

SECTION 1 - PRODUCT AND COMPANY IDENTIFICATION

Product Name:	Aluminum Oxide Particles		
Product Content:	Aluminum Oxide Particles		
Company Identification	Microgenics Corporation	Company Phone Number	(510) 979-5000
Office Address	46360 Fremont Blvd.	Emergency Phone Number	(510) 979-5000
City, State, Zip Code	Fremont, CA 94538	CHEMTREC Phone Number, US	(800) 424-9300
Country	USA	CHEMTREC Phone Number, Europe	(202) 483-7616

SECTION 2 - HAZARD IDENTIFICATION

CAUTION! May cause lung irritation if inhaled. By normal use the product is not regarded as hazardous to health. The product is not classified as flammable or harmful to the environment; may cause eye, skin, digestive track, and respiratory track irritation. The toxicological properties of this material have not been fully investigated. This product is not classified as dangerous in accordance with Directive 1999/45/EC or 67/548/EEC

SECTION 3 - COMPOSITION/INFORMATION ON INGREDIENTS

Component: Name	CAS Number:	Percentage:	EINECS/ELINCS
Aluminum oxide	1344-28-1	100	215-691-6

Component comments have no OSHA, Canadian, or EU hazardous ingredients above applicable threshold

SECTION 4 - FIRST AID MEASURES

EYE CONTACT: Flush thoroughly with water for at least 15 minutes. If an irritation develops, seek medical advice
 SKIN CONTACT: In case of contact remove clothes, wash area with soap and flush with plenty of water. If an irritation develops, seek medical advice
 INHALATION: Remove to fresh air and seek medical advice
 INGESTION: Give one to two glasses of water and seek medical advice

SECTION 5 - FIRE FIGHTING MEASURES

FLAMMABLE PROPERTIES: Not considered flammable or explosive. NFPA/HMIS Rating (estimated): Health: 1; Flammability: 0; Instability: 0
 PROTECTION FOR FIREFIGHTERS: Use extinguishing media appropriate for surrounding fire (water, foam, vaporizing liquid or multipurpose dry chemical)

SECTION 6 - ACCIDENTAL RELEASE MEASURES

Areas covered with spilled microspheres may be slippery. If material is spilled or released, cordon off the area. Collect material by wiping the spill area with a paper towel or disposable wipe, and place materials into an appropriate container. Avoid inhaling fine particle dust. Discard collected material in containers suitable for proper disposal

SECTION 7 - HANDLING AND STORAGE

Keep tightly sealed to prevent contamination; store at room temperature in a dry area. Avoid damaging or puncturing containers. When creating aerosols of fine particles use minimal and directional (away from the user) airflow

SECTION 8 - EXPOSURE CONTROL/PERSONAL PROTECTION
Occupational Exposure Limits

Chemical Name – Aluminum Oxide Particles

OSHA TWA/8 hr	Cal/OSHA TWA/8 hr	ACGIH TLV TWA/8 hr	AIHA	NIOSH LDH/TWA
15 mg/m ³ (total), 5 mg/m ³ (resp)	10 mg/m ³	10mg/m ³ – total dust	Not listed	10 mg/m ³ (total), 5 mg/m ³ (resp)

EXPOSURE GUIDELINES: This product does not contain any hazardous materials with occupational exposure limits established by the region specific regulatory bodies. Safety glasses with side shields are suggested

ENGINEERING CONTROLS: Use minimal and directional (away from the user) airflow to minimize worker exposure

SKIN PROTECTION: Wear appropriate protective gloves to prevent skin exposure. No skin irritation expected

RESPIRATORY PROTECTION: Respiratory protection program that meets OSHA's 29 CFR 1910.134 and ANSI Z88.2 requirements or European

Standard EN 149 GENERAL HYGIENE CONSIDERATIONS: Wear appropriate protective clothing to prevent skin exposure

SYSTEMIC: Acute: If inhaled in large quantities, may cause lung irritation

Chronic: If inhaled in large quantities, may cause lung irritation

SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES

BOILING POINT:	Not applicable (solid)	SOLUBILITY IN WATER:	insoluble	FLASH POINT:	N/A
MELTING POINT:	2053°C	EVAPORATION RATE:	N/A	FLAMMABLE PROPERTIES:	N/A
PHYSICAL STATE:	solid	VAPOR PRESSURE:	N/A	AUTO IGNITION TEMP:	N/A
VAPOR DENSITY:	0mmHg	pH: N/A Kow:	N/A		
DECOMPOSITION:	N/A	MOLECULAR WEIGHT	101.94	SPECIFIC GRAVITY:	3.99
APPEARANCE, COLOR, ODOR:	White powder, no odor				

SECTION 10 - STABILITY AND REACTIVITY

STABILITY: Stable at room temperature in closed containers under normal storage and handling conditions
 INCOMPATIBILITY: Not known
 HAZARDOUS DECOMPOSITION PRODUCTS: Not known
 HAZARDOUS POLYMERIZATION: Will not occur

SECTION 11 - TOXICOLOGICAL INFORMATION

REPRODUCTIVE AND DEVELOPMENTAL TOXICITY: Material is not considered to be a reproductive or developmental toxicant
 CARCINOGENICITY: Material is not listed by NTP, ACGIH, IARC or OSHA as a carcinogen. For more information refer to Section 2. Hazards identification
 NOES Hazard Codes CAS#1344-28-1: NOHS=20265, NOES=X3152, X5459, X=5758, X=9687
 RTECS CAS#1344-28-1=BD1200000

SECTION 12 - ECOLOGICAL INFORMATION

ECOTOXICITY Not regarded as dangerous for the environment LC/EC/IC50 > 100 mg/L
 PERSISTENCE/DEGRADATION *No information found*
 BIOACCUMULATION/ACCUMULATION *No information found*
 MOBILITY IN ENVIRONMENTAL MEDIA Not soluble in water
 ENVIRONMENTAL Not classified as harmful to the environment
 OTHER ADVERSE EFFECTS No information found

SECTION 13 - DISPOSAL CONSIDERATIONS

Dispose of any waste residues according to prescribed federal, state, and local guidelines (e.g., to an appropriately permitted chemical waste incinerator).
 None of the components are on RCRA P& RCRA U Series Wastes list. EWC waste code 18 01 05 discard as chemicals and medicines
 Other Information: According to the European Waste Catalogue, Waste Codes are not product specific, but application specific. Waste codes should be assigned by the user based on the application for which the product was used

SECTION 14 - TRANSPORTATION INFORMATION

HAZARD CLASS: Not classified per US DOT, TDG, UNECE, ADR, ADN, IATA, ICAO, RID, IMDG/IMO, OTIF, Mexico

SECTION 15 - REGULATORY INFORMATION

CAS#1344-28-1

TSCA 8(b)	SARA 302	SARA 313	CERCLA	RCRA 261.33	TSCA 8(d)	TSCA 12(b)	FIFRA	CWC	SARA 311/312	EPICRA	CAA-SNAP	FDA	USDA
yes	no	yes	yes	no	no	no	yes	no	no	no	no	no	no

Not subject to ITAR and EAR regulations

OEL-TWA: Alaska, Michigan, Minnesota, North Carolina, Oregon, Tennessee, Vermont, Washington=10 mg/m³; Idaho, Indiana =15 mg/m³; Arizona, California, Connecticut, Delaware, Hawaii, Kentucky, Massachusetts, New Jersey, Pennsylvania, Rhode Island, Tennessee, Texas= RTK
California - Prop 65, Title 8 CCR, Title 22 CCR, ATHS, Occupational Exposure Limits, Ozone Depleting Compounds, Precursor Chemicals, SCAQMD, California - No Significant Risk Level - *No information found*. None of the chemicals are on Prop 65 lists

Advisory Agencies/Africa/Asia-Pacific/Europe Non-EU/EU Member Countries/Latin America and Caribbean/Middle East/Government Inventory Lists
 CAS#1344-28-1

AICS	New Zealand	Korea	ENCS	China	Belgium	PICCS	Malaysia	Singapore	France	Germany VwVws	Latvia	Lithuania	EC	EINECS
yes	yes	yes	yes	yes	no	yes	no	no	no	no	no	no	no	215-691-6

ICCA, OECD – yes; **OEL-TWA:** AUSTRALIA, EGYPT, SOUTH AFRICA, HONG-KONG, INDONESIA, KOREA, MALAYSIA, NEWZEALAND, SINGAPORE, ICELAND, NORWAY, AUSTRIA, BELGIUM, ESTONIA, FRANCE, GREECE, IRELAND, PORTUGAL, SPAIN, ARGENTINA, COLOMBIA, MEXICO, PERU, VENEZUELA, GCC, ISRAEL =10mg/m³; **PC-STEL:** CHINA 8 mg/m³, SWITZERLAND 24 mg/m³, HUNGARY 6 mg/m³, POLAND 16 mg/m³, ROMANIA 1.2PPM; **OEL-TWA:** CHECK 0.1 mg/m³, DENMARK 5 mg/m³, JAPAN 0.5 mg/m³, ROMANIA 0.5PPM, RUSSIA 6 mg/m³, LATVIA 6 mg/m³, LITHUANIA 5 mg/m³, SLOVAK 1.5 mg/m³; **OEL-TLV:** SWEDEN 5 mg/m³

Canada Federal/Provincial Government - CAS#1344-28-1

OEL-TWA: ALBERTA, BRITISH COLUMBIA, NEW BRUNSWICK, NORTHWEST TERRITORIES, NUNAVUT, ONTARIO, QUEBEC, SASKATCHEWAN, YUKON = 10mg/m³

OEL-STEL: NORTHWEST TERRITORIES, NUNAVUT, SASKATCHEWAN, YUKON =20mg/m³

European Union Directives: CAS#1344-28-1

Canada Federal/Provincial Government CAS#1344-28-1

793/93/EEC	1907/2006 – REACH
yes	no

CEPA	NPRI	DSL	NDSL	DWO	WHMIS
yes	no	yes	no	no	no

WHMIS: This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all the information required by the CPR

SECTION 16 - OTHER INFORMATION

Revision: 06

Date prepared: October 1, 2008

ABBREVIATIONS

EU: European Union
 DOT: Department of Transportation
 NIOSH: National Institute for Occupational Safety and Health
 ACGIH: American Conference of Governmental Industrial Hygienists
 IATA: International Air Transport Association
 NTP: National Toxicology Program
 OSHA: Occupational Safety and Health Administration
 IARC: International Agency for Research on Cancer

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End of MSDS