of Medicines and Poison (SUSMP) Australia.

NOT Classified as Dangerous Goods
in accordance with the Australian Code for the Transport of Dangerous Goods by Road and Rail (ADG).

GHS	**Hazardous**
SUSMP	**Poison S6**
ADG	**Not Dangerous Goods**

GHS Classification
Hazard Categories
Acute Toxicity (Oral) – Category 4
Skin Corrosion/Irritation – Category 2
Serious Eye Damage/Irritation – Category 1

Signal Word **DANGER**

Hazard Statements

 Corrosion	**H302** **Harmful if swallowed**	**H315** **Causes skin irritation**	**H318** **Causes serious eye damage**

Classified as Hazardous

Precautionary Statements – General, Prevention, Response, Storage and Disposal

General	
P101 + P102 + P103	If medical advice is needed, have the product container or label on hand. Keep out of reach of children. Read label before use.
Prevention	
P264	Wash hands and exposed skin thoroughly after handling.
P270	Do not eat, drink or smoke when using this product.
P280	Wear protective gloves, protective clothing, eye and face protection.
Response	
P301 + P312	IF SWALLOWED: Call a POISON CENTER or doctor if you feel unwell.
P330	Rinse mouth with water. Give plenty of water to drink.
P305 + P351 + P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do so. Continue rinsing. Immediately call a POISON CENTER or doctor.
P337 + P313	If eye irritation persists: Get medical attention.
P302 + P352	IF ON SKIN: Wash with plenty of soap and water.
P332 + P313	If skin irritation occurs: Get medical advice.
Storage	
	None
Disposal	
P501	Dispose of contents and container to an approved waste disposal plant.

3. COMPOSITION / INFORMATION ON INGREDIENTS

Product name	HumiPLEX TRACE	***SDS Code***	8015
Product use	Recommended for use as a fertiliser only		
Ingredients	***Name***	***CAS Number***	***Proportion w/w***
	Water	7732-18-5	50.0 – 51.0%
	Microbial Ferment (proprietary non-hazardous)	Unknown	20.0 – 21.0%
	Zinc Sulfate monohydrate	7446-19-7	9.0 – 10.0%
	Manganese(II) Sulfate monohydrate	10034-96-5	8.0 – 9.0%
	Copper(II) Sulfate pentahydrate	7758-99-8	2.0 – 3.0%
	Boric Acid	10043-35-3	1.0 – 2.0%
	Iron(II) Sulfate heptahydrate	7782-63-0	1.0 – 2.0%
	Biostimulants (proprietary non-hazardous)	Mixture	3.0%

4. FIRST AID MEASURES

Inhalation If applicator feels drowsy, dizzy tired or is experiencing headaches, remove oneself to fresh air and keep warm and quiet if experiencing breathing difficulties.

Ingestion Never give anything by mouth to an unconscious person. Do NOT induce vomiting. If swallowed rinse mouth with water, give plenty of water to drink. Contact a doctor or Poisons Information Centre (Australia: 13 11 26; New Zealand: 0800 764 766).

Eyes If in eyes, hold eyelids apart and rinse cautiously for several minutes with running water. Remove contact lenses if present and easy to do so. Continue rinsing for at least 15 minutes. If eye irritation persists, get medical attention.

Skin and hair If skin or hair contact occurs, remove contaminated clothing, wash skin and hair with plenty of soap and running water. If skin irritation occurs get medical attention.

Classified as Hazardous

First aid facilities Eye wash, clean water supply, soap or skin cleaner.

Advice to doctor If poisoning occurs consult a doctor or Poisons Information Centre (Australia 13 11 26; New Zealand 0800 764 76). Have a copy of this safety data sheet or label available. Treat symptomatically.

Symptoms caused by exposure

Ingestion may cause vomiting or diarrhea. Contact will cause irritation of eyes, skin, mucous membranes and existing abrasions. Other than irritation no acute, delayed or aggravated medical conditions are known.

Medical attention and special treatment

Wash exposed skin and hair with water and soap. If swallowed rinse mouth and give plenty of water to drink. If in eyes flush continuously with running water for at least 15 minutes.

5. FIRE FIGHTING MEASURES

General measures Clear fire area of all non-emergency personnel. Stay upwind. Keep out of low areas. Eliminate ignition sources. Move fire exposed containers from the fire area if it can be done without risk. Do NOT allow fire fighting water to reach waterways, drains or sewers. Store firefighting water for treatment.

Flammability conditions Product is a non-flammable liquid.

Suitable extinguishing equipment AS 2444:2001 Appropriate extinguishing media includes water, water spray, foam, dry chemical or carbon dioxide. Use extinguishing media suitable for the surrounding fire and environment.

Specific hazards arising from the chemical fire Combustion and decomposition products may include sulphur dioxide (SO_2), sulphur trioxide (SO_3), carbon monoxide (CO) and carbon dioxide (CO_2). May include oxides of iron, manganese, zinc, copper and boron.

Special protective equipment and precautions for fire fighters Wear self contained breathing apparatus for firefighting if necessary (includes firefighting helmet, coat, trousers, boots and gloves).
No HAZCHEM Code assigned.

Further information

Flash Point	No data available
Lower Explosion Limit	No data available
Upper Explosion Limit	No data available
Auto Ignition Temperature	No data available

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures Use personal protective equipment. Avoid breathing vapours, mists or sprays. Ensure adequate ventilation. Evacuate personnel to safe areas. For personal protection see section 8.

Environmental precuatiions Prevent from entering waterways, sewage and drains. Collect any liquid for treatment. For any queries consult Local Statuary Authorities.

Methods and materials for containment and cleaning up Cover drains. Contain spills and absorb onto absorbent material, dry sand, earth or neutralised with soda ash (sodium carbonate). Sweep and shovel into suitably labelled, closed containers for disposal. For any queries consult Local Statutory Authorities.

7. HANDLING and STORAGE

Precautions for safe handling	Use personal protective equipment, see section 8. Avoid contact with skin and eyes. Avoid breathing sprays or mists while handling. Provide appropriate ventilation while decanting the product. Normal measures for preventative fire protection. After use and before eating, drinking or smoking, wash all exposed skin and hair with soap and water.
Conditions of safe storage and incompatibilities	Keep out of reach of children. Containers must be clearly labelled, rigid and strong. Store tightly closed in a well-ventilated cool place or at least out of direct sunlight. Keep container tightly closed in a dry well-ventilated place. Keep away from metals, alkaline substances and strong oxidisers.
Specific end uses	Apart from uses mentioned in section 1, no other specific uses are stipulated.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Exposure standards TWA (8 hour)	There are no assigned exposure standards for this product. For dried product - TWA = No data available for this mixture, however the HCIS specifies 10mg/m3 (for inspirable dust) and 3mg/m3 (for respirable dust).
Exposure standards STEL (15 min)	There are no assigned exposure standards for this product. For dried product - STEL = No data available for this mixture, however the HCIS specifies 10mg/m3 (for inspirable dust) and 3mg/m3 (for respirable dust).
Biological limited values	There are no known biological limited values that have been assigned.
Engineering controls	Avoid creating sprays or mists with spray equipment while personnel are exposed without appropriate PPE. While using this material ensure there is access to an eye wash and running water or safety shower. Ensure adequate general or local exhaust ventilation. Handle in accordance with good industrial hygiene and safety practices. Wash hands before breaks and at the end of the workday.

Personal Protection

Inhalation/respiratory AS –NZS 1715/1716	For general handling use a class P1 or P2 particle respirator. If engineering controls are inadequate, wear an approved respirator with suitable filter for acid gases and vapours. Use respirators and components tested and approved under appropriate government standards.
Eye and face AS –NZS 1336/1337	Face shield or safety glasses fitted with side shields must be worn at all times during the handling and application period. Do NOT wear contact lenses.
Gloves AS –NZS 2161	It is advisable to wear viton or PVC gloves at all times during the handling and application period.
Footwear AS –NZS 2210	It is advisable to wear enclosed chemical resistant footwear during the handling and application period.
Clothing AS –NZS 3765	It is advisable to wear chemical resistant coveralls during the handling and application period.
Hearing AS –NZS 1270	Hearing protection not required unless application equipment requires hearing protection.
Thermal hazards	No data available

Classified as Hazardous

Other Requirements The type of protective equipment must be selected according to the concentration and amount of the hazardous substance at the specific workplace. Avoid unnecessary contact with eyes, skin and hair. After application, wash skin and hair thoroughly with soap and water. Handle in accordance with good industrial hygiene and safety practices.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	Brown – green colour, liquid.
Odour	Sweet/earthy metallic smell.
Odour threshold	No data available
pH *@ 20^{O}C*	2.10 – 2.40
Freezing point	No data available
Initial boiling point and boiling range	No data available
Melting point	No data available
Flash point	No data available
Evaporation rate	No data available
Flammability	No data available
Upper/lower flammability or explosive limits	No data available
Auto-ignition temperature	No data available
Vapour pressure	No data available
Vapour density	No data available
Specific Gravity *(relative density) @ 15.6^{O}C*	1.19 – 1.23 g/mL
Solubility	Miscible
Partition coefficient: n-octanol/water	No data available
Decomposition temperature	>100^{O}C
Viscosity	No data available

10. STABILITY AND REACTIVITY

Chemical stability Stable under recommended storage conditions. No data available.

Possibility of hazardous reactions Will not polymerise. Will react mildly with metals. Will react with strongly alkaline materials and produce heat.

Conditions to avoid Avoid excessive heat and direct sunlight. UV exposure will cause photocatalytic oxidation of packaging with packaging becoming brittle.

Incompatible materials Metals, alkaline materials and strong oxidisers.

Hazardous decomposition products Combustion and decomposition products may include sulphur dioxide (SO_2), sulphur trioxide (SO_3), carbon monoxide (CO) and carbon dioxide (CO_2).
In the event of fire: see section 5.

11. TOXICOLOGICAL INFORMATION

Individual Ingredients of Mixture

To the best of our knowledge, the chemical, physical and toxicological properties of this mixture have not been thoroughly investigated.

Ingredient: Zinc Sulfate monohydrate (CASRN 7446-19-7)	**Information Sources:** INCHEM; TOXNET – HSDB; OECD – SIDS.
Concentration	9.0 – 10.0% by weight.
Acute toxicity	LD_{50} Intravenous – rat – 40 mg/kg LD_{50} Intraperitoneal – rat – 258 mg/kg
Acute oral toxicity	LD_{50} Oral – rat (male) – 920 mg/kg Toxic by ingestion.
Acute dermal toxicity	LD_{50} Dermal – rat – > 2,000mg/kg
Acute inhalation toxicity	No data available.
Skin corrosion/irritation	Causes skin irritation and can be corrosive.
Serious eye damage/irritation	Can cause significant eye injuries. Redness and persistent discomfort occur after exposure to concentrated solutions. Can result in permanent injury.
Respiratory or skin sensitisation	In uncontrolled levels of fumes or dust of zinc sulfate, workers can develop dermatitis, boils, conjunctivitis and gastrointestinal disturbances. Such findings do not occur until exposure has lasted more than six months.
Germ cell mutagenicity	The results of in vitro genotoxicity studies indicate that zinc has genotoxic potential in vitro.
Carcinogenicity	Not identified as a probable, possible or confirmed human carcinogen by IARC.
Reproductive Toxicity	Available data in experimental animals on zinc excess indicate that adverse effects on fertility and fetal development may occur at dose levels (200 mg Zn2+/kg bw/day).
Specific Target Organ Toxicity STOT - single exposure	No data available. Breathing in dust may cause irritation.
Specific Target Organ Toxicity STOT - repeated exposure	No data available.
Aspiration hazard	No data available.
Possible routes of exposure	The substance can be absorbed into the body by ingestion.
Signs and Symptoms of exposure	Coughing, sore throat, irritation of eyes and skin, abdominal pain, nausea and vomiting.
Health Effect from exposure	Acute overdose: Profuse sweating, decreased consciousness, blurred vision, tachycardia, hypothermia, hyperamylasemia, hypotension, pulmonary edema, diarrhea, vomiting, jaundice, oliguria.
Other information	The substance is toxic to aquatic organisms. It is strongly advised not to let the chemical enter in
GHS hazard classification	Acute Toxicity (Oral) - Category 4. Serious Eye Damage/Irritation - Category 1. Acute Hazard To The Aquatic Environment - Category 1. Long-term Hazard To The Aquatic Environment - Category 1.
GHS hazard statement	H302 Harmful if swallowed. H318 Causes serious eye damage. H410 Very toxic to aquatic life with long lasting effects.
Poison Standard (SUSMP)	Poison Schedule 6

Ingredient: Manganese Sulfate(II) monohydrate (CASRN 10034-96-5)	**Information Sources:** INCHEM; TOXNET – HSDB.
Concentration	8.0 – 9.0% by weight.
Acute toxicity	LD_{50} Intraperitoneal – mouse – 64 mg/kg LD_{100} Subcutaneous – mouse – 146 mg/kg
Acute oral toxicity	LD_{100} Oral – mouse – 305 mg/kg
Acute dermal toxicity	No data available.
Acute inhalation toxicity	Danger of serious damage to health by prolonged exposure through inhalation.
Skin corrosion/irritation	May cause skin irritation.
Serious eye damage/irritation	Causes eye irritation.
Respiratory or skin sensitisation	May be an irritant to mucous membranes of the respiratory tract (airways)
Germ cell mutagenicity	Has had both positive and negative results for genotoxicity.
Carcinogenicity	Not identified as a probable, possible or confirmed human carcinogen by IARC.
Reproductive Toxicity	Animal tests show that this substance possibly causes toxicity to human reproduction or development.
Specific Target Organ Toxicity STOT - single exposure	Manganese deposition throughout the brain may lead to neurotoxicity.
Specific Target Organ Toxicity STOT - repeated exposure	May cause damage to organs through prolonged or repeated exposure.
Aspiration hazard	No data available.
Possible routes of exposure	The substance can be absorbed into the body by inhalation of its aerosol and by ingestion.
Signs and Symptoms of exposure	Patients may develop headaches, dizziness, nausea, vomiting, diarrhea, abdominal pain and dehydration. hyperreflexia, and a mild tremor. Can cause mental status changes, vomiting, diarrhea, dehydration, hypotension, acute hepatic and renal failure, metabolic acidosis, multiorgan system failure and death.
Health Effect from exposure	Chronic exposure can result in mental status changes, hyperreflexia, mild tremors, acute hepatic and renal failure, metabolic acidosis, multiorgan system failure and death. Ingestion can lead to increase losses of calcium in faeces and subsequent lowering of blood calcium levels. Chronic excess inhalation exposures may lead to pulmonary inflammation and subsequent reactive airway disease.
Other information	Manganese deposition throughout the brain may lead to neurotoxicity. Manganese primarily deposits in the basal ganglia. Severe toxicity is characterized by a Parkinson's-like syndrome. The substance is toxic to aquatic organisms. It is strongly advised not to let the chemical enter into the environment.

Classified as Hazardous

GHS hazard classification	Specific Target Organ Toxicity (Repeated Exposure) - Category 2. Acute Hazard To The Aquatic Environment - Category 2. Long-term Hazard To The Aquatic Environment - Category 2.
GHS hazard statement	H373 May cause damage to organs through prolonged or repeated exposure. H401 Toxic to aquatic life. H411 Toxic to aquatic life with long lasting effects.
Poison Standard (SUSMP)	Not a Scheduled Poison.

Ingredient: Copper(II) Sulfate pentahydrate (CASRN 7758-99-8)	**Information Sources:** INCHEM; ECHA CLP report.
Concentration	2.0 – 3.0% by weight.
Acute oral toxicity	OECD 401 LD_{50} Oral – rat (males & females) – 428 mg/kg Lheritier, M.(1994) OECD 401 LD_{50} Oral – rat (females) – 666mg/kg Manciaux, X. (1998)
Acute dermal toxicity	OECD 402 LD_{50} Dermal – rat (male & female) – >2,000mg/kg Lheritier, M. (1993)
Acute inhalation toxicity	No data available.
Skin corrosion/irritation	Causes skin irritation and is corrosive.
Serious eye damage/irritation	OECD 405 Severe eye irritant – Mercier, O. (1994b).
Respiratory sensitisation	No data available.
Skin sensitisation	OECD 406 (Skin sensitisation): NOT sensitising – Mercier, O. (1994c).
Germ cell mutagenicity	Overall, data indicates that copper compounds do not meet the criteria for classification as a genotoxic.
Carcinogenicity	Not identified as a probable, possible or confirmed human carcinogen by IARC. Copper sulphate pentahydrate does not meet the criteria for classification.
Reproductive toxicity	No treatment related effects have been observed on reproduction parameters or systemic toxicity.
Specific Target Organ Toxicity STOT - single exposure	No classification as STOT-SE under regulation (EC) 1272/2008 is proposed. No classification or SCLs are considered necessary.
Specific Target Organ Toxicity STOT - repeated exposure	Rat - LOAEL of 300 ppm (equivalent to 10 mg Cu/kg bw/d) Hébert, C.D., Elwell, M.R., Travlos, G.S., Fitz, C.J. and Bucher, J.R. (1993). Mice - NOAEL of 1000 ppm (equivalent to 24 or 36 mg Cu/kg bw/d for males and females) Hébert, C.D., Elwell, M.R., Travlos, G.S., Fitz, C.J. and Bucher, J.R. (1993). No classification is considered necessary for repeated exposure.
Aspiration hazard	No data available.
Possible routes of exposure	The substance can be absorbed into the body by ingestion and by inhalation.
Signs and symptoms of exposure (early onset)	Inhalation causes cough and sore throat. Skin contact causes redness and pain. Eye contact cause redness, pain and blurred vision. Ingestion is corrosive and can cause abdominal pain, burning sensation, diarrhea, nausea, vomiting and shock or collapse.
Health effect from exposure (delayed)	The substance is severely irritating to the eyes and skin. The aerosol is irritating to the respiratory tract. Corrosive on ingestion. Ingestion could cause effects on the blood, kidneys and liver. This may result in haemolytic anaemia, kidney impairment and liver impairment. Repeated or prolonged inhalation of the aerosol may cause effects on the lungs. Ingestion may cause effects on the liver. Ingestion could cause effects on the blood, kidneys and liver. This may result in haemolytic anaemia, kidney impairment and liver impairment.
Other information	The substance is toxic to aquatic organisms. Bioaccumulation of this chemical may occur along the food chain, for example in fish. It is strongly advised not to let the chemical enter the environment.
GHS hazard classification	Acute Toxicity (Oral) - Category 4. Skin Corrosion/Irritation - Category 2. Serious Eye Damage/Irritation - Category 2A. Acute Hazard To The Aquatic Environment - Category 1. Long-term Hazard To The Aquatic Environment - Category 1.
GHS hazard statement	H302 Harmful if swallowed. H315 Causes skin irritation. H319 Causes serious eye irritation. H410 Very toxic to aquatic life with long lasting effects.
Poison Standard (SUSMP)	Poison Schedule 6.

Ingredient: Boric Acid (CASRN 10043-35-3)	**Information Sources:** INCHEM; ECHA CLP report; TOXNET HSDB; NICNAS IMAP.
Concentration	1.0 – 2.0% by weight.
Acute oral toxicity	LD_{50} Oral – rat – 2660 mg/kg – Lewis, R.J. Sr. (ed) Sax's Dangerous Properties of Industrial Materials. 11th Edition.
Acute dermal toxicity	LD_{50} Dermal – rat – >2000 mg/kg – Krieger, R. (ed.). Handbook of Pesticide Toxicology. Volume 2, 2nd ed. 2001
Acute inhalation toxicity	LC_{50} Inhalation – rat – >0.16 mg/L 4hr – European Chemicals Bureau; IUCLID Dataset for Boric Acid (10043-35-3)
Skin corrosion/irritation	The available information indicates that the chemicals in this group are not likely to be skin irritants.
Serious eye damage/irritation	Although slight eye irritant effects were reported in animal studies, the effects are not sufficient to warrant a hazard classification for the chemicals in this group.
Respiratory sensitisation	The limited data concerning respiratory irritation available from animal studies, suggests that it is unlikely to cause respiratory sensitisation.
Skin sensitisation	No evidence of skin or respiratory sensitisation in humans occupationally exposed to borates has been reported (European Commission, 2009; EU RAR, 2009).
Germ cell mutagenicity	Based on available information, boric acid is not considered to have mutagenic or genotoxic potential (US EPA, 2004; EU RAR, 2009; ATSDR, 2010; REACHb).
Carcinogenicity	Not identified as a probable, possible or confirmed human carcinogen by IARC. Copper sulphate pentahydrate does not meet the criteria for classification.
Reproductive toxicity	Category 3; R63: Possible risk of harm to the unborn child according to Council Directive2001/59/EC (28th ATP of Directive 67/548/EEC, Dangerous Substance Directive)
Specific Target Organ Toxicity STOT - single exposure	The substance is irritating to the respiratory tract. May cause mechanical irritation to the eyes. The substance may cause effects on the central nervous system and kidneys. This may result in impaired functions.
Specific Target Organ Toxicity STOT - repeated exposure	A number of repeated dose oral toxicity studies in animals have indicated that the main target organ for boron toxicity are the testes, leading to reproductive and developmental adverse effects. Adverse haematological effects indicative of increased red blood cell destruction have also been commonly noted. A two-year NOAEL of 100 mg/kg bw/day of boric acid (equivalent to 17.5 mg boron/kg bw/day) was determined based on clinical and haematological effects and the testicular atrophy observed at the highest doses (US EPA, 2004; EU RAR, 2009; REACHb).

Classified as Hazardous

Aspiration hazard	No data available.
Possible routes of exposure	The substance can be absorbed into the body by inhalation of dust and by ingestion.
Signs and symptoms of exposure (early onset)	Poisoning begins with nausea, vomiting and diarrhea, regardless of route of administration. Gastrointestinal effects include persistent nausea, vomiting, and diarrhea in children that lead to acute dehydration and shock. Nausea, vomiting, and diarrhea and epigastric pain, hematemesis, and blue-green discoloration of the faeces and vomit characterize adult boron intoxication.
Health effect from exposure (delayed)	Long term/delayed health effects are recognised with boric acid classified as hazardous for reproductive and developmental toxicity—Category 1B; H360FD May damage fertility. May damage the unborn child.
Other information	The fatal dose /in humans/ is thought to be 2000-3000 mg for infants, 5000-6000 mg for children, and 15,000-20,000 mg for adults. Krieger, R. (ed.). Handbook of Pesticide Toxicology. Volume 2, 2nd ed. 2001.
GHS hazard classification	Toxic To Reproduction - Category 1B.
GHS hazard statement	H360FD May damage fertility. May damage the unborn child.
Poisons Standard (SUSMP)	Schedule 5 Poison

Ingredient: Iron(II) Sulfate hexahydrate (CASRN 7782-63-0)	**Information Sources:** TOXNET – HSDB.
Concentration	1.0 – 2.0% by weight.
Acute toxicity	Acute Exposure experiments have shown that large doses of ferrous sulfate produce severe liver damage. At post-mortem in naturally occurring cases only organ consistently affected is liver, characteristic finding being periportal necrosis. Local action on gut is shown by oedema and ulceration of stomach and brown staining of its mucous membranes. LD_{50} Intravenous – mouse – 65 mg/kg LD_{50} Intravenous – dog – 79 mg/kg
Acute oral toxicity	LD_{50} Oral – mouse – 1,520 mg/kg LD_{50} – rate – 319 mg/kg
Acute dermal toxicity	LD_{50} Dermal – rat – 155 mg/kg LD_{50} Dermal – mouse – 60.3 mg/kg
Acute inhalation toxicity	If inhaled, iron is a local irritant to the lung and gastrointestinal tract.
Skin corrosion/irritation	Causes skin irritation.
Serious eye damage/irritation	Causes eye irritation.
Respiratory or skin sensitisation	Breathing in dust may result in respiratory irritation.
Germ cell mutagenicity	No evidence of genotoxicity.
Carcinogenicity	Not identified as a probable, possible or confirmed human carcinogen by IARC.
Reproductive Toxicity	No data available.
Specific Target Organ Toxicity STOT - single exposure	No data available.
Specific Target Organ Toxicity STOT - repeated exposure	No data available.
Aspiration hazard	No data available.
Possible routes of exposure	Inhalation, eye contact and ingestion.
Signs and Symptoms of exposure	Ingestion may cause diarrhoea, nausea, and vomiting. Ingestion of large amounts of soluble iron compounds may result in epigastric pain, vomiting blood and circulatory failure. Inhalation may cause irritation of mucous membranes. Eye contact will cause irritation with redness and pain.
Health Effect from exposure	Evidence suggest that repeated or prolonged exposure could results in effects on the liver.
Other information	Symptoms may be delayed by several hours.
GHS hazard classification	Acute Toxicity (Oral) - Category 4. Serious Eye Damage/Irritation - Category 2A. Skin Corrosion/Irritation - Category 2.
GHS hazard statement	H302 Harmful if swallowed. H315 Causes skin irritation. H319 Causes serious eye irritation.
Poison Standard (SUSMP)	Poison Schedule 6.

12. ECOLOGICAL INFORMATION

Ectotoxicity **Hazard Statement H413** – May cause long lasting harmful effects to aquatic life.
Hazard Category – Aquatic, Chronic – Category 4
No signal word or pictogram required.

Persistence and Degradability No data available.

Bioaccumulative potential No data available

Mobility in soil No data available.

Other adverse effects No data available.

13. DISPOSAL CONSIDERATIONS

Spills
Prevent spills from entering drains, surface water and ground water. Collect all residues with absorbent material, dry earth, sand or neutralised with soda ash (sodium carbonate). After removal of residues wash down area with water. Disposal must be carried out in accordance with Local Statuary Authorities.
Material
A person must not dispose of or cause to be disposed of a Schedule 5, Schedule 6 or Schedule 7 poison in any place or manner that constitutes or is likely to constitute a risk to public health or safety. Handle and dispose of in compliance with current environmental waste legislation. If in doubt, contact Local Statuary Authorities.
Contaminated Material and Packaging
Empty containers may be suitable for reuse or recycling after cleaning and appropriate disposal of the cleaning agents. Disposal method dependent upon degree and nature of contaminated material. Disposal must be carried out in compliance with current environmental waste legislation. If in doubt seek professional advice or contact Local Statuary Authorities.

For the safety of persons conduction disposal, recycling or reclamation activities, refer to the information in section 8.

14. TRANSPORT INFORMATION

UN number	Not required under ADG Code.		
Proper Shipping Name	NOT CONSIDERED DANGEROUS GOODS.		
Transport Hazard Class	Not required under ADG Code.	***Subsidiary Risk***	Not required under ADG Code.
Packing Group	Not required under ADG Code.		
Environmental hazards for transport purposes	Not a known marine pollutant according to IMDG Code. Not an Annexe I chemical according to MARPOL.		
Special precautions for user	No data available.		
Additional information	No additional information required by overseas regulatory agencies or regulations for the transport of goods by other modes.		
HAZCHEM	Not required according to ADG Code.		
IMDG	Not required according to IMDG Code.		

15. REGULATORY INFORMATION

Hazard Category	The product is **Classified as a Hazardous Substance** in accordance with Safe Work Australia - Hazardous Chemicals Information System (HCIS) Australia, Globally Harmonised System (GHS) of Classification and Labelling of Chemicals.
Montreal Protocol Not an ozone depleting substance.	
The Stockholm Convention Not a persistent organic pollutant.	
The Rotterdam Convention Not a banned pesticide or industrial chemical.	

Basal Convention
Not a hazardous waste.
MARPOL
Subject to Annexe III - Harmful Substances carried in Packaged Form.
Safety, health and environmental regulations
SUSMP Classification (Aust) – Poison Schedule 6: POISON
NICNAS – No data available

16. OTHER INFORMATION

This Safety Data Sheet conforms with the "PREPARATION OF SAFETY DATA SHEETS FOR HAZARDOUS CHEMICALS Code of Practice, DECEMBER 2011" by Safe Work Australia. To meet the GHS requirements under the WHS regulations in relation to the preparation of safety data sheets for hazardous chemicals.

SDS prepared 29h September 2019 version number 4.

Legend of Abbreviations and Acronyms

ADG - Australian Dangerous Goods Code for the Transport of Dangerous Goods by Road or Rail.
AS/NZS - Australian Standards and New Zealand Standards.
BCF - Bioconcentration Factor.
CAS Number - Chemical Abstract Service Number.
GHS - Globally Harmonised System.
HCIS - Hazardous Chemicals Information System.
HSDB - Hazardous Substances Data Bank.
ECHA-CLP - European Chemicals Agency - Classification Labelling Packaging.
NICNAS-IMAP - National Industrial Chemicals Notification and Assessment Scheme - Inventory Multi-tiered Assessment and Prioritisation.
IARC - International Agency for Research on Cancer.
IERG - Initial Emergency Response Guide.
IMDG - International Maritime Dangerous Goods.
MARPOL - International Convention for the Prevention of Pollution from Ships.
OECD - Organisation for Economic Co-operation and development (guidelines for testing of chemicals).
SIDS - Screening Information Data Sets.
TWA - Time-Weighted Average.
SDS - Safety Data Sheet.
STEL -Short Term Exposure Limit.
STOT - Specific Target Organ Toxicity.
SCL - Specific Concentration Limits.
SUSMP - Standards for the Uniform Scheduling of Medicines and Poisons.
S6 - Schedule 6 Poison.
UN Number - United Nations Number.
^{o}C - Degrees Celsius.
EC_{50} -Half maximal effective concentration.
LD_{50} - Median lethal dose; is the median dosage per unit bodyweight required to kill half the members of a tested population after specified test duration.
LD_{100} - The lowest dose of a substance that under defined conditions is lethal for 100% exposed animals.
LD_{Lo} - Lethal dose low, is the lowest dosage per unit of bodyweight known to have resulted in a fatality in a particular animal species.
LC_{50} - Median lethal concentration; is the median dosage per unit body weight required to kill half the members of a tested population after a specified test duration.
mg/kg - Milligrams per kilogram.
mg/L - Milligrams per litre.
g/mL - Grams per millilitre.
mg/m^3 - Milligrams per cubic metre.
pH - Potential of hydrogen (numeric scale to specify the acidity or basicity of an aqueous solution).
w/w - Weight per weight.
% - Percent or percentage.
< - Less than.
> - Greater than.
@ - at.
mPa·s - Millipascal-second.

Classified as Hazardous

Emergency Contact 24 hours	LawrieCo Technical Manager: 0408 268 058	Poisons Information Centre: 13 11 26 (Australia) 0800 764 766 (New Zealand)

Disclaimer

The data provided is to best of LAWRIE CO's knowledge and is believed to be accurate and reliable as of the date of issue. However no expressed or implied warranties are given. LAWRIE CO cannot anticipate or control the conditions under which this information may be used. Therefore, it is the user's responsibility to satisfy themselves as to the suitability and completeness of such information for their particular use. It is the responsibility of the user to ensure that the issue is current. This information given is a non-controlled document.

Related Product Codes

BIOLTR5
BIOLTR20
BIOLTR200
BIOLTR110L
BIOLTR1000

Safety Data Sheet Revision

Issue Date:	29th September 2019
Version Number:	4
Revision Number:	4
Reason for Revision:	SDS out of date.
Previous Versions:	Version 1 original (October 2007). Version 2 (January 2014), SDS out of date, new formulation and updated to GHS. Version 2.1 (July 2017), changes to company details. Version 3 (October 2017), changes to company details. Version 4 current (September 2019), SDS out of date and change to company details.
Next Revision Due:	August 2024

End of Safety Data Sheet