SAFETY DATA SHEET

spectrum®

Revision date 04-July-2023 **Revision Number** 1

1. Identification

Product identifier

Product Name DEVARDAS ALLOY, GRANULAR, REAGENT

Other means of identification

Product Code(s) D1005

UN/ID no UN3178

Synonyms None

Recommended use of the chemical and restrictions on use

Recommended use No information available

Restrictions on use No information available

Details of the supplier of the safety data sheet

Supplier Address
Spectrum Chemical Mfg. Corp.
14422 South San Pedro St.
Gardena, CA 90248
(310) 516-8000

Emergency telephone number

Emergency Telephone Chemtrec 1-800-424-9300

2. Hazard(s) identification

Classification

Flammable solids	Category 2

Hazards not otherwise classified (HNOC)
Not applicable

Label elements

Warning

Hazard statements
Flammable solid

Appearance Granular Powder **Physical state** Solid **Odor** No information available

Precautionary Statements - Prevention
Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking
Ground/bond container and receiving equipment
Use explosion-proof electrical/ ventilating / lighting/ .? / equipment
Wear protective gloves/eye protection/face protection

In case of fire: Use dry chemical, CO2, water spray or alcohol-resistant foam to extinguish

Precautionary Statements - Disposal
Dispose of contents/container to an approved waste disposal plant

Unknown acute toxicity

Other information
Very toxic to aquatic life with long lasting effects. Very toxic to aquatic life.

3. Composition/information on ingredients

Substance

Not applicable.

Mixture

Chemical name	CAS No	Weight-%
Copper Metal	7440-50-8	49-51
Aluminum	7429-90-5	44-46
Zinc Metal powder or dust	7440-66-6	4-6

4. First-aid measures

Description of first aid measures

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

Inhalation Remove to fresh air. Get medical attention immediately if symptoms occur.

Eye contact Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Keep eye wide open while rinsing. Do not rub affected area. Get medical attention if irritation develops and persists.

Skin contact Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. Get medical attention if irritation develops and persists.

Ingestion Do NOT induce vomiting. Clean mouth with water and drink afterwards plenty of water. Never give anything by mouth to an unconscious person. Call a physician.

Self-protection of the first aider Remove all sources of ignition. Ensure that medical personnel are aware of the material(s) involved, take precautions to protect themselves and prevent spread of contamination. Wear personal protective clothing (see section 8). Avoid contact with skin, eyes or clothing.

Most important symptoms and effects, both acute and delayed

Symptoms May cause redness and tearing of the eyes. Burning sensation.

Indication of any immediate medical attention and special treatment needed

Note to physicians Treat symptomatically.

5. Fire-fighting measures

Suitable Extinguishing Media Dry chemical. Carbon dioxide (CO2). water spray. Alcohol resistant foam.
Large Fire CAUTION: Use of water spray when fighting fire may be inefficient.

Unsuitable extinguishing media Do not scatter spilled material with high pressure water streams.

Specific hazards arising from the chemical risk of ignition. Keep product and empty container away from heat and sources of ignition. In the event of fire, cool tanks with water spray. Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.

Explosion data
Sensitivity to mechanical impact none.

Sensitivity to static discharge yes.

Special protective equipment for fire-fighters Firefighters should wear self-contained breathing apparatus and full firefighting turnout gear. Use personal protection equipment.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

Personal precautions Evacuate personnel to safe areas. Use personal protective equipment as required. See section 8 for more information. Avoid contact with skin, eyes or clothing. Ensure adequate ventilation. Keep people away from and upwind of spill/leak. ELIMINATE all ignition sources (no smoking, flares, sparks or flames in immediate area). Pay attention to flashback. Take precautionary measures against static discharges. All equipment used when handling the product must be grounded. Do not touch or walk through spilled material.

Other information Ventilate the area. Refer to protective measures listed in Sections 7 and 8.

Methods and material for containment and cleaning up

Methods for containment Stop leak if you can do it without risk. Do not touch or walk through spilled material. A vapor suppressing foam may be used to reduce vapors. Keep out of drains, sewers, ditches and waterways.

Methods for cleaning up Take precautionary measures against static discharges. Pick up and transfer to properly labeled containers.

7. Handling and storage

Precautions for safe handling

Advice on safe handling Use personal protection equipment. Avoid breathing vapors or mists. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Use grounding and bonding connection when transferring this material to prevent static discharge, fire or explosion. Use with local exhaust ventilation. Use spark-proof tools and explosion-proof equipment. Keep in an area equipped with sprinklers. Use according to package label instructions. Handle in accordance with good industrial hygiene and safety practice. Avoid

contact with skin, eyes or clothing. Do not eat, drink or smoke when using this product. Take off contaminated clothing and wash before reuse.

Conditions for safe storage, including any incompatibilities

Storage Conditions Keep containers tightly closed in a dry, cool and well-ventilated place. Keep away from heat, sparks, flame and other sources of ignition (i.e., pilot lights, electric motors and static electricity). Keep in properly labeled containers. Do not store near combustible materials. Keep in an area equipped with sprinklers. Store in accordance with the particular national regulations. Store in accordance with local regulations. Keep out of the reach of children.

8. Exposure controls/personal protection

Control parameters

Exposure Limits The following ingredients are the only ingredients of the product above the cut-off level (or level that contributes to the hazard classification of the mixture) which have an exposure limit applicable in the region for which this safety data sheet is intended or other recommended limit. At this time, the other relevant constituents have no known exposure limits from the sources listed here.

Chemical name	ACGIH TLV	OSHA PEL	NIOSH IDLH
Copper Metal 7440-50-8	No data available	0.1 mg/m³ TWA 1 mg/m³ TWA	-
Aluminum 7429-90-5	No data available	15 mg/m³ TWA 5 mg/m³ TWA	-

Appropriate engineering controls

Engineering controls Showers
Eyewash stations
Ventilation systems.

Individual protection measures, such as personal protective equipment

Eye/face protection Tight sealing safety goggles.

Hand protection Wear suitable gloves. Impervious gloves.

Skin and body protection Wear suitable protective clothing. Long sleeved clothing. Chemical resistant apron. Antistatic boots.

Respiratory protection No protective equipment is needed under normal use conditions. If exposure limits are exceeded or irritation is experienced, ventilation and evacuation may be required.

General hygiene considerations Do not eat, drink or smoke when using this product. Contaminated work clothing should not be allowed out of the workplace. Regular cleaning of equipment, work area and clothing is recommended. Wash hands before breaks and immediately after handling the product. Wear suitable gloves and eye/face protection. Avoid contact with skin, eyes or clothing.

9. Physical and chemical properties

Information on basic physical and chemical properties

Physical state Solid
Appearance Granular Powder
Color Gray
Odor No information available
Odor threshold No information available

Property	Values	Remarks • Method
pH	no data available	None known
Melting point / freezing point	1083 °C / 1981.4 °F	None known
Boiling point / boiling range	1700 °C / 3092 °F	None known
Flash point	no data available	None known
Evaporation rate	no data available	None known
Flammability (solid, gas)	no data available	None known
Flammability Limit in Air		None known
Upper flammability or explosive limits	No data available	
Lower flammability or explosive limits	No data available	
Vapor pressure	No data available	None known
Vapor density	no data available	None known
Relative density	5.8 (Water = 1)	None known
Water solubility	Insoluble in cold water Insoluble in hot water	None known
Solubility(ies)	Insoluble in methanol Insoluble in diethyl ether Insoluble in n-octanol Insoluble in Acetone	None known
Partition coefficient	No data available	None known
Autoignition temperature	no data available	None known
Decomposition temperature		None known
Kinematic viscosity	no data available	None known
Dynamic viscosity	No data available	None known

Other information	
Explosive properties	No information available
Oxidizing properties	No information available
Softening point	No information available
Molecular weight	No information available
VOC Content (%)	No information available
Liquid Density	No information available
Bulk density	No information available

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 Heat, flames and sparks.

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

Hazardous decomposition products None known based on information supplied.

11. Toxicological information

Information on likely routes of exposure

Product Information

Inhalation Specific test data for the substance or mixture is not available. May cause irritation of respiratory tract.

Eye contact Specific test data for the substance or mixture is not available. Irritating to eyes. (based on components). Causes serious eye irritation.

Skin contact Specific test data for the substance or mixture is not available. Causes skin irritation. (based

on components).

Ingestion Specific test data for the substance or mixture is not available. Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea. Harmful if swallowed. (based on components).

Symptoms related to the physical, chemical and toxicological characteristics

Symptoms Redness. May cause redness and tearing of the eyes.

Acute toxicity

Numerical measures of toxicity

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

Unknown acute toxicity

Component Information

Chemical name	Oral LD50	Dermal LD50	Inhalation LC50
Zinc Metal powder or dust 7440-66-6	= 630 mg/kg (Rat)	-	-

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

Skin corrosion/irritation Classification based on data available for ingredients. Irritating to skin.

Serious eye damage/eye irritation Classification based on data available for ingredients. Causes serious eye irritation.

Respiratory or skin sensitization No information available.

Germ cell mutagenicity No information available.

Carcinogenicity No information available.

Reproductive toxicity No information available.

STOT - single exposure No information available.

STOT - repeated exposure No information available.

Target organ effects liver, kidney, respiratory system, Eyes, Skin.

Aspiration hazard No information available.

Other adverse effects No information available.

Interactive effects No information available.

12. Ecological information

Ecotoxicity Very toxic to aquatic life with long lasting effects.

Chemical name	Algae/aquatic plants	Fish	Toxicity to microorganisms	Crustacea
Copper Metal 7440-50-8	EC50: 0.031 - 0.054mg/L (96h, Pseudokirchneriella subcapitata) EC50: 0.0426 - 0.0535mg/L (72h, Pseudokirchneriella subcapitata)	LC50: 0.0068 - 0.0156mg/L (96h, Pimephales promelas) LC50: <0.3mg/L (96h, Pimephales promelas) LC50: =0.052mg/L (96h, Oncorhynchus mykiss) LC50: =0.112mg/L (96h,	-	EC50: =0.03mg/L (48h, Daphnia magna)

		Poecilia reticulata) LC50: =0.2mg/L (96h, Pimephales promelas) LC50: =0.3mg/L (96h, Cyprinus carpio) LC50: =0.8mg/L (96h, Cyprinus carpio) LC50: =1.25mg/L (96h, Lepomis macrochirus)		
Zinc Metal powder or dust 7440-66-6	EC50: 0.09 - 0.125mg/L (72h, Pseudokirchneriella subcapitata) EC50: 0.11 - 0.271mg/L (96h, Pseudokirchneriella subcapitata)	LC50: 0.211 - 0.269mg/L (96h, Pimephales promelas) LC50: 2.16 - 3.05mg/L (96h, Pimephales promelas) LC50: =0.24mg/L (96h, Oncorhynchus mykiss) LC50: =0.41mg/L (96h, Oncorhynchus mykiss) LC50: =0.45mg/L (96h, Cyprinus carpio) LC50: =0.59mg/L (96h, Oncorhynchus mykiss) LC50: =2.66mg/L (96h, Pimephales promelas) LC50: =3.5mg/L (96h, Lepomis macrochirus) LC50: =30mg/L (96h, Cyprinus carpio) LC50: =7.8mg/L (96h, Cyprinus carpio)	-	EC50: 0.139 - 0.908mg/L (48h, Daphnia magna)

Persistence and degradability No information available.

Bioaccumulation Inherently biodegradable.

Other adverse effects No information available.

13. Disposal considerations

Waste treatment methods

Waste from residues/unused products Should not be released into the environment. Dispose of in accordance with local regulations. Dispose of waste in accordance with environmental legislation.

Contaminated packaging Empty containers pose a potential fire and explosion hazard. Do not cut, puncture of weld containers.

14. Transport information

DOT

UN/ID no UN3178
Proper shipping name Flammable solid, inorganic, n.o.s.
Hazard class 4.1
Special Provisions III
Special Provisions A1, IB8, IP3, T1, TP33
Marine Pollutant Technical Name Copper Metal, Zinc Metal powder or dust
Description UN3178, Flammable solid, inorganic, n.o.s. (Aluminum), 4.1, III, Marine pollutant

TDG

UN/ID no. UN3178

Proper shipping name	Flammable solid, inorganic, n.o.s.
Hazard class	4.1
Packing Group	III
Special Provisions	16
Marine Pollutant Technical Name	Copper Metal, Zinc Metal powder or dust.
Description	UN3178, Flammable solid, inorganic, n.o.s. (Aluminum), 4.1, III

MEX

UN-No	UN3178
Proper Shipping Name	Flammable solid, inorganic, n.o.s.
Hazard class	4.1
Special Provisions	223, 274
Packing Group	III
Description	UN3178, Flammable solid, inorganic, n.o.s. (Aluminum), 4.1, III

ICAO (air)

UN/ID no.	UN3178
Hazard class	4.1
Packing Group	III
Special Provisions	A3

IATA

UN number	UN3178
Hazard Class	4.1
Packing group	III
Emergency Response Guide Number	3L
Special Provisions	A3, A803

IMDG

UN number	UN3178
Hazard Class	4.1
Packing group	III
EmS-No	F-A, S-G
Special Provisions	223, 274
Marine Pollutant	P

RID

UN number	UN3178
Proper shipping name	FLAMMABLE SOLID, INORGANIC, N.O.S.
Hazard Class	4.1
Packing group	III
Classification code	F3
Special Provisions	274
Description	UN3178, FLAMMABLE SOLID, INORGANIC, N.O.S. (Aluminum), 4.1, III, ENVIRONMENTALLY HAZARDOUS
Labels	4.1

ADR

UN number	UN3178
Proper shipping name	Flammable solid, inorganic, n.o.s.
Hazard Class	4.1
Packing group	III
Classification code	F3
Tunnel restriction code	(E)
Special Provisions	274
Description	UN3178, Flammable solid, inorganic, n.o.s. (Aluminum), 4.1, III, (E), ENVIRONMENTALLY HAZARDOUS
Labels	4.1

ADN

UN/ID No	UN3178
Proper shipping name	Flammable solid, inorganic, n.o.s.
Hazard Class	4.1
Packing Group	III
Classification code	F3

Special Provisions	274
Description	UN3178, Flammable solid, inorganic, n.o.s. (Aluminum), 4.1, III, ENVIRONMENTALLY HAZARDOUS
Hazard label(s)	4.1
Equipment Requirements	PP

15. Regulatory information

International Inventories

TSCA	Complies
DSL/NDSL	Complies
EINECS/ELINCS	Complies
ENCS	This product complies with ENCS:
IECSC	This product complies with China:
KECL	Complies
PICCS	Complies
AICS	All the constituents of this material are listed on the Australian Inventory of Chemical Substances (AICS).

Legend:
TSCA - United States Toxic Substances Control Act Section 8(b) Inventory
DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List
EINECS/ELINCS - European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances
ENCS - Japan Existing and New Chemical Substances
IECSC - China Inventory of Existing Chemical Substances
KECL - Korean Existing and Evaluated Chemical Substances
PICCS - Philippines Inventory of Chemicals and Chemical Substances

US 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.

Chemical name	SARA 313 - Threshold Values %
Copper Metal - 7440-50-8	1.0
Aluminum - 7429-90-5	1.0
Zinc Metal powder or dust - 7440-66-6	1.0

SARA 311/312 Hazard Categories
Should this product meet EPCRA 311/312 Tier reporting criteria at 40 CFR 370, refer to Section 2 of this SDS for appropriate classifications.

CWA (Clean Water Act)
This product does not contain any substances regulated as pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42).

CERCLA
This material, as supplied, contains one or more substances regulated as a hazardous substance under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302).

Chemical name	Hazardous Substances RQs	Extremely Hazardous Substances RQs
Copper Metal 7440-50-8	5000 lb final RQ 2270 kg final RQ	-
Zinc Metal powder or dust 7440-66-6	454 kg final RQ 1000 lb final RQ	-

US State Regulations

California Proposition 65
This product does not contain any Proposition 65 chemicals.

U.S. State Right-to-Know Regulations

Chemical name	New Jersey	Massachusetts	Pennsylvania
Copper Metal 7440-50-8	0528	Present	Environmental hazard
Aluminum 7429-90-5	0054	Present	Environmental hazard Present
Zinc Metal powder or dust 7440-66-6	2021	Present	Environmental hazard

U.S. EPA Label Information

EPA Pesticide Registration Number Not applicable

16. Other information

NFPA
Health hazards 2
Flammability 0
Instability 1
Physical and chemical properties OX
HMIS
Health hazards 2
Flammability 0
Physical hazards 1
Personal protection 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		

Key literature references and sources for data used to compile the SDS
Agency for Toxic Substances and Disease Registry (ATSDR)
U.S. Environmental Protection Agency ChemView Database
European Food Safety Authority (EFSA)
EPA (Environmental Protection Agency)
Acute Exposure Guideline Level(s) (AEGL(s))
U.S. Environmental Protection Agency Federal Insecticide, Fungicide, and Rodenticide Act
U.S. Environmental Protection Agency High Production Volume Chemicals
Food Research Journal
Hazardous Substance Database
International Uniform Chemical Information Database (IUCLID)
Japan GHS Classification
Australia National Industrial Chemicals Notification and Assessment Scheme (NICNAS)
NIOSH (National Institute for Occupational Safety and Health)
National Library of Medicine's ChemID Plus (NLM CIP)
National Library of Medicine's PubMed database (NLM PUBMED)
National Toxicology Program (NTP)
New Zealand's Chemical Classification and Information Database (CCID)
Organization for Economic Co-operation and Development Environment, Health, and Safety Publications
Organization for Economic Co-operation and Development High Production Volume Chemicals Program
Organization for Economic Co-operation and Development Screening Information Data Set
World Health Organization

Revision date 04-July-2023
Revision Note No information available.

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