

Safety Data Sheet


Section 1: Product & Company Identification

Product Name:	Glucose Oxidase
Product #:	G-2591
Synonyms:	β-D-Glucose:oxygen 1-oxidoreductase G.Od GOx
Supplier:	AG Scientific Holdings, LLC 9950 Scripps Lake Drive, Suite 104 San Diego, CA 92131 Tele# + 858-452-9925
Emergency Tele#:	ChemTel, Tele# in USA 1-800-255-3924, International 1-813-248-0585

Section 2: Composition / Information on Ingredients

Component	CAS #	EC #	% Composition
Glucose oxidase	9001-37-0		

Section 3: Hazards Identification

Symbols	
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HMIS Rating

Health Hazard	Chronic Health Hazard	Flammability	Physical Hazard

NFPA Rating

Health Hazard	Fire Hazard	Reactivity Hazard

Section 4: First Aid Measures

General Overview:	First aiders need to protect themselves. Show this material safety data sheet to the doctor in attendance.
Inhalation:	After inhalation: fresh air. Call in physician.

Skin:	In case of skin contact: Take off immediately all contaminated clothing. Rinse skin with water/ shower.
Eyes:	After eye contact: rinse out with plenty of water. Remove contact lenses.
Ingestion:	After swallowing: immediately make victim drink water (two glasses at most). Consult a physician.
	See section 11 for more detailed information on health effects & symptoms.

SECTION 5: Fire Fighting Measures

Flammability of the product:	Combustible
Extinguishing Media:	Water, Foam, Carbon dioxide (CO ₂), Dry powder
Hazardous thermal (de)composition products:	Nature of decomposition products is not known.
Special Fire Fighting Procedures:	In the event of fire, wear self-contained breathing apparatus. Prevent fire extinguishing water from contaminating surface water or the ground water system.
Flash Point:	No data available





Section 6: Accidental Release Measures

Personal Precautions:	Advice for non-emergency personnel: Avoid inhalation of dusts. Avoid substance contact. Ensure adequate ventilation. Evacuate the danger area, observe emergency procedures, consult an expert. For personal protection see section 8.
Environmental Precautions:	Do not let product enter drains.
Methods for Clean-up:	Cover drains. Collect, bind, and pump off spills. Observe possible material restrictions (see sections 7 and 10). Take up carefully. Dispose of properly. Clean up affected area. Avoid generation of dusts.

SECTION 7: Handling & Storage

Storage:	Tightly closed. Dry. Keep locked up in an area accessible only to qualified or authorized persons. Recommended storage temperature: -20°C Storage Class (TRGS 510): Combustible Solids
Handling:	Work under hood. Do not inhale substance/mixture. Change contaminated clothing. Preventive skin protection is recommended. Wash hands after working with substance. For precautions see section 2.2.

SECTION 8: Exposure controls / Personal Protection

Respiratory Protection:	 <p>Recommended Filter type: Filter type P2 The entrepreneur must ensure that maintenance, cleaning and testing of respiratory protective devices are carried out according to the instructions of the producer.</p> <p>These measures must be properly documented.</p> <p>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.</p>
Skin and Body:	  <p>Protective gloves and lab coat.</p>
Eyes:	 <p>Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU). Safety glasses.</p>
Ventilation/Engineering Measures:	Ensure adequate ventilation.
Hygiene:	Change contaminated clothing. Preventive skin protection is recommended. Wash hands after working with substance.
Other:	Contains no substances with occupational exposure limit values.

SECTION 9: Physical and Chemical Properties

Appearance & Odor:	Lyophilized powder
Formula	N/A
Molecular Wt.	160 kD
Melting Pt.	No data available
Boiling Pt.	No data available
Density:	No data available
Vapor Pressure:	No data available
Evaporation Rate:	No data available
Vapor Density:	No data available
Solubility:	No data available
Flash Point:	No data available
Autoignition Temp:	No data available

SECTION 10: Stability and Reactivity

Stability:	The product is chemically stable under standard ambient conditions (room temperature) .
Hazardous decomposition products:	In the event of fire: see section 5.
Materials to Avoid:	Strong oxidizing agents
Conditions to avoid:	No data available

SECTION 11: Toxicological Information

RTECS#:	RQ8452000
ACUTE Toxicity:	<p>LD50 Oral - Rat - male and female - > 5,000 mg/kg</p> <p>Skin corrosion/irritation Skin - Rabbit Result: No skin irritation - 4 h (OECD Test Guideline 404)</p> <p>Serious eye damage/eye irritation Eyes - Rabbit Result: No eye irritation (OECD Test Guideline 405)</p> <p>Respiratory or skin sensitization May cause allergy or asthma symptoms or breathing difficulties if inhaled.</p>

CHRONIC Toxicity:	<p>Germ cell mutagenicity Test Type: Ames test Test system: S. typhimurium Metabolic activation: with and without metabolic activation Method: OECD Test Guideline 471 Result: negative</p> <p>Test Type: Mutagenicity (mammal cell test): micronucleus. Test system: Human lymphocytes Metabolic activation: with and without metabolic activation Method: OECD Test Guideline 473 Result: negative</p>
Chronic Exposure: Carcinogen: Mutagen: Teratogen: Reproductive:	<p>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.</p> <p>AGGIH: No component of this product present at levels greater than or equal to 0.1% is identified as probable, potential human carcinogen by ACGIH.</p> <p>NTP: No component of this product present at levels greater than or equal to 0.1% is identified as known or anticipated human carcinogen by NTP.</p> <p>OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as known or potential human carcinogen by OSHA.</p> <p>EPA: No classification on carcinogenic data is available from EPA</p>

SECTION 12: Ecological Information

Ecotoxicity:	<p>Toxicity to daphnia and other aquatic invertebrates: Static test EC50 - Daphnia magna (Water flea) - 26.2 mg/l - 48 h (OECD Test Guideline 202)</p> <p>Toxicity to algae: Static test ErC50 - Scenedesmus capricornutum (fresh water algae) - 176.6 mg/l - 72 h (OECD Test Guideline 201)</p>
Mobility:	
Persistence and degradability:	<p>Biodegradability: aerobic - Exposure time 28 d Result: 91 % - Readily biodegradable. (OECD Test Guideline 301E) Remarks: The 10 day time window criterion is not fulfilled.</p>
Bioaccumulative potential:	No data available
Other adverse effects:	No data available
Corrosivity Characteristic:	No data available

General Notes:	No data available
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SECTION 13: Disposal Considerations

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

SECTION 14: Transportation Information

UN ID#:	N/A
ADR / RID (LAND):	Not regulated
DOT regulations:	Not regulated
IMDG/IMO (SEA):	Not regulated
IATA/DGR (AIR):	Not regulated
Special Provisions:	N/A

SECTION 15: Regulatory Information

Health Phrases:	Danger! H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled. H402 Harmful to aquatic life.
Risk Phrases:	P261 Avoid breathing dust. P273 Avoid release to the environment.
Safety Phrases:	P285 In case of inadequate ventilation wear respiratory protection. P304 + P341 IF INHALED: If breathing is difficult, remove person to fresh air and keep comfortable for breathing. P342 + P311 If experiencing respiratory symptoms: Call a POISON CENTER/doctor. P501 Dispose of contents/container to an approved waste disposal plant.
EU Regulations:	N/A
US Regulations:	TSCA: Not listed California Proposition 65: No products were found
U.S. Federal Regulations:	SARA 302/304 emergency planning and notification: No products were found. SARA 311/312 MSDS distribution-chemical inventory-hazard identification: No products were found. SARA 313 toxic chemicals notification and release reporting: No products were found. Clean Water Act (CWA) 307: No products were found. Clean Water Act (CWA) 311: No products were found. Clean Air Act (CAA) 112 accidental release prevention: No products were found.

	<p>Clean Air Act (CAA) 112 regulated flammable substances: No products were found.</p> <p>Clean Air Act (CAA) 112 regulated toxic substances: No products were found.</p> <p>OSHA: Respiratory sensitization (Cat. 1); Short-term (acute) aquatic hazard (Cat. 3)</p>
WHMIS (Canada):	N/A

SECTION 16: Other Information

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