**SAFETY DATA SHEET**
**Nutrisphere-N for Granular Nitrogen Fertilisers**
Date reviewed: 16/01/2017
Revision No.: 2

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

### 1.1: Product Identifier

Trade name: Nutrisphere-N for Granular Nitrogen Fertilisers. Aqueous solution of maleic-itaconic copolymer partial calcium salt.

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

Registered uses: Agronomic additive for granular nitrogen fertilisers.
Uses advised against: None known.

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

Company name: Verdesian Life Sciences LLC
1001 Winstead Drive
Cary
NC-27513
USA
Telephone: +1 919 825 1901

European contact name: Verdesian Life Sciences Europe Ltd
Address: 7 Rotherbrook Court
Bedford Road
Petersfield GU32 3QG
UK
Telephone: +44 (0)1730 720100

Homepage: www.vlsci.com

### 1.4: Emergency telephone number

**Emergency telephone: +44 1235 239670**

## Section 2: Hazards Identification

### 2.1 Classification of the substance or mixture

Classification under CLP: Skin sensitiser 1B: H317

### 2.2 Label Elements (In compliance with EC Regulation No. 1272/2008 (CLP), as amended)

Hazard pictograms:

Signal word: Warning

**H-Statements**

| | |
|---|---|
| H317 | May cause an allergic skin reaction. |

**Precautionary-Statements**

| | |
|---|---|
| P261 | Avoid breathing mists/vapours/aerosols. |
| P280 | Wear protective gloves/protective clothing. |
| P302 + P352 | IF ON SKIN: Wash with plenty of water and soap. |
| P333 + P313 | If skin irritation or rash occurs: Get medical advice/attention. |
| P363 | Wash contaminated clothing before reuse. |
| P501 | Dispose of the contents/container in a collection centre for dangerous goods and hazardous waste in accordance to local, regional, national and/or international regulations. |

### 2.3 Other hazards

Further hazards were not determined with the current level of knowledge.

## Section 3: Composition/information on ingredients

**Product type:** This product is a mixture.

| CAS No. | EEC No. | Substance Name | Classification* | Range (%) |
|---|---|---|---|---|
| 877469-38-0 | - | Maleic-itaconic copolymer, partial calcium salt | - | 30 - 50 |
| 110-16-7 | 203-742-5 | Maleic acid | Acute Tox. 4: H302<br>Skin Irrit. 2: H315<br>Skin Sens. 1: H317<br>Eye Irrit. 2: H319<br>STOT SE 3: H335 | < 1 |

*For full text of H statements see Section 16

## Section 4: First Aid Measures

### 4.1 Description of first aid measures

**Inhalation:** Remove casualty from exposure ensuring one's own safety whilst doing so. Ensure supply of fresh air. Consult a doctor.

**Skin contact:** Remove all contaminated clothes and footwear immediately unless stuck to the skin. Drench the affected skin with running water for 10 minutes or longer if substance is still on skin. Consult a doctor.

**Eye contact:** Remove contact lenses, if present and easy to do so. Bathe the eye with running water for 15 minutes. Consult a doctor.

**Ingestion:** Wash out mouth with water. Do not induce vomiting. If conscious, give half a litre of water to drink immediately. Consult a doctor.

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

**Inhalation:** There may be irritation of the throat with a feeling of tightness in the chest.

**Skin contact:** There may be irritation and redness at the site of contact.

**Eye contact:** There may be irritation and redness. The eyes may water profusely.

**Ingestion:** There may be soreness and redness of the mouth and throat. Nausea and stomach pain may occur. There may be vomiting.

**Delayed/immediate effects:** Immediate effects can be expected after short-term exposure.

**4.3 Indication of any immediate medical attention and treatment needed**

**Immediate/special treatment:** Not applicable. Treat symptomatically.

## Section 5: Firefighting Measures

**5.1 Extinguishing media**

**Suitable:** Foam, dry powder, water spray jet, carbon dioxide.

**Unsuitable:** Not determined

**5.2 Special hazards arising from the substance or mixture**

**Exposure hazards:** Risk of formation of toxic pyrolysis products: Carbon monoxide (CO), Carbon dioxides ($CO_2$).

**5.3 Advice for firefighters**

Wear self-contained breathing apparatus. Wear protective clothing to prevent contact with skin or eyes. Fire residues and contaminated firefighting water must be disposed of in accordance with local regulations.

## Section 6: Accidental release measures

**6.1 Personal precautions, protective equipment and emergency procedures**

**Personal precautions:** Refer to Section 8 of the SDS. If outside do not approach from downwind and keep bystanders away from danger point. Mark out the contaminated area with signs and prevent access to unauthorised personnel. Turn leaking containers leak-side up to prevent escape of liquid. High risk of slipping due to leakage/spillage of product. Use personal protective equipment.

**6.2 Environmental Precautions**

**Environmental precautions:** Do not discharge into drains or rivers. Contain the spillage using bunding to prevent spread over a wide area.

**6.3 Methods for cleaning up**

**Clean-up procedures:** Absorb into an absorbent material (e.g. sand, sawdust, universal absorbent, diatomaceous earth). Transfer to a closeable, labelled salvage container for disposal in accordance with local regulations.

**6.4 Reference to other sections**

**Reference to other sections:** Refer to Section 8 of the SDS.

## Section 7: Handling and Storage

### 7.1 Precautions for safe handling

**Handling:** The normal safety precautions for handling chemicals must be observed. Avoid direct contact with the substance. Use only in well ventilated areas. Do not eat, drink or smoke when using this product. Wash hands before breaks and after work. Use skin barrier cream.

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

**Storage conditions:** Store in cool, dry, well ventilated area. Keep container tightly closed. Do not store together with animal feed/diet. Protect from frost. The floor of the storage area must be impermeable to prevent the escape of liquids.

**Suitable packaging:** Must only be kept in original packaging.

### 7.3 Specific end use(s)

**Specific end use:** See product use, Section 1.2.

## Section 8: Exposure controls/personal protection

### 8.1 Control parameters

**Workplace exposure limits:** No data available**.**
**DNEL/PNEC:** No data available.

### 8.2 Exposure controls

**Engineering measures:** Ensure there is sufficient ventilation of the area.
**Environmental:** Comply with applicable environmental regulations limiting discharge to air, water and soil. Prevent from entering public sewers.
**Hand protection:** Use impermeable gloves.
**Eye protection:** Safety glasses. Ensure eye bath is to hand.
**Skin protection:** Impermeable protective clothing.
**Respiratory protection:** Use self-contained breathing apparatus in the event of aerosol or mist formation.
**Thermal hazards:** Not applicable.

## Section 9: Physical and Chemical Properties

### 9.1 Information on basic physical and chemical properties

| | | | |
|---|---|---|---|
| **Form/state** | Liquid | **Explosion limit** | No data available |
| **Colour** | Tan - brown | **Vapour pressure** | No data available |
| **Odour** | No data available | **Vapour density** | No data available |
| **Odour threshold** | No data available | **Relative density** | 1.249 – 1.208 g/ml |
| **pH** | 2.25 – 2.75 | **Solubility in water** | Miscible |
| **Melting point** | No data available | **Part. Coeff. N-octanol/water** | No data available |

| | | | |
|---|---|---|---|
| **Freezing point** | -4˚C | **Auto-ignition temperature** | No data available |
| **Initial Boiling point** | No data available | **Decomposition temperature** | No data available |
| **Boiling range** | No data available | **Viscosity** | < 50 cP |
| **Flash point** | No data available | **Explosive properties** | Not explosive (Based on composition) |
| **Evaporation rate** | No data available | **Oxidizing properties** | Not oxidising (Based on composition) |
| **Flammability** | Non-flammable (Based on composition) | | |

**9.2 Other information**

**Other information:** No data available.

## Section 10: Stability and Reactivity

**10.1 Reactivity**

**Reactivity:** Not reactive under normal conditions

**10.2 Chemical stability**

**Chemical stability:** Stable under recommended storage conditions.

**10.3 Possibility of hazardous reactions**

**Hazardous reactions:** On exposure to elevated temperatures, this mixture may release dangerous decomposition products such as carbon oxides and fumes.

**10.4 Conditions to avoid**

**Conditions to avoid:** Incompatible materials.

**10.5 Incompatible materials**

**Materials to avoid:** Strong oxidising agents, strong reducing agents, materials incompatible with water, materials incompatible with calcium salts, materials incompatible with carboxylates.

**10.6 Hazardous decomposition products**

Carbon oxides

## Section 11: Toxicological Information

**11.1 Acute toxicity**

| | |
|---|---|
| Acute Toxicity | Oral $LD_{50}$ > 2000 mg/kg (OECD No. 423, rat) |
| | Dermal $LD_{50}$ >2000 mg/kg (OECD No. 402, rat) |
| Eye damage/irritation: | Not damaging/Not irritant (OECD No. 405, rabbit) |
| Skin corrosion/irritation: | Not corrosive/Not irritant (OECD No. 404, rabbit) |
| Respiratory or Skin sensitisation: | Skin sensitizer Catergory1B (LLNA, mouse) |

| | |
|---|---|
| STOT (single exposure): | Not determined |
| STOT (repeated): | Not determined |
| Germ cell mutagenicity: | Not determined |
| Carcinogenicity: | Not determined |
| Reproductive and lactation toxicity: | Not determined |
| Aspiration hazard: | Not determined |

## Section 12: Ecological Information

### 12.1 Toxicity

**General remarks**

The product does not present a danger to the environment: see results of biological impact studies below. There is no environmental classification under the CLP regulation based on these test results.

The tests were conducted on Nutrisphere –N for Granular Nitrogen Fertilisers.

Fish (*Brachydanio rerio*), NF EN ISO 7346-1, 1998:
At 12.7 L/ha (= 10 x agronomic dose), no mortality.

Daphnia (*Daphnia magna*) NF EN ISO 6341, 2012:
At 12.7 L/ha (= 10 x agronomic dose), no immobilisation.

Algae (*Pseudokirchneriella subcapitata)* NF EN ISO 8692, 2012:
At 12.7 L/ha (= 10 x agronomic dose), inhibited growth < 2 %

Earthworm (*Eisenia fetida*) NF ISO 11268-2, 2012:
At 12.7 L/ha (= 10 x agronomic dose), no mortality at 28 days, and 19% reproductive inhibition.
At 3.81 L/ha (= 3 x agronomic dose), no mortality at 28 days and 7% reproductive inhibition.
At 1.27 L/ha (= dose agronomic), no mortality at 28 days and no reproductive inhibition.

Terrestrial plants (*Avena sativa*) NF ISO 11269-2, 2013:
At 12.7 L/ha (= 10 x agronomic dose) and at 3.81 L/ha (= 3 x agronomic dose), no germination inhibition, no growth inhibition.

At 1.27 L/ha (= agronomic growth), 2.9% germination inhibition and no growth inhibition.

Terrestrial plants *(Brassica napus*) NF 1SO 11269-2, 2013:
At 12.7 L/ha (= 10 x agronomic dose), at 3.81 L/ha (= 3 x agronomic dose) and at 1.27 L/ha (= agronomic dose), ≤ 2.5% germination inhibition and no growth inhibition.

### 12.2 Persistence and degradability

**Persistence/biodegradability:** No data available.

### 12.3 Bio accumulative potential

**Bioaccumulative potential:** No data available.

### 12.4 Mobility in soil

**Mobility:** No data available.

**12.5 Results of PBT and vPvB assessment**

**PBT identification:** This product has not been evaluated for PBT/vPvB characteristics.

**12.6 Other adverse effects**

No information available.

## Section 13: Disposal Considerations

**13.1 Waste treatment methods**

**Disposal procedure:** Transfer to a suitable container and arrange for collection by specialised disposal company.
**Recovery operations:** Not applicable.
**Disposal of packaging:** Dispose of as normal industrial waste at an approved site.
**N.B.:** The users attention is drawn to the possible existence of regional or national regulations regarding disposal.

## Section 14: Transport Information

**14.1 UN Number**

**UN number:** See Section 14.2 in accordance with UN shipping name.

**14.2 UN proper shipping name**

**Shipping name:** Not classified as "dangerous goods", exempt from transport classification and labelling.

**14.3 Transport hazard classes**

**Transport class:** See Section 14.2 in accordance with UN shipping name.

**14.4 Packing group**

**Packing group:** See Section 14.2 in accordance with UN shipping name.

**14.5 Environmental hazards**

**Environmentally hazardous:** See Section 14.2 in accordance with UN shipping name.

**14.6 Special precautions for user**

**Special precautions:** No special precautions. See relevant information in Sections 6 to 8.

## Section 15: Regulatory Information

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

Specific regulations: Not applicable.

**15.2 Chemical Safety Assessment**

A chemical safety assessment has not been carried out for the substances in this mixture.

## Section 16: Other Information

Phrases in Sections 2-3:

H302 Harmful if swallowed.
H315 Causes skin irritation.
H317 May cause an allergic skin reaction.
H319 Causes serious eye irritation.
H335 May cause respiratory irritation.

Other information:

This safety data sheet is prepared in accordance with Regulation (EC) No. 1907/2006 (REACH) and 1272/2008 (CLP) as amended in each case.

Abbreviations:

CLP: Classification, Labelling and Packaging.
DNEL: Derived No Effect Level.
LC50: Lethal concentration, 50%.
LD50: Median lethal dose.
LLNA: Local Lymph Node Assay.
OECD: Organisation for Economic Co-operation and Development.
PBT: Persistent, Bioaccumulative and Toxic substance.
PNEC: Predicted No-Effect Concentration.
REACH: Registration, Evaluation, Authorisation and Restriction of Chemicals.
VOC: Volatile Organic Compound.
vPvB: Very Persistent and very Bioaccumulative.

Legal disclaimer:

The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The company shall not be held liable for any damage resulting from handling or from contact with the above product.