SAFETY DATA SHEET

Published Date	Revision Date	Revision Number
Apr-17-2020	Apr-17-2020	2.5

1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

Product identifier

Product code SIPM528

Product name SIPM528 C12 Rich Gold Powder

Product category Metallic Powder or Paste

Other means of identification

Synonyms None

Recommended use of the chemical and restrictions on use

Recommended use Printing operations

Details of the supplier of the safety data sheet

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Nazdar Company
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Shawnee, KS 66227
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Fax: +001-913-422-2294
www.nazdar.com

UNITED KINGDOM
Nazdar Limited
Barton Road
Heaton Mersey
Stockport, England SK4 3EG
Tel: +44 161 442 2111

Emergency telephone number

USA: Chemtrec: +001-800-424-9300
Outside USA: Chemtrec: +001-703-527-3887
24 Hour Emergency Phone Number

2. HAZARDS IDENTIFICATION

Classification

Acute aquatic toxicity	Category 1 - (H400)
Chronic aquatic toxicity	Category 1 - (H410)
Flammable Solids	Category 1 - (H228)

Label elements

Signal Word
Danger

Hazard Statements
H410 - Very toxic to aquatic life with long lasting effects
H228 - Flammable solid

Precautionary Statements
P273 - Avoid release to the environment
P280 - Wear protective gloves/protective clothing/eye protection/face protection

P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking

Hazards not otherwise classified (HNOC)

No information available.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Mixture

Component	CAS-No	Weight %	Trade Secret	Note
Copper	7440-50-8	60 - 100	*	
Zinc powder (stabilized)	7440-66-6	30 - 60	*	
Stearic acid	57-11-4	1 - 5	*	

*The exact percentage (concentration) of composition has been withheld as a trade secret.

4. FIRST AID MEASURES

Description of first aid measures

General Advice Show this safety data sheet to the doctor in attendance.

Eye Contact Immediately flush with plenty of water. After initial flushing, remove any contact lenses and continue flushing for at least 15 minutes. Get medical attention if irritation develops and persists.

Skin Contact Wash off immediately with soap and plenty of water for at least 15 minutes. Remove contaminated clothing. If irritation (redness, rash, blistering) develops, get medical attention.

Inhalation Remove person to fresh air and keep comfortable for breathing. If breathing is irregular or stopped, administer artificial respiration. Get medical attention immediately.

Ingestion Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Call a physician or poison control center immediately.

Most important symptoms and effects, both acute and delayed

None under normal use conditions.

Indication of any immediate medical attention and special treatment needed

Notes to Physician Treat symptomatically.

5. FIRE-FIGHTING MEASURES

Suitable Extinguishing Media

Foam. Carbon dioxide (CO2). Dry chemical. Water spray. Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Unsuitable Extinguishing Media

No information available.

Specific Hazards Arising from the Chemical

Thermal decomposition can lead to release of irritating gases and vapors. May emit toxic fumes under fire conditions. Powdered material may form explosive dust-air mixture.

Protective Equipment and Precautions for Firefighters

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear. Cool containers / tanks with water spray. Sealed containers may rupture when heated.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Personal Precautions Remove all sources of ignition. Ventilate the area. Avoid contact with eyes, skin and clothing. Avoid breathing dust or vapor. Evacuate personnel to safe areas. Keep people

away from and upwind of spill/leak.

Environmental precautions

Prevent product from entering drains. Prevent further leakage or spillage if safe to do so. Keep out of drains, sewers, ditches and waterways. Local authorities should be advised if significant spillages cannot be contained.

Methods and material for containment and cleaning up

Cover powder spill with plastic sheet or tarp to minimize spreading and keep powder dry. Use appropriate personal protective equipment (PPE). Carefully shovel or sweep up spilled material and place in suitable container. Avoid generating dust. Use only non-sparking tools. Clean contaminated surface thoroughly.

7. HANDLING AND STORAGE

Precautions for safe handling

Handling Use personal protective equipment as required. Do not eat, drink or smoke when using this product. Ensure adequate ventilation.

Conditions for safe storage, including any incompatibilities

Storage Keep containers tightly closed in a dry, cool and well-ventilated place. Keep away from open flames, hot surfaces and sources of ignition. Keep container closed when not in use. Keep out of the reach of children.

Incompatible Products Strong acids. Strong bases. Strong oxidizing agents. Reducing agent.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

Exposure limits

Component	ACGIH TLV
Copper 7440-50-8	TWA: 0.2 mg/m³ fume
Stearic acid 57-11-4	TWA: 10 mg/m³ inhalable particulate matter TWA: 3 mg/m³ respirable particulate matter

Component	OSHA PEL
Copper 7440-50-8	TWA: 0.1 mg/m³ fume TWA: 1 mg/m³ dust and mist

Component	OSHA PEL (vacated)
Copper 7440-50-8	TWA: 0.1 mg/m³ dust, fume, mist

Component	Ontario TWAEV
Copper 7440-50-8	TWA: 0.2 mg/m³ fume TWA: 1 mg/m³ dust and mist

Component	Mexico OEL (TWA)
Copper 7440-50-8	TWA/VLE-PPT: 0.2 mg/m³ fume TWA/VLE-PPT: 1 mg/m³ dust and mist STEL/PPT-CT: 2 mg/m³ fume STEL/PPT-CT: 2 mg/m³ dust and mist

Appropriate engineering controls

Engineering Measures Provide a good standard of general ventilation. Natural ventilation is from doors, windows etc. Controlled ventilation means air is supplied or removed by a powered fan. Users are advised to consider national Occupational Exposure Limits or other equivalent values. In case of insufficient ventilation, wear suitable respiratory equipment.

Individual protection measures, such as personal protective equipment

Eye/Face Protection	Wear safety glasses with side shields (or goggles). If splashes are likely to occur:. Wear suitable face shield. Ensure that eyewash stations and safety showers are close to the workstation location.
Skin Protection	Wear impervious protective clothing, including boots, gloves, lab coat, apron or coveralls, as appropriate, to prevent skin contact.
Hand Protection	Chemical resistant protective gloves. Suitable materials also with prolonged, direct contact (Recommended: Protective index 6, corresponding >480 minutes of permeation time): eg. nitrile rubber (0.4 mm), chloroprene rubber (0.5 mm), polyvinylchloride (0.7 mm) and other Supplementary note: The specifications are based on tests, literature data and information of glove manufacturers. Taking into account the varying conditions, the practical usage of a chemical-protective glove in practice may be much shorter than the permeation time determined through testing. Due to different glove types, the manufacturer's directions for use should be observed. Replace gloves immediately when torn or any change in appearance is noticed such as dimension, color, flexibility.
Respiratory Protection	If exposure limits are exceeded or irritation is experienced, NIOSH/MSHA approved respiratory protection should be worn. Respiratory protection must be provided in accordance with current local regulations. Selection of air-purifying or positive-pressure supplied-air will depend on the specific operation and the potential airborne concentration of the material.
General Hygiene Considerations	Handle in accordance with good industrial hygiene and safety practice. Wash hands before eating, drinking or smoking. Wash contaminated clothing before reuse. Avoid contact with eyes, skin and clothing. Wear suitable gloves and eye/face protection. Regular cleaning of equipment, work area and clothing is recommended.

9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Physical State	Powder	**Appearance**	Gold
Odor	Odorless	**Odor Threshold**	No information available

Property	**Values**	**Remarks • Method**
pH		No data available
Melting Point / Freezing Point		No data available
Boiling Point / Boiling Range		Not applicable
Flash Point		Not Applicable
Evaporation rate		No data available
Flammability Limit in Air		
Upper flammability limit		No data available
Lower flammability limit		No data available
Vapor Pressure		No data available
Vapor Density		No data available
Specific Gravity	8.3	
Water Solubility		No data available
Solubility in other solvents		No data available
Partition coefficient: n-octanol/water		No data available
Autoignition Temperature		No data available
Decomposition temperature		No data available
Kinematic viscosity		No data available
Dynamic viscosity		No data available

Explosive Properties	No data available
Oxidizing Properties	No data available

Other Information

Photochemically Reactive	No

Weight Per Gallon (lbs/gal) 69.2

VOC by weight % (less water)	VOC by volume % (less water)	VOC lbs/gal (less water)	VOC grams/liter (less water)
0-1	0-1	0-1	0-1

10. STABILITY AND REACTIVITY

Reactivity
No information available.

Chemical stability
Stable under normal conditions.

Possibility of Hazardous Reactions
None under normal processing.

Conditions to avoid
Keep away from open flames, hot surfaces and sources of ignition.

Incompatible materials
Strong acids. Strong bases. Strong oxidizing agents. Reducing agent.

Hazardous Decomposition Products
Thermal decomposition can lead to release of irritating gases and vapors. Carbon dioxide (CO2). Carbon monoxide.

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Inhalation	Specific test data for the substance or mixture is not available.
Eye Contact	Specific test data for the substance or mixture is not available.
Skin Contact	Specific test data for the substance or mixture is not available.
Ingestion	Specific test data for the substance or mixture is not available.

Component	Oral LD50
Zinc powder (stabilized) 7440-66-6	= 630 mg/kg (Rat)
Stearic acid 57-11-4	= 4600 mg/kg (Rat)

Information on toxicological effects

Symptoms Specific test data for the substance or mixture is not available.

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Skin corrosion/irritation	Specific test data for the substance or mixture is not available.
Eye damage/irritation	Specific test data for the substance or mixture is not available.
Irritation	Specific test data for the substance or mixture is not available.
Corrosivity	Specific test data for the substance or mixture is not available.
Sensitization	Specific test data for the substance or mixture is not available.
Mutagenic Effects	Specific test data for the substance or mixture is not available.
Carcinogenic effects	Specific test data for the substance or mixture is not available.
Reproductive Effects	Specific test data for the substance or mixture is not available.
STOT - single exposure	Specific test data for the substance or mixture is not available.
STOT - repeated exposure	Specific test data for the substance or mixture is not available.
Chronic Toxicity	Specific test data for the substance or mixture is not available
Aspiration hazard	Specific test data for the substance or mixture is not available.
Carcinogenicity	This product does not contain any carcinogens or potential carcinogens as listed by OSHA, IARC or NTP.

Numerical measures of toxicity - Product Information

Unknown Acute Toxicity 0 % of the mixture consists of ingredient(s) of unknown toxicity

The following values are calculated based on chapter 3.1 of the GHS document mg/kg

12. ECOLOGICAL INFORMATION

Ecotoxicity
Specific test data for the substance or mixture is not available. Very toxic to aquatic life with long lasting effects. (based on components).

0 % of the mixture consists of component(s) of unknown hazards to the aquatic environment

Component	Algae/aquatic plants
Copper 7440-50-8	72h EC50 Pseudokirchneriella subcapitata: 0.0426 - 0.0535 mg/L static 96h EC50 Pseudokirchneriella subcapitata: 0.031 - 0.054 mg/L static
Zinc powder (stabilized) 7440-66-6	72h EC50 Pseudokirchneriella subcapitata: 0.09 - 0.125 mg/L static 96h EC50 Pseudokirchneriella subcapitata: 0.11 - 0.271 mg/L static

Component	Fish
Copper 7440-50-8	96h LC50 Pimephales promelas: 0.0068 - 0.0156 mg/L 96h LC50 Pimephales promelas: = 0.2 mg/L (flow-through) 96h LC50 Pimephales promelas: < 0.3 mg/L (static) 96h LC50 Oncorhynchus mykiss: = 0.052 mg/L (flow-through) 96h LC50 Poecilia reticulata: = 0.112 mg/L (flow-through) 96h LC50 Cyprinus carpio: = 0.8 mg/L (static) 96h LC50 Cyprinus carpio: = 0.3 mg/L (semi-static) 96h LC50 Lepomis macrochirus: = 1.25 mg/L (static)
Zinc powder (stabilized) 7440-66-6	96h LC50 Pimephales promelas: 0.211 - 0.269 mg/L (semi-static) 96h LC50 Cyprinus carpio: = 0.45 mg/L (semi-static) 96h LC50 Cyprinus carpio: = 7.8 mg/L (static) 96h LC50 Lepomis macrochirus: = 3.5 mg/L (static) 96h LC50 Cyprinus carpio: = 30 mg/L 96h LC50 Oncorhynchus mykiss: = 0.41 mg/L (static) 96h LC50 Oncorhynchus mykiss: = 0.24 mg/L (flow-through) 96h LC50 Pimephales promelas: 2.16 - 3.05 mg/L (flow-through) 96h LC50 Oncorhynchus mykiss: = 0.59 mg/L (semi-static) 96h LC50 Pimephales promelas: = 2.66 mg/L (static)

Component	Crustacea
Copper 7440-50-8	48h EC50 Daphnia magna: = 0.03 mg/L Static
Zinc powder (stabilized) 7440-66-6	48h EC50 Daphnia magna: 0.139 - 0.908 mg/L Static

Persistence and Degradability
No information available.

Bioaccumulation
No information available

Other adverse effects
No information available

13. DISPOSAL CONSIDERATIONS

Waste treatment methods

Waste Disposal Methods Contain and dispose of waste according to local regulations.

Contaminated Packaging Empty containers should be taken to an approved waste handling site for recycling or disposal.

14. TRANSPORT INFORMATION

Note: This information is not intended to convey all specific transportation requirements relating to this product. Transportation classifications may vary by container volume and may be influenced by regional or country variations in regulations. Additional transportation information can be found in the specific regulations for your mode of transportation. It is the responsibility of the transporting organization to follow all applicable laws, regulations and rules relating to the transportation of the material.

DOT

UN/ID no.	UN3089
Proper Shipping Name	Metal Powders, Flammable, N.O.S.
Hazard Class	4.1
Packing Group	II

ICAO / IATA / IMDG / IMO

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15. REGULATORY INFORMATION

International Inventories

All components are listed on the TSCA Inventory. For further information, please contact:. Supplier (manufacturer/importer/downstream user/distributor).

U.S. Federal Regulations

SARA 313

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product contains a chemical or chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372.

Component	CAS-No	Weight %	SARA 313 - Threshold Values
Copper	7440-50-8	60 - 100	1.0
Zinc powder (stabilized)	7440-66-6	30 - 60	1.0

Zinc is reportable under SARA313 ONLY if it is a fume or dust form. Fume or dust refers to dry forms but does not refer to "wet" forms such as use in a solution or slurry.

Clean Air Act, Section 112 Hazardous Air Pollutants (HAPs) (see 40 CFR 61)

This product does not contain any hazardous air pollutants (HAP), as defined by the U.S. Clean Air Act Section 112 (40 CFR 61).

U.S. State Regulations

Component	Massachusetts Right To Know
Copper 7440-50-8	X
Zinc powder (stabilized) 7440-66-6	X

Component	Minnesota Right To Know
Copper 7440-50-8	X

Component	New Jersey Right To Know
Copper 7440-50-8	X
Zinc powder (stabilized) 7440-66-6	X

Component	Pennsylvania Right To Know
Copper 7440-50-8	X
Zinc powder (stabilized) 7440-66-6	X

California Prop. 65

This product does not contain any chemicals known to State of California to cause cancer, birth, or any other reproductive defects

Canada

Component	NPRI - National Pollutant Release Inventory
Copper 7440-50-8	Part 1, Group A Substance
Zinc powder (stabilized) 7440-66-6	Part 1, Group A Substance

16. OTHER INFORMATION

HMIS:	Health	Flammability	Reactivity	Personal Protection
	1 *	1	0	X

Key or legend to abbreviations and acronyms used in the safety data sheet

Legend - Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

TWA	TWA (time-weighted average)
STEL	STEL (Short Term Exposure Limit)
Ceiling	Maximum limit value

ACGIH: (American Conference of Governmental Industrial Hygienists)
A1 - Known Human Carcinogen
A2 - Suspected Human Carcinogen
A3 - Animal Carcinogen
IARC: (International Agency for Research on Cancer)
Group 1 - Carcinogenic to Humans
Group 2A - Probably Carcinogenic to Humans
Group 2B - Possibly Carcinogenic to Humans
NTP: (National Toxicity Program)
Known - Known Carcinogen
Reasonably Anticipated to be a Human Carcinogen
OSHA: (Occupational Safety & Health Administration)
X - Present

Revision Date Apr-17-2020

Pursuant to NOM-018-STPS-2015

This information within is considered correct but is not exhaustive and will be used for guidance only, which is based on the current knowledge of the substance or mixture and is applicable to the appropriate safety precautions for the product.

Disclaimer

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

End of Safety Data Sheet