# SAFETY DATA SHEET according to the OSHA Hazard Communication Standard

Version 6.11
Revision Date 07/15/2026
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## SECTION 1. IDENTIFICATION

### 1.1 Product identifiers

Product name : Phytamax™ Orchid Multiplication Medium

Product Number : P6793
Brand : Sigma

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

Identified uses : Laboratory chemicals, Synthesis of substances

Restrictions on use : Not Available

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

Company : Sigma-Aldrich Inc.
3050 SPRUCE ST
ST. LOUIS MO 63103
UNITED STATES

Telephone : +1 314 771-5765
Fax : +1 800 325-5052

### 1.4 Emergency telephone number

Emergency Phone # : 800-424-9300 CHEMTREC (USA) +1-703-527-3887 CHEMTREC (International) 24 Hours/day; 7 Days/week

## SECTION 2. HAZARDS IDENTIFICATION

**GHS classification in accordance with the OSHA Hazard Communication Standard (29 CFR 1910.1200)**

**Hazards for the product as supplied**

Not a hazardous substance or mixture.

**Other hazards**

None known.



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**GHS label elements**

No hazard pictogram, no signal word, no hazard statement(s), no precautionary statement(s) required.

## SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture : Mixture

CAS-No. : Not Assigned

**Components**

| Chemical name | CAS No./Unique ID | Concentration (% w/w) | Trade secret |
|---|---|---|---|
| Saccharose | 57-50-1* | >= 70 - < 90 | - |
| Ammonium nitrate | 6484-52-2* | >= 1 - < 5 | - |

* Indicates that the identifier is a CAS No.
Actual concentration is withheld as a trade secret

## SECTION 4. FIRST AID MEASURES

If inhaled : After inhalation: fresh air.

In case of skin contact : In case of skin contact: Take off immediately all contaminated clothing. Rinse skin with water/ shower.

In case of eye contact : After eye contact: rinse out with plenty of water. Remove contact lenses.

If swallowed : After swallowing: make victim drink water (two glasses at most). Consult doctor if feeling unwell.

Most important symptoms and effects, both acute and delayed : The most important known symptoms and effects are described in the labelling (see section 2 GHS label elements) and/or in section 11

Protection of first-aiders : For personal protection see section 8.

Notes to physician : No data available

## SECTION 5. FIREFIGHTING MEASURES

Suitable extinguishing media : Water
Foam
Carbon dioxide (CO2)
Dry powder



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| | | |
|---|---|---|
| Unsuitable extinguishing media | : | For this substance/mixture no limitations of extinguishing agents are given. |
| Specific hazards during fire fighting | : | Mixture with combustible ingredients.<br><br>Development of hazardous combustion gases or vapours possible in the event of fire. |
| Hazardous combustion products | : | Carbon oxides<br><br>Nitrogen oxides (NOx)<br><br>Sulphur oxides<br><br>Hydrogen chloride gas<br><br>Potassium oxides<br><br>Sodium oxides<br><br>Cobalt/cobalt oxides<br><br>Molybdenum oxides<br><br>Copper oxides |
| Specific extinguishing methods | : | No data available |
| Further information | : | Suppress (knock down) gases/vapours/mists with a water spray jet.<br>Prevent fire extinguishing water from contaminating surface water or the ground water system. |
| Special protective equipment for fire-fighters | : | In the event of fire, wear self-contained breathing apparatus. |



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## SECTION 6. ACCIDENTAL RELEASE MEASURES

| | | |
|---|---|---|
| Personal precautions, protective equipment and emergency procedures | : | Advice for non-emergency personnel:<br>Avoid inhalation of dusts.<br>Ensure adequate ventilation.<br>Evacuate the danger area, observe emergency procedures, consult an expert.<br>Advice for emergency responders:<br>Wear appropriate personal protective equipment, as indicated in Section 8. |
| Environmental precautions | : | Do not let product enter drains. |
| Methods and materials for containment and cleaning up | : | Cover drains. Collect, bind, and pump off spills.<br>Observe possible material restrictions (see sections 7 and 10).<br>Take up dry. Dispose of properly. Clean up affected area. Avoid generation of dusts. |

## SECTION 7. HANDLING AND STORAGE

For precautions see section 2 GHS label elements

| | | |
|---|---|---|
| Further information on storage conditions | : | Tightly closed.<br>Dry. |
| Storage class | : | 11, Combustible Solids |
| Recommended storage temperature | : | 36 - 46 °F / 2 - 8 °C |

## SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

**Ingredients with workplace control parameters**

| Components | CAS-No. | Value type (Form of exposure) | Control parameters / Permissible concentration | Basis |
|---|---|---|---|---|
| Saccharose | 57-50-1 | TWA | 10 mg/m3 | ACGIH |
| | | TWA (Respirable) | 5 mg/m3 | NIOSH REL |
| | | TWA (total) | 10 mg/m3 | NIOSH REL |



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| | | | | |
|---|---|---|---|---|
| | | TWA (total dust) | 15 mg/m3 | OSHA Z-1 |
| | | TWA (respirable fraction) | 5 mg/m3 | OSHA Z-1 |

**Engineering measures** : No data available

**Personal protective equipment**

Respiratory protection : required when dusts are generated.

Our recommendations on filtering respiratory protection are based on the following standards: DIN EN 143, DIN 14387 and other accompanying standards relating to the used respiratory protection system.

Recommended Filter type: : Filter type P2

The entrepeneur has to ensure that maintenance, cleaning and testing of respiratory protective devices are carried out according to the instructions of the producer. These measures have to be properly documented.

Hand protection

| | | |
|---|---|---|
| Material | : | Nitrile rubber |
| Break through time | : | 480 min |
| Glove thickness | : | 0.11 mm |
| Protective index | : | Full contact |
| Manufacturer | : | KCL 741 Dermatril® L |

| | | |
|---|---|---|
| Material | : | Nitrile rubber |
| Break through time | : | 480 min |
| Glove thickness | : | 0.11 mm |
| Protective index | : | Splash contact |
| Manufacturer | : | KCL 741 Dermatril® L |

Remarks : Handle with impervious gloves.
This recommendation applies only to the product stated in the safety data sheet, supplied by us and for the designated use. When dissolving in or mixing with other substances and under conditions deviating from those stated in EN 16523-1 please contact the supplier of CE-approved gloves (e.g. KCL GmbH, D-36124 Eichenzell, Internet: www.kcl.de).



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| | | |
|---|---|---|
| Eye protection | : | Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).<br>Safety glasses |
| Hygiene measures | : | Change contaminated clothing. Wash hands after working with substance. |

## SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

| | | |
|---|---|---|
| Appearance | : | powder |
| Colour | : | white, yellow-orange |
| Odour | : | No data available |
| Odour Threshold | : | No data available |
| pH | : | No data available |
| Melting point | : | No data available |
| Boiling point/boiling range | : | No data available |
| Flash point | : | Not applicable |
| Evaporation rate | : | No data available |
| Flammability (solid, gas) | : | No data available |
| Flammability (liquids) | : | No data available |
| Burning rate | : | No data available |
| Upper explosion limit / Upper flammability limit | : | No data available |
| Lower explosion limit / Lower flammability limit | : | No data available |
| Vapour pressure | : | No data available |
| Relative vapour density | : | No data available |
| Relative density | : | No data available |
| Density | : | No data available |
| Water solubility | : | No data available |



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| | | |
|---|---|---|
| Partition coefficient: n-octanol/water | : | No data available |
| Autoignition temperature | : | No data available |
| Decomposition temperature | : | No data available |
| Viscosity, dynamic | : | No data available |
| Viscosity, kinematic | : | No data available |
| Flow time | : | No data available |
| Explosive properties | : | Not classified as explosive. |
| Oxidizing properties | : | none |
| Particle characteristics<br>Particle size | :<br>: | <br>No data available |

## SECTION 10. STABILITY AND REACTIVITY

| | | |
|---|---|---|
| Reactivity | : | The following applies in general to flammable organic substances and mixtures: in correspondingly fine distribution, when whirled up a dust explosion potential may generally be assumed. |
| Chemical stability | : | The product is chemically stable under standard ambient conditions (room temperature) . |
| Possibility of hazardous reactions | : | No data available |
| Conditions to avoid | : | no information available |
| Incompatible materials | : | No data available |
| Hazardous decomposition products | : | For Hazardous combustion products in the event of fire: see section 5 |

## SECTION 11. TOXICOLOGICAL INFORMATION

### 11.1 Information on toxicological effects

**Mixture**

**Acute toxicity**
Oral: No data available



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Acute toxicity estimate Oral - > 5,000 mg/kg
(Calculation method)
Inhalation: No data available
Dermal: No data available

**Skin corrosion/irritation**
No data available

**Serious eye damage/eye irritation**
No data available

**Respiratory or skin sensitization**
No data available

**Germ cell mutagenicity**
No data available

**Carcinogenicity**

IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

OSHA: No component of this product present at levels greater than or equal to 0.1% is on OSHA's list of regulated carcinogens.

**Reproductive toxicity**
No data available

**Specific target organ toxicity - single exposure**
No data available

**Specific target organ toxicity - repeated exposure**
No data available

**Aspiration hazard**
No data available

## 11.2 Additional Information

Liver - Irregularities - Based on Human Evidence

Stomach - Irregularities - Based on Human Evidence

**Components**

**Saccharose**

**Acute toxicity**
LD50 Oral - Rat - 29,700 mg/kg
Remarks: Behavioral:Somnolence (general depressed activity).
Cyanosis
Diarrhoea
(RTECS)
Inhalation: No data available
Dermal: No data available



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**Skin corrosion/irritation**
No data available

**Serious eye damage/eye irritation**
No data available

**Respiratory or skin sensitization**
No data available

**Germ cell mutagenicity**
Test Type: Mutagenicity (mammal cell test):
Result: negative
Remarks: (National Toxicology Program)

**Carcinogenicity**
No data available

**Reproductive toxicity**
No data available

**Specific target organ toxicity - single exposure**
No data available

**Specific target organ toxicity - repeated exposure**
No data available

**Aspiration hazard**
No data available

**Ammonium nitrate**

**Acute toxicity**
LD50 Oral - Rat - male and female - 2,950 mg/kg
(OECD Test Guideline 401)
Symptoms: Nausea, Vomiting, Diarrhoea, Irritations of mucous membranes in the mouth, pharynx, oesophagus and gastrointestinal tract.
LC50 Inhalation - Rat - 4 h - > 88.8 mg/l - dust/mist
Remarks: (IUCLID)
Symptoms: Symptoms may be delayed., mucosal irritations
LD50 Dermal - Rat - male and female - > 5,000 mg/kg
(OECD Test Guideline 402)

**Skin corrosion/irritation**
Skin - Rabbit
Result: No skin irritation - 4 h
(OECD Test Guideline 404)

**Serious eye damage/eye irritation**
Eyes - Rabbit
Result: Irritating to eyes. - 24 h
(OECD Test Guideline 405)

**Respiratory or skin sensitization**
Local lymph node assay (LLNA) - Mouse



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Result: negative
(OECD Test Guideline 429)
Remarks: The value is given in analogy to the following substances: Nitric acid ammonium calcium salt (1:?:?)

**Germ cell mutagenicity**
Test Type: Chromosome aberration test in vitro
Test system: Chinese hamster ovary cells
Result: negative
Test Type: In vitro mammalian cell gene mutation test
Test system: mouse lymphoma cells
Result: negative
Test Type: Ames test
Test system: Escherichia coli/Salmonella typhimurium
Result: negative

**Carcinogenicity**
No data available

**Reproductive toxicity**
No data available

**Specific target organ toxicity - single exposure**
Acute oral toxicity - Nausea, Vomiting, Diarrhoea, Irritations of mucous membranes in the mouth, pharynx, oesophagus and gastrointestinal tract.
Acute inhalation toxicity - Symptoms may be delayed., mucosal irritations

**Specific target organ toxicity - repeated exposure**

**Aspiration hazard**
No data available

## SECTION 12. ECOLOGICAL INFORMATION

**Ecotoxicity**

**Components:**

**Ammonium nitrate:**

| | | |
|---|---|---|
| Toxicity to daphnia and other aquatic invertebrates | : | EC50 (Daphnia magna (Water flea)): 490 mg/l<br>Exposure time: 48 h<br>Remarks: (ECHA)<br>The value is given in analogy to the following substances:<br>The value is given in analogy to the following substances: potassium nitrate |
| Toxicity to algae/aquatic plants | : | ErC50 (diatoms): > 1,700 mg/l<br>Exposure time: 10 Days<br>Test Type: static test<br>Analytical monitoring: yes<br>Remarks: (ECHA)<br>The value is given in analogy to the following substances: |



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| | | |
|---|---|---|
| | | The value is given in analogy to the following substances: potassium nitrate |
| Toxicity to microorganisms | : | EC50 (activated sludge): > 1,000 mg/l<br>Exposure time: 3 h<br>Method: OECD Test Guideline 209<br>GLP: yes<br>Remarks: The value is given in analogy to the following substances:<br>The value is given in analogy to the following substances: sodium nitrate |

**Persistence and degradability**

**Components:**

**Ammonium nitrate:**

| | | |
|---|---|---|
| Biodegradability | : | Remarks: The methods for determining biodegradability are not applicable to inorganic substances. |

**Bioaccumulative potential**

**Components:**

**Saccharose:**

| | | |
|---|---|---|
| Partition coefficient: n-octanol/water | : | log Pow: -3.277<br>Remarks: Bioaccumulation is not expected. |

**Ammonium nitrate:**

| | | |
|---|---|---|
| Partition coefficient: n-octanol/water | : | Remarks: Not applicable for inorganic substances |

**Mobility in soil**

No data available

**Other adverse effects**

**Components:**

**Ammonium nitrate:**

| | | |
|---|---|---|
| Additional ecological information | : | Biological effects:<br><br>Hazard for drinking water supplies.<br><br>Fertilising effect possible.<br><br>Discharge into the environment must be avoided. |



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**Endocrine disrupting properties**

No data available

## SECTION 13. DISPOSAL CONSIDERATIONS

**Disposal methods**

Waste from residues : Waste material must be disposed of in accordance with the national and local regulations. Leave chemicals in original containers. No mixing with other waste. Handle uncleaned containers like the product itself.

## SECTION 14. TRANSPORT INFORMATION

**International Regulations**

**IATA-DGR**

Not regulated as a dangerous good

**IMDG-Code**

Not regulated as a dangerous good

**Transport in bulk according to IMO instruments**

Not applicable for product as supplied.

**National Regulations**

**49 CFR**

Not regulated as a dangerous good

Poison Inhalation Hazard : No

**Special precautions for user**

Remarks : Not classified as dangerous in the meaning of transport regulations.

## SECTION 15. REGULATORY INFORMATION

**CERCLA Reportable Quantity**

Listed substances in the product are at low enough levels to not be expected to exceed the RQ

**SARA 304 Extremely Hazardous Substances Reportable Quantity**

This material does not contain any components with a section 304 EHS RQ.

**SARA 302 Extremely Hazardous Substances Threshold Planning Quantity**

This material does not contain any components with a section 302 EHS TPQ.

**SARA 311/312 Hazards** : Acute Health Hazard
Chronic Health Hazard



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**SARA 313** : The following components are subject to reporting levels established by SARA Title III, Section 313:

| | | |
|---|---|---|
| potassium nitrate | 7757-79-1 | >= 1 - < 5 % |
| Ammonium nitrate | 6484-52-2 | >= 1 - < 5 % |

**US State Regulations**

**Massachusetts Right To Know**

| | |
|---|---|
| Saccharose | 57-50-1 |
| potassium nitrate | 7757-79-1 |
| Ammonium nitrate | 6484-52-2 |

**Pennsylvania Right To Know**

| | |
|---|---|
| Saccharose | 57-50-1 |
| potassium nitrate | 7757-79-1 |
| Ammonium nitrate | 6484-52-2 |
| Ferrous sulfate heptahydrate | 7782-63-0 |
| Manganese Sulfate Monohydrate | 10034-96-5 |
| Zinc sulfate heptahydrate | 7446-20-0 |

**Maine Chemicals of High Concern**

Product does not contain any listed chemicals

**Vermont Chemicals of High Concern**

| | |
|---|---|
| Disodium molybdate dihydrate | 10102-40-6 |
| Cobalt dichloride hexahydrate | 7791-13-1 |

**Washington Chemicals of High Concern**

| | |
|---|---|
| Cobalt dichloride hexahydrate | 7791-13-1 |

**The components of this product are reported in the following inventories:**

US TSCA : Product contains substance(s) not listed on TSCA inventory.

**TSCA list**

No substances are subject to a Significant New Use Rule.

No substances are subject to TSCA 12(b) export notification requirements.

## SECTION 16. OTHER INFORMATION

**Full text of other abbreviations**

| | | |
|---|---|---|
| ACGIH | : | USA. ACGIH Threshold Limit Values (TLV) |
| NIOSH REL | : | USA. NIOSH Recommended Exposure Limits |
| OSHA Z-1 | : | USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants |



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| | | |
|---|---|---|
| ACGIH / TWA | : | 8-hour, time-weighted average |
| NIOSH REL / TWA | : | Time-weighted average concentration for up to a 10-hour workday during a 40-hour workweek |
| OSHA Z-1 / TWA | : | 8-hour time weighted average |

AIIC - Australian Inventory of Industrial Chemicals; ASTM - American Society for the Testing of Materials; bw - Body weight; CERCLA - Comprehensive Environmental Response, Compensation, and Liability Act; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DOT - Department of Transportation; DSL - Domestic Substances List (Canada); ECx - Concentration associated with x% response; EHS - Extremely Hazardous Substance; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; ERG - Emergency Response Guide; GHS - Globally Harmonised System; GLP - Good Laboratory Practice; HMIS - Hazardous Materials Identification System; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organisation; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardisation; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; MSHA - Mine Safety and Health Administration; n.o.s. - Not Otherwise Specified; NFPA - National Fire Protection Association; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NTP - National Toxicology Program; NZIoC - New Zealand Inventory of Chemicals; OECD - Organisation for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; RCRA - Resource Conservation and Recovery Act; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RQ - Reportable Quantity; SADT - Self-Accelerating Decomposition Temperature; SARA - Superfund Amendments and Reauthorization Act; SDS - Safety Data Sheet; TCSI - Taiwan Chemical Substance Inventory; TECI - Thailand Existing Chemicals Inventory; TSCA - Toxic Substances Control Act (United States); UN - United Nations; UNRTDG - United Nations Recommendations on the Transport of Dangerous Goods; vPvB - Very Persistent and Very Bioaccumulative

The information is believed to be correct but is not exhaustive and will be used solely as a guideline, which is based on current knowledge of the chemical substance or mixture and is applicable to appropriate safety precautions for the product. It does not represent any guarantee of the properties of the product. Sigma-Aldrich Corporation and its Affiliates shall not be held liable for any damage resulting from handling or from contact with the above product. See www.sigma-aldrich.com and/or the reverse side of invoice or packing slip for additional terms and conditions of sale.
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