

# Fluorescence indicator green

sc-228126



The Power to Question

Material Safety Data Sheet

Hazard Alert Code Key: **EXTREME** **HIGH** **MODERATE** **LOW**

## Section 1 - CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

### PRODUCT NAME

Fluorescence indicator green

### STATEMENT OF HAZARDOUS NATURE

**CONSIDERED A HAZARDOUS SUBSTANCE ACCORDING TO OSHA 29 CFR 1910.1200.**

### NFPA



### SUPPLIER

Santa Cruz Biotechnology, Inc.  
2145 Delaware Avenue  
Santa Cruz, California 95060  
800.457.3801 or 831.457.3800

### EMERGENCY:

ChemWatch  
Within the US & Canada: 877-715-9305  
Outside the US & Canada: +800 2436 2255  
(1-800-CHEMCALL) or call +613 9573 3112

### SYNONYMS

"silicic acid (H<sub>2</sub>SiO<sub>4</sub>), zinc salt (1:2), ", "manganese doped", "zinc silicate phosphor", "Fluorescent Indicator Green 254 NM for thin layer chromatography"

## Section 2 - HAZARDS IDENTIFICATION

### CHEMWATCH HAZARD RATINGS

	Min	Max	
Flammability:	0		 Min/Nil=0 Low=1 Moderate=2 High=3 Extreme=4
Toxicity:	2		
Body Contact:	2		
Reactivity:	0		
Chronic:	2		

### CANADIAN WHMIS SYMBOLS



## EMERGENCY OVERVIEW

### RISK

Harmful by inhalation.

Irritating to eyes and respiratory system.

### POTENTIAL HEALTH EFFECTS

#### ACUTE HEALTH EFFECTS

#### SWALLOWED

- Accidental ingestion of the material may be damaging to the health of the individual.
- Poisonings rarely occur after oral administration of manganese salts because they are poorly absorbed from the gut.

#### EYE

- This material can cause eye irritation and damage in some persons.

#### SKIN

- Skin contact is not thought to produce harmful health effects (as classified using animal models).

Systemic harm, however, has been identified following exposure of animals by at least one other route and the material may still produce health damage following entry through wounds, lesions or abrasions.

- Open cuts, abraded or irritated skin should not be exposed to this material.
- Entry into the blood-stream, through, for example, cuts, abrasions or lesions, may produce systemic injury with harmful effects. Examine the skin prior to the use of the material and ensure that any external damage is suitably protected.

#### INHALED

- Inhalation of dusts, generated by the material, during the course of normal handling, may be harmful.
- The material can cause respiratory irritation in some persons.

The body's response to such irritation can cause further lung damage.

- Persons with impaired respiratory function, airway diseases and conditions such as emphysema or chronic bronchitis, may incur further disability if excessive concentrations of particulate are inhaled.
- Manganese fume is toxic and produces nervous system effects characterized by tiredness. Acute poisoning is rare although acute inflammation of the lungs may occur.

#### CHRONIC HEALTH EFFECTS

- Long-term exposure to respiratory irritants may result in disease of the airways involving difficult breathing and related systemic problems.

Limited evidence suggests that repeated or long-term occupational exposure may produce cumulative health effects involving organs or biochemical systems.

Long term exposure to high dust concentrations may cause changes in lung function i.e. pneumoconiosis; caused by particles less than 0.5 micron penetrating and remaining in the lung.

Manganese is an essential trace element. Chronic exposure to low levels of manganese can include a mask-like facial expression, spastic gait, tremors, slurred speech, disordered muscle tone, fatigue, anorexia, loss of strength and energy, apathy and poor concentration.

Welding or flame cutting of metals with zinc or zinc dust coatings may result in inhalation of zinc oxide fume; high concentrations of zinc oxide fume may result in "metal fume fever"; also known as "brass chills", an industrial disease of short duration. [I.L.O] Symptoms include malaise, fever, weakness, nausea and may appear quickly if operations occur in enclosed or poorly ventilated areas.

## Section 3 - COMPOSITION / INFORMATION ON INGREDIENTS

NAME	CAS RN	%
zinc orthosilicate, manganese activated	68611-47-2	>98

## Section 4 - FIRST AID MEASURES

#### SWALLOWED

· If swallowed do NOT induce vomiting. · If vomiting occurs, lean patient forward or place on left side (head-down position, if possible) to maintain open airway and prevent aspiration.

#### EYE

■ If this product comes in contact with the eyes: · Wash out immediately with fresh running water. · Ensure complete irrigation of the eye by keeping eyelids apart and away from eye and moving the eyelids by occasionally lifting the upper and lower lids.

#### SKIN

- If skin or hair contact occurs: · Flush skin and hair with running water (and soap if available). · Seek medical attention in event of irritation.

#### **INHALED**

- If fumes or combustion products are inhaled remove from contaminated area. · Lay patient down. Keep warm and rested.

#### **NOTES TO PHYSICIAN**

- Treat symptomatically.

Both dermal and oral toxicity of manganese salts is low because of limited solubility of manganese. No known permanent pulmonary sequelae develop after acute manganese exposure.

### **Section 5 - FIRE FIGHTING MEASURES**

Vapour Pressure (mmHG):	Negligible
Upper Explosive Limit (%):	Not Applicable
Specific Gravity (water=1):	4.1
Lower Explosive Limit (%):	Not Applicable

#### **EXTINGUISHING MEDIA**

- There is no restriction on the type of extinguisher which may be used.
- Use extinguishing media suitable for surrounding area.

#### **FIRE FIGHTING**

- Alert Emergency Responders and tell them location and nature of hazard.
- Wear breathing apparatus plus protective gloves for fire only.

#### **GENERAL FIRE HAZARDS/HAZARDOUS COMBUSTIBLE PRODUCTS**

- Non combustible.
- Not considered to be a significant fire risk, however containers may burn.
- Decomposition may produce toxic fumes of: silicon dioxide (SiO<sub>2</sub>), metal oxides.
- May emit poisonous fumes.
- May emit corrosive fumes.

#### **FIRE INCOMPATIBILITY**

- None known.

#### **PERSONAL PROTECTION**

- Glasses:  
Chemical goggles.
- Gloves:
- Respirator:  
Particulate

### **Section 6 - ACCIDENTAL RELEASE MEASURES**

#### **MINOR SPILLS**

- Remove all ignition sources.
- Clean up all spills immediately.
- Avoid contact with skin and eyes.
- Control personal contact by using protective equipment.
- Use dry clean up procedures and avoid generating dust.
- Place in a suitable, labelled container for waste disposal.

#### **MAJOR SPILLS**

- Moderate hazard.
- CAUTION: Advise personnel in area.
- Alert Emergency Responders and tell them location and nature of hazard.

### **Section 7 - HANDLING AND STORAGE**

#### **PROCEDURE FOR HANDLING**

- Avoid all personal contact, including inhalation.
- Wear protective clothing when risk of exposure occurs.

#### **RECOMMENDED STORAGE METHODS**

- Polyethylene or polypropylene container.
- Check all containers are clearly labelled and free from leaks.

#### **STORAGE REQUIREMENTS**

- Store in original containers.

· Keep containers securely sealed.

## Section 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION

### EXPOSURE CONTROLS

Source	Material	TWA ppm	TWA mg/m <sup>3</sup>	STEL ppm	STEL mg/m <sup>3</sup>	Peak ppm	Peak mg/m <sup>3</sup>	TWA F/CC	Notes
US - California Permissible Exposure Limits for Chemical Contaminants	zinc orthosilicate, manganese activated (Manganese and compounds, as Mn)		0.2						
US - Idaho - Limits for Air Contaminants	zinc orthosilicate, manganese activated (Manganese compounds (as Mn))						5		
US - Minnesota Permissible Exposure Limits (PELs)	zinc orthosilicate, manganese activated (Manganese compounds (as Mn))						5		
US - Minnesota Permissible Exposure Limits (PELs)	zinc orthosilicate, manganese activated (Manganese fume (as Mn))		1		3				
US - Vermont Permissible Exposure Limits Table Z-1-A Final Rule Limits for Air Contaminants	zinc orthosilicate, manganese activated (Manganese compounds (as Mn))						5		
US - Vermont Permissible Exposure Limits Table Z-1-A Final Rule Limits for Air Contaminants	zinc orthosilicate, manganese activated (Manganese fume (as Mn))		1		3				
US - Vermont Permissible Exposure Limits Table Z-1-A Transitional Limits for Air Contaminants	zinc orthosilicate, manganese activated (Manganese fume (as Mn))		(C)5						
US - Tennessee Occupational Exposure Limits - Limits For Air Contaminants	zinc orthosilicate, manganese activated (Manganese compounds (as Mn))						5		

US NIOSH Recommended Exposure Limits (RELs)	zinc orthosilicate, manganese activated (Manganese compounds and fume (as Mn))	1	3							[*Note: Also see specific listings for Manganese cyclopentadienyl tricarbonyl, Methyl cyclopentadienyl manganese tricarb
US - Hawaii Air Contaminant Limits	zinc orthosilicate, manganese activated (Manganese fume (as Mn))	1	3							
US - Alaska Limits for Air Contaminants	zinc orthosilicate, manganese activated (Manganese Compounds (as Mn))								5	
US - Hawaii Air Contaminant Limits	zinc orthosilicate, manganese activated (Manganese compounds (as Mn))								5	
Canada - Yukon Permissible Concentrations for Airborne Contaminant Substances	zinc orthosilicate, manganese activated (Manganese and compounds (as Mn))	-	5	-	-					
US - Washington Permissible exposure limits of air contaminants	zinc orthosilicate, manganese activated (Manganese and compounds (as Mn))								5	
US - Michigan Exposure Limits for Air Contaminants	zinc orthosilicate, manganese activated (Manganese, Compounds (as Mn))								5	
US OSHA Permissible Exposure Levels (PELs) - Table Z1	zinc orthosilicate, manganese activated (Manganese compounds (as Mn))								5	
Canada - Quebec Permissible Exposure Values for Airborne Contaminants (English)	zinc orthosilicate, manganese activated (Manganese (as Mn): Dust and compounds)		5							

Canada - Northwest Territories Occupational Exposure Limits (English)	zinc orthosilicate, manganese activated (Manganese & compounds (as Mn))			5
Canada - Northwest Territories Occupational Exposure Limits (English)	zinc orthosilicate, manganese activated (Manganese fume (as Mn))	1	3	
US - Oregon Permissible Exposure Limits (Z-1)	zinc orthosilicate, manganese activated (Manganese Compounds (as Mn))	-		5

ENDOELTABLE

**PERSONAL PROTECTION**



**RESPIRATOR**

- particulate.

**EYE**

- Safety glasses with side shields.
- Chemical goggles.

**HANDS/FEET**

■ Suitability and durability of glove type is dependent on usage. Important factors in the selection of gloves include: such as:

- frequency and duration of contact,
- chemical resistance of glove material,
- glove thickness and
- dexterity

Select gloves tested to a relevant standard (e.g. Europe EN 374, US F739).

- When prolonged or frequently repeated contact may occur, a glove with a protection class of 5 or higher (breakthrough time greater than 240 minutes according to EN 374) is recommended.
- When only brief contact is expected, a glove with a protection class of 3 or higher (breakthrough time greater than 60 minutes according to EN 374) is recommended.
- Contaminated gloves should be replaced.

Gloves must only be worn on clean hands. After using gloves, hands should be washed and dried thoroughly. Application of a non-perfumed moisturiser is recommended.

Experience indicates that the following polymers are suitable as glove materials for protection against undissolved, dry solids, where abrasive particles are not present.

- polychloroprene
- nitrile rubber
- butyl rubber
- fluorocautchouc
- polyvinyl chloride

Gloves should be examined for wear and/ or degradation constantly.

**OTHER**

- Overalls.
- P.V.C. apron.
- Barrier cream.
- Skin cleansing cream.
- Eye wash unit.

**ENGINEERING CONTROLS**

■ Local exhaust ventilation usually required. If risk of overexposure exists, wear an approved respirator.

## Section 9 - PHYSICAL AND CHEMICAL PROPERTIES

### PHYSICAL PROPERTIES

Solid.  
Does not mix with water.  
Sinks in water.

State	Divided solid	Molecular Weight	Not applicable
Melting Range (°F)	Not available	Viscosity	Not Applicable
Boiling Range (°F)	Not available.	Solubility in water (g/L)	Immiscible
Flash Point (°F)	Not Applicable	pH (1% solution)	Not applicable.
Decomposition Temp (°F)	Not available.	pH (as supplied)	Not applicable
Autoignition Temp (°F)	Not available	Vapour Pressure (mmHG)	Negligible
Upper Explosive Limit (%)	Not Applicable	Specific Gravity (water=1)	4.1
Lower Explosive Limit (%)	Not Applicable	Relative Vapor Density (air=1)	Not available
Volatile Component (%vol)	Negligible	Evaporation Rate	Not applicable

### APPEARANCE

White powder; does not mix with water.

## Section 10 - CHEMICAL STABILITY

### CONDITIONS CONTRIBUTING TO INSTABILITY

- Presence of incompatible materials.
- Product is considered stable.

### STORAGE INCOMPATIBILITY

- WARNING: Avoid or control reaction with peroxides. All transition metal peroxides should be considered as potentially explosive. For example transition metal complexes of alkyl hydroperoxides may decompose explosively.
- The pi-complexes formed between chromium(0), vanadium(0) and other transition metals (haloarene-metal complexes) and mono- or poly-fluorobenzene show extreme sensitivity to heat and are explosive.
- Avoid reaction with borohydrides or cyanoborohydrides.
- Metals and their oxides or salts may react violently with chlorine trifluoride and bromine trifluoride.
- These trifluorides are hypergolic oxidisers. They ignite on contact (without external source of heat or ignition) with recognised fuels - contact with these materials, following an ambient or slightly elevated temperature, is often violent and may produce ignition.
- The state of subdivision may affect the results.

For incompatible materials - refer to Section 7 - Handling and Storage.

## Section 11 - TOXICOLOGICAL INFORMATION

zinc orthosilicate, manganese activated

### TOXICITY AND IRRITATION

#### ZINC ORTHOSILICATE, MANGANESE ACTIVATED:

■ unless otherwise specified data extracted from RTECS - Register of Toxic Effects of Chemical Substances.

■ Asthma-like symptoms may continue for months or even years after exposure to the material ceases. This may be due to a non-allergenic condition known as reactive airways dysfunction syndrome (RADS) which can occur following exposure to high levels of highly irritating compound. Key criteria for the diagnosis of RADS include the absence of preceding respiratory disease, in a non-atopic individual, with abrupt onset of persistent asthma-like symptoms within minutes to hours of a documented exposure to the irritant. A reversible airflow pattern, on spirometry, with the presence of moderate to severe bronchial hyperreactivity on methacholine challenge testing and the lack of minimal lymphocytic inflammation, without eosinophilia, have also been included in the criteria for diagnosis of RADS. RADS (or asthma) following an irritating inhalation is an infrequent disorder with rates related to the concentration of and duration of exposure to the irritating substance. Industrial bronchitis, on the other hand, is a disorder that occurs as result of exposure due to high concentrations of irritating substance (often particulate in nature) and is completely reversible after exposure ceases. The disorder is characterised by dyspnea, cough and mucus production.

No significant acute toxicological data identified in literature search.

### CARCINOGEN

Zinc and Compounds	US EPA Carcinogens Listing	Carcinogenicity	D
Zinc and Compounds	US ACGIH Threshold Limit Values (TLV) - Carcinogens	Carcinogen Category	D

zinc orthosilicate, manganese activated	US - Maine Chemicals of High Concern List	Carcinogen	D
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## Section 12 - ECOLOGICAL INFORMATION

No data

### Ecotoxicity

Ingredient	Persistence: Water/Soil	Persistence: Air	Bioaccumulation	Mobility
zinc orthosilicate, manganese activated	No Data Available	No Data Available		

## Section 13 - DISPOSAL CONSIDERATIONS

### Disposal Instructions

All waste must be handled in accordance with local, state and federal regulations.

‡ Legislation addressing waste disposal requirements may differ by country, state and/ or territory. Each user must refer to laws operating in their area. In some areas, certain wastes must be tracked.

A Hierarchy of Controls seems to be common - the user should investigate:

- Reduction
- Reuse
- Recycling
- Disposal (if all else fails)

This material may be recycled if unused, or if it has not been contaminated so as to make it unsuitable for its intended use. Shelf life considerations should also be applied in making decisions of this type. Note that properties of a material may change in use, and recycling or reuse may not always be appropriate.

DO NOT allow wash water from cleaning equipment to enter drains. Collect all wash water for treatment before disposal.

- Recycle wherever possible or consult manufacturer for recycling options.
- Consult Waste Management Authority for disposal.

## Section 14 - TRANSPORTATION INFORMATION

NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS: DOT, IATA, IMDG

## Section 15 - REGULATORY INFORMATION

**zinc orthosilicate, manganese activated (CAS: 68611-47-2) is found on the following regulatory lists;**

"Canada Non-Domestic Substances List (NDSL)", "US Toxic Substances Control Act (TSCA) - Chemical Substance Inventory"

## Section 16 - OTHER INFORMATION

### LIMITED EVIDENCE

- Ingestion may produce health damage\*.
- Cumulative effects may result following exposure\*.

\* (limited evidence).

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- Classification of the preparation and its individual components has drawn on official and authoritative sources as well as independent review by the Chemwatch Classification committee using available literature references.

A list of reference resources used to assist the committee may be found at:

[www.chemwatch.net/references](http://www.chemwatch.net/references).

- The (M)SDS is a Hazard Communication tool and should be used to assist in the Risk Assessment. Many factors determine whether the reported Hazards are Risks in the workplace or other settings. Risks may be determined by reference to Exposures Scenarios.



Scale of use, frequency of use and current or available engineering controls must be considered.

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