

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

#### 1.1. Product identifier

Product form : Mixture  
Trade name : LEE Broth  
Product code : NCM0201  
Type of product : Food Safety -- [Food Safety]  
Part Number(s) : NCM0201|700004642

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

##### 1.2.1. Relevant identified uses

Use of the substance/mixture : Laboratory chemicals  
Scientific research and development

##### 1.2.2. Uses advised against

No additional information available

#### 1.3. Details of the supplier of the safety data sheet

Neogen Corporation  
620 Leshner Place  
48912 Lansing – Michigan  
United States of America  
T 800.234.5333  
[sds@neogen.com](mailto:sds@neogen.com) - <https://www.neogen.com/>

#### 1.4. Emergency telephone number

Emergency number : 24 hours:  
Medical: 1-800-498-5743 (U.S. and Canada) or 1-651-523-0318 (international)  
Spill/CHEMTREC: 1-800-424-9300 (U.S. and Canada) or 1-703-527-3887 (international)

### SECTION 2: Hazards identification

#### 2.1. Classification of the substance or mixture

##### Classification according to GB CLP (SI 2019:720 as amended)

Not classified

##### Adverse physicochemical, human health and environmental effects

No additional information available

#### 2.2. Label elements

##### Labelling according to GB CLP (SI 2019:720 as amended)

No labelling applicable

#### 2.3. Other hazards

##### Results of PBT and vPvB assessment

Component	
Substance(s) not meeting the PBT criteria of UK REACH regulation, in accordance with Annex XIII	Magnesium sulfate anhydrous (7487-88-9), Ferric ammonium citrate (1185-57-5), Lithium chloride (7447-41-8)
Substance(s) not meeting the vPvB criteria of UK REACH regulation, in accordance with Annex XIII	Magnesium sulfate anhydrous (7487-88-9), Ferric ammonium citrate (1185-57-5), Lithium chloride (7447-41-8)

##### Results of Endocrine Disruptor assessment

# LEE Broth

## Safety Data Sheet

According REACH Regulation 1907/2006 as retained in UK law by UK REACH SI 2019 No. 758 as amended

### Component

Substance(s) not considered as endocrine disrupting. They are not included in the list established in accordance with Article 59(1) of UK REACH for having endocrine disrupting properties, nor identified as having endocrine disrupting properties in accordance with the criteria set out in GB BPR and GB PPP

Lithium chloride(7447-41-8), Magnesium sulfate anhydrous(7487-88-9), Ferric ammonium citrate(1185-57-5)

## SECTION 3: Composition/information on ingredients

### 3.1. Substances

Not applicable

### 3.2. Mixtures

Name	Product identifier	%	Classification according to GB CLP (SI 2019:720 as amended)
Lithium chloride	CAS-No.: 7447-41-8 EC-No.: 231-212-3	5 – 10	Acute Tox. 4 (Oral), H302 (ATE=526 mg/kg bodyweight) Acute Tox. 4 (Dermal), H312 (ATE=1488 mg/kg bodyweight) STOT RE 2, H373
Magnesium sulfate anhydrous	CAS-No.: 7487-88-9 EC-No.: 231-298-2	1 – 5	Aquatic Acute 1, H400 (M=100) Aquatic Chronic 1, H410 (M=100)
Ferric ammonium citrate substance with workplace exposure limit(s)	CAS-No.: 1185-57-5 EC-No.: 214-686-6	1 – 5	Not classified

Full text of H- and EUH-statements: see section 16

## SECTION 4: First aid measures

### 4.1. Description of first aid measures

No additional information available

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

No additional information available

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

No additional information available

## SECTION 5: Firefighting measures

### 5.1. Extinguishing media

No additional information available

### 5.2. Special hazards arising from the substance or mixture

No additional information available

### 5.3. Advice for firefighters

No additional information available

# LEE Broth

## Safety Data Sheet

According REACH Regulation 1907/2006 as retained in UK law by UK REACH SI 2019 No. 758 as amended

### SECTION 6: Accidental release measures

#### 6.1. Personal precautions, protective equipment and emergency procedures

##### 6.1.1. For non-emergency personnel

No additional information available

##### 6.1.2. For emergency responders

No additional information available

#### 6.2. Environmental precautions

No additional information available

#### 6.3. Methods and material for containment and cleaning up

No additional information available

#### 6.4. Reference to other sections

No additional information available

### SECTION 7: Handling and storage

#### 7.1. Precautions for safe handling

No additional information available

#### 7.2. Conditions for safe storage, including any incompatibilities

Storage temperature : 2 – 30 °C

#### 7.3. Specific end use(s)

No additional information available

### SECTION 8: Exposure controls/personal protection

#### 8.1. Control parameters

##### 8.1.1 National occupational exposure and biological limit values

Ferric ammonium citrate (1185-57-5)	
United Kingdom - Occupational Exposure Limits	
WEL TWA (OEL TWA)	1 mg/m <sup>3</sup>
WEL STEL (OEL STEL)	2 mg/m <sup>3</sup>

##### 8.1.2. Recommended monitoring procedures

No additional information available

##### 8.1.3. Air contaminants formed

No additional information available

##### 8.1.4. DNEL and PNEC

No additional information available

##### 8.1.5. Control banding

No additional information available

#### 8.2. Exposure controls

##### 8.2.1. Appropriate engineering controls

No additional information available

# LEE Broth

## Safety Data Sheet

According REACH Regulation 1907/2006 as retained in UK law by UK REACH SI 2019 No. 758 as amended

### 8.2.2. Personal protection equipment

No additional information available

### 8.2.3. Environmental exposure controls

No additional information available

## SECTION 9: Physical and chemical properties

### 9.1. Information on basic physical and chemical properties

Physical state	: Solid
Appearance	: Powder.
Colour	: Beige.
Odour	: Characteristic.
Odour threshold	: Not available
pH	: 7.1 – 7.3
pH solution	: Not available
Melting point	: Not available
Freezing point	: Not available
Boiling point	: Not available
Flash point	: Not applicable
Flammability	: Not available
Explosive limits	: Not applicable
Vapour pressure	: Not available
Vapour pressure at 50°C	: Not available
Relative vapour density at 20°C	: Not applicable
Relative density	: Not available
Density	: Not available
Solubility	: Soluble in water.
Partition coefficient n-octanol/water (Log Kow)	: Not available
Auto-ignition temperature	: Not applicable
Decomposition temperature	: Not available
Viscosity, kinematic	: Not applicable
Explosive properties	: Not available

### 9.2. Other information

No additional information available

## SECTION 10: Stability and reactivity

### 10.1. Reactivity

No additional information available

### 10.2. Chemical stability

No additional information available

### 10.3. Possibility of hazardous reactions

No additional information available

### 10.4. Conditions to avoid

No additional information available

### 10.5. Incompatible materials

No additional information available

### 10.6. Hazardous decomposition products

No additional information available

# LEE Broth

## Safety Data Sheet

According REACH Regulation 1907/2006 as retained in UK law by UK REACH SI 2019 No. 758 as amended

### SECTION 11: Toxicological information

#### 11.1. Information on toxicological effects

Acute toxicity (oral) : Not classified (Based on available data, the classification criteria are not met)  
Acute toxicity (dermal) : Not classified (Based on available data, the classification criteria are not met)  
Acute toxicity (inhalation) : Not classified (Based on available data, the classification criteria are not met)

Magnesium sulfate anhydrous (7487-88-9)	
LD50 oral rat	> 2000 mg/kg bodyweight (OECD 425: Acute Oral Toxicity: Up-and-Down Procedure, Rat, Male / female, Experimental value, Oral, 14 day(s))
LD50 dermal rat	> 2000 mg/kg (OECD 402: Acute Dermal Toxicity, 24 h, Rat, Male / female, Read-across, Dermal, 14 day(s))

Ferric ammonium citrate (1185-57-5)	
LD50 oral rat	> 2000 mg/kg bodyweight Animal: rat, Guideline: OECD Guideline 401 (Acute Oral Toxicity), Guideline: other:
LD50 dermal rabbit	> 7940 mg/kg Source: ECHA

Lithium chloride (7447-41-8)	
LD50 oral rat	526 mg/kg (Rat, Male, Experimental value, Oral)
LD50 oral	526 mg/kg
LD50 dermal rat	> 2000 mg/kg bodyweight (OECD 402: Acute Dermal Toxicity, 24 h, Rat, Male / female, Experimental value, Dermal, 14 day(s))
LD50 dermal rabbit	1488 mg/kg Source: Corporate Solution From Thomson Micromedex
LC50 Inhalation - Rat	> 5.57 mg/l air (OECD 403: Acute Inhalation Toxicity, 4 h, Rat, Male / female, Experimental value, Inhalation (aerosol))

Skin corrosion/irritation : Not classified (Based on available data, the classification criteria are not met)  
pH: 7.1 – 7.3

Magnesium sulfate anhydrous (7487-88-9)	
pH	7 (5 %)

Ferric ammonium citrate (1185-57-5)	
pH	6 – 8 Source: ECHA

Lithium chloride (7447-41-8)	
pH	7 (57 %, 20 °C, OECD 105: Water Solubility)

Serious eye damage/irritation : Not classified (Based on available data, the classification criteria are not met)  
pH: 7.1 – 7.3

Magnesium sulfate anhydrous (7487-88-9)	
pH	7 (5 %)

Ferric ammonium citrate (1185-57-5)	
pH	6 – 8 Source: ECHA

Lithium chloride (7447-41-8)	
pH	7 (57 %, 20 °C, OECD 105: Water Solubility)

Respiratory or skin sensitisation : Not classified (Based on available data, the classification criteria are not met)  
Germ cell mutagenicity : Not classified (Based on available data, the classification criteria are not met)  
Carcinogenicity : Not classified (Based on available data, the classification criteria are not met)  
Reproductive toxicity : Not classified (Based on available data, the classification criteria are not met)

# LEE Broth

## Safety Data Sheet

According REACH Regulation 1907/2006 as retained in UK law by UK REACH SI 2019 No. 758 as amended

### Ferric ammonium citrate (1185-57-5)

NOAEL (animal/male, F0/P)	595.9 mg/kg bodyweight Animal: rat, Animal sex: male, Guideline: other:
STOT-single exposure	: Not classified (Based on available data, the classification criteria are not met)
STOT-repeated exposure	: Not classified (Based on available data, the classification criteria are not met)

### Lithium chloride (7447-41-8)

NOAEL (oral, rat, 90 days)	84.8 mg/kg bodyweight Animal: rat, Animal sex: male, Guideline: OECD Guideline 452 (Chronic Toxicity Studies)
STOT-repeated exposure	May cause damage to organs through prolonged or repeated exposure.
Aspiration hazard	: Not classified (Based on available data, the classification criteria are not met)

### Magnesium sulfate anhydrous (7487-88-9)

Viscosity, kinematic	Not applicable (solid)
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### Lithium chloride (7447-41-8)

Viscosity, kinematic	Not applicable (solid)
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### Other information

No additional information available

## SECTION 12: Ecological information

### 12.1. Toxicity

Hazardous to the aquatic environment, short-term (acute)	: Not classified (Based on available data, the classification criteria are not met)
Hazardous to the aquatic environment, long-term (chronic)	: Not classified (Based on available data, the classification criteria are not met)

### Magnesium sulfate anhydrous (7487-88-9)

LC50 - Fish [1]	680 mg/l (EPA 600/4-90/027, 96 h, Pimephales promelas, Static system, Fresh water, Read-across, Lethal)
LC50 - Fish [2]	15500 mg/l (96 h, Gambusia affinis, Static system)
EC50 - Crustacea [1]	1700 mg/l (24 h, Daphnia magna)
EC50 72h - Algae [1]	0.00411 mg/l

### Ferric ammonium citrate (1185-57-5)

LC50 - Fish [1]	> 100 mg/l (OECD 203: Fish, Acute Toxicity Test, 96 h, Static system, Fresh water, Experimental value)
LC50 - Fish [2]	> 100 mg/l Test organisms (species): other:
EC50 - Crustacea [1]	275 mg/l (48 h, Daphnia magna, Static system, Fresh water, Experimental value)
EC50 72h - Algae [1]	> 100 mg/l Test organisms (species): other:
ErC50 algae	> 100 mg/l (OECD 201: Alga, Growth Inhibition Test, 72 h, Static system, Fresh water, Experimental value)

### Lithium chloride (7447-41-8)

LC50 - Fish [1]	158 mg/l (OECD 203: Fish, Acute Toxicity Test, 96 h, Oncorhynchus mykiss, Static system, Fresh water, Experimental value, Lethal)
EC50 - Crustacea [1]	249 mg/l (OECD 202: Daphnia sp. Acute Immobilisation Test, 48 h, Daphnia magna, Static system, Fresh water, Experimental value, Locomotor effect)
EC50 72h - Algae [1]	> 400 mg/l Test organisms (species): Desmodesmus subspicatus (previous name: Scenedesmus subspicatus)

# LEE Broth

## Safety Data Sheet

According REACH Regulation 1907/2006 as retained in UK law by UK REACH SI 2019 No. 758 as amended

<b>Lithium chloride (7447-41-8)</b>	
EC50 72h - Algae [2]	112 mg/l Test organisms (species): <i>Desmodesmus subspicatus</i> (previous name: <i>Scenedesmus subspicatus</i> )
ErC50 algae	> 400 mg/l (OECD 201: Alga, Growth Inhibition Test, 72 h, <i>Desmodesmus subspicatus</i> , Static system, Fresh water, Experimental value, Nominal concentration)
LOEC (chronic)	2.53 mg/l Test organisms (species): <i>Daphnia magna</i> Duration: '21 d'
NOEC (chronic)	1.7 mg/l Test organisms (species): <i>Daphnia magna</i> Duration: '21 d'
NOEC chronic fish	17.35 mg/l Test organisms (species): <i>Danio rerio</i> (previous name: <i>Brachydanio rerio</i> ) Duration: '34 d'
NOEC chronic algae	25 mg/l

### 12.2. Persistence and degradability

<b>LEE Broth</b>	
Persistence and degradability	Not rapidly degradable

<b>Magnesium sulfate anhydrous (7487-88-9)</b>	
Persistence and degradability	Biodegradability: not applicable.
Chemical oxygen demand (COD)	Not applicable (inorganic)
ThOD	Not applicable (inorganic)

<b>Ferric ammonium citrate (1185-57-5)</b>	
Persistence and degradability	Readily biodegradable in water.

<b>Lithium chloride (7447-41-8)</b>	
Persistence and degradability	Biodegradability in soil: not applicable, Biodegradability: not applicable.
Chemical oxygen demand (COD)	Not applicable (inorganic)
ThOD	Not applicable (inorganic)

### 12.3. Bioaccumulative potential

<b>Magnesium sulfate anhydrous (7487-88-9)</b>	
Bioaccumulative potential	Not bioaccumulative.

<b>Ferric ammonium citrate (1185-57-5)</b>	
Partition coefficient n-octanol/water (Log Pow)	-0.737 (Calculated, 25 °C)
Bioaccumulative potential	Not bioaccumulative.

<b>Lithium chloride (7447-41-8)</b>	
Partition coefficient n-octanol/water (Log Pow)	-0.46 (Estimated value, KOWWIN, 20 °C)
Bioaccumulative potential	Not bioaccumulative.

### 12.4. Mobility in soil

<b>Magnesium sulfate anhydrous (7487-88-9)</b>	
Surface tension	No data available in the literature
Ecology - soil	No (test)data on mobility of the substance available.

<b>Ferric ammonium citrate (1185-57-5)</b>	
Ecology - soil	No (test)data on mobility of the substance available.

# LEE Broth

## Safety Data Sheet

According to REACH Regulation 1907/2006 as retained in UK law by UK REACH SI 2019 No. 758 as amended

Lithium chloride (7447-41-8)	
Surface tension	No data available (test not performed)
Ecology - soil	Low potential for adsorption in soil. May be harmful to plant growth, blooming and fruit formation.

### 12.5. Results of PBT and vPvB assessment

Component	
Magnesium sulfate anhydrous (7487-88-9)	This substance does not meet the PBT criteria of UK REACH regulation, annex XIII This substance does not meet the vPvB criteria of UK REACH regulation, annex XIII
Ferric ammonium citrate (1185-57-5)	This substance does not meet the PBT criteria of UK REACH regulation, annex XIII This substance does not meet the vPvB criteria of UK REACH regulation, annex XIII
Lithium chloride (7447-41-8)	This substance does not meet the PBT criteria of UK REACH regulation, annex XIII This substance does not meet the vPvB criteria of UK REACH regulation, annex XIII

### 12.6. Other adverse effects

Ozone : Not classified (Based on available data, the classification criteria are not met)

## SECTION 13: Disposal considerations

### 13.1. Waste treatment methods

HP Code : HP14 - "Ecotoxic:" waste which presents or may present immediate or delayed risks for one or more sectors of the environment

## SECTION 14: Transport information

In accordance with ADR / IMDG / IATA / ADN / RID

ADR	IMDG	IATA	ADN	RID
<b>14.1. UN number</b>				
Not applicable	Not regulated	Not regulated	Not applicable	Not applicable
<b>14.2. UN proper shipping name</b>				
Not applicable	Not regulated	Not regulated	Not applicable	Not applicable
<b>Transport document description</b>				
Not applicable	Not regulated	Not regulated	Not applicable	Not applicable
<b>14.3. Transport hazard class(es)</b>				
Not applicable	Not regulated	Not regulated	Not applicable	Not applicable
<b>14.4. Packing group</b>				
Not applicable	Not regulated	Not regulated	Not applicable	Not applicable
<b>14.5. Environmental hazards</b>				
Not applicable	Not regulated	Not regulated	Not applicable	Not applicable
No supplementary information available				

### 14.6. Special precautions for user

#### Overland transport

Not applicable

# LEE Broth

## Safety Data Sheet

According REACH Regulation 1907/2006 as retained in UK law by UK REACH SI 2019 No. 758 as amended

### Transport by sea

Not regulated

### Air transport

Not regulated

### Inland waterway transport

Not applicable

### Rail transport

Not applicable

## 14.7. Transport in bulk according to Annex II of Marpol and the IBC Code

Not applicable

## SECTION 15: Regulatory information

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

#### 15.1.1. National regulations

##### UK REACH Annex XVII (Restriction List)

This product contains no substance(s) listed on UK REACH Annex XVII (Restriction List) equal to or above the level of SDS disclosure

##### UK REACH Annex XIV (Authorisation List)

This product contains no substance(s) listed on UK REACH Annex XIV (Authorisation List) equal to or above the 0.1% level of disclosure

##### UK REACH Candidate List (SVHC)

This product contains no substance(s) listed on the UK REACH Candidate List (SVHC) above the 0.1% level of disclosure

##### GB PIC Regulation (Prior Informed Consent)

This product contains no substance(s) listed on the GB PIC List equal to or above the level of SDS disclosure

##### POP Regulation (Persistent Organic Pollutants)

This product contains no substance(s) listed on the GB POP List equal to or above the level of SDS disclosure

##### Ozone Regulation (S.I. No. 168 of 2015)

This product contains no substance(s) listed on the GB Ozone Depletion List equal to or above the level of SDS disclosure

##### Control of Poisons and Explosives Precursors Act

This product contains no substance(s) listed as a reportable poison on the Control of Poisons and Explosives Precursors Regulations equal to or above the level of SDS disclosure

This product contains no substance(s) listed as a regulated poison on the Control of Poisons and Explosives Precursors Regulations equal to or above the level of SDS disclosure

This product contains no substance(s) listed as a reportable explosive precursor on the Control of Poisons and Explosives Precursors Regulations equal to or above the level of SDS disclosure

This substance is not listed as a regulated poison on the Control of Poisons and Explosives Precursors Regulations

##### Drug Precursors Regulation (EC 273/2004)

This product contains no substance(s) listed on the GB Drug Precursors List equal to or above the level of SDS disclosure

#### 15.1.2. Other Information

### 15.2. Chemical safety assessment

No additional information available

## SECTION 16: Other information

### Full text of H- and EUH-statements:

Acute Tox. 4 (Dermal)	Acute toxicity (dermal), Category 4
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# LEE Broth

## Safety Data Sheet

According REACH Regulation 1907/2006 as retained in UK law by UK REACH SI 2019 No. 758 as amended

Full text of H- and EUH-statements:	
Acute Tox. 4 (Oral)	Acute toxicity (oral), Category 4
Aquatic Acute 1	Hazardous to the aquatic environment – Acute Hazard, Category 1
Aquatic Chronic 1	Hazardous to the aquatic environment – Chronic Hazard, Category 1
Eye Irrit. 2	Serious eye damage/eye irritation, Category 2
Skin Irrit. 2	Skin corrosion/irritation, Category 2
STOT RE 2	Specific target organ toxicity – Repeated exposure, Category 2
H302	Harmful if swallowed.
H312	Harmful in contact with skin.
H315	Causes skin irritation.
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.

Safety Data Sheet (SDS), UK

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.