

Safety Data Sheet

RMMG-1



Original issue: December, 2016

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1 – IDENTIFICATION	
CRM Code	RMMG-1
CRM Name	Mining Waste (Jarosite)
HS 2620.9	Primary zinc plant residue
Recommended Use and Restrictions of Use	This certified reference material (CRM) is intended for use in calibration of a measurement system, assessment of a measurement procedure, quality control and value assignment to materials with similar matrices. An RMMG-1 unit consists of around 80 g of material packaged in eight vacuum sealed PET+aluminum+PE lined sachets, containing a minimum of 10 g of material each..
Producer Information	Center for Mineral Technology - CETEM Certified Reference Material Program - PMRC Av. Pedro Calmon, 900 – Ilha da Cidade Universitária 21941-908 – Rio de Janeiro – RJ Brazil Telephone: (55 21) 3865-7310 / (55 21) 98565-4395 E-mail: pmrc@cetem.gov.br Website: http://www.cetem.gov.br/crm
2 – HAZARDS IDENTIFICATION	
The RMMG-1 Certificate of Analysis reports the concentrations of the individual constituents as oxides. The oxides are not freely available in the material as sold. The health and safety information provided in this SDS are for bauxite, not for its individual constituents. This material does not contain free crystalline silica.	
Classification:	
▪ Physical Hazard	Not classified.
▪ Health Hazard	Not classified.
Label Elements:	
▪ Symbol	No symbol or pictogram.
▪ Signal Word	No signal word.
▪ Hazard Statement(s)	Not applicable.
▪ Precautionary Statement(s)	Not applicable.
▪ Hazards Not Otherwise Classified	Not applicable.
▪ Ingredients with Unknown Acute Toxicity	Not applicable.
3 – COMPOSITION AND INFORMATION ON INGREDIENTS	
Substance	Jarosite
Other designation	Residue generated in a primary zinc plant.
Components	Quartz, gypsum, calcite and minerals from the amphibole, alunite and hydrotalcite supergroups/groups, probably close to hornblende, jarosite and hydrowoodwardite, respectively. Gypsum, calcite, jarosite and

	hydrowoodwardite are likely synthetic phases precipitated from metallurgical residues rather than minerals whereas quartz and hornblende might be refractory minerals withstanding the ore's processing.
CAS Registry	Not applicable.
4 – FIRST AID MEASURES	
Description of the Necessary Measures:	
▪ Inhalation	If adverse effects occur, remove to uncontaminated area. If not breathing, give artificial respiration or oxygen by qualified personnel. Seek immediate medical attention.
▪ Skin Contact	Wash skin with soap and water.
▪ Eye Contact	Flush eyes with water for at least 15 minutes. If necessary, seek medical attention.
▪ Ingestion	If adverse effects occur after ingestion, seek medical treatment.
Most Important Symptoms, Acute and Delayed	Exposure may cause mechanical irritation.
Indication of any Immediate Medical Attention and Special Treatment Needed, if Necessary	If any of the above symptoms are present, seek medical attention if needed.
5 – FIRE FIGHTING MEASURES	
Fire and Explosion Hazards	Negligible fire hazard. Avoid generating dust. The material is not flammable, explosive or combustible.
Extinguishing Media	Suitable: Regular dry chemical, carbon dioxide, water, regular foam. Unsuitable: None listed
Specific Hazards Arising from the Chemical	None listed.
Special Protective Equipment and Precautions for Fire-Fighters	Avoid inhalation of material or combustion byproducts. Wear full protective clothing and a self-contained breathing apparatus.
6 – ACCIDENTAL RELEASE MEASURES	
Personal Precautions, Protective Equipment and Emergency Procedures	Any accumulated material on surfaces should be removed and properly disposed of. Use suitable personal protective equipment (see section 8).
Measures for Environmental Protection	Keep out of water supplies and sewers.
Methods and Materials for Containment and Clean up	Collect spilled material in appropriate container for disposal. Keep unnecessary people away, isolate hazard area and deny entry.
7 – HANDLING AND STORAGE	
Safe Handling Precautions	Minimize dust generation and accumulation on surfaces. Routine housekeeping should be instituted to ensure that dust does not accumulate on surfaces. Use suitable personal protective equipment (see section 8).
Storage	The material must be stored in its original package, at room temperature in a clean and dry place. The bottle must be opened only during sampling. Avoid contact with incompatible materials (see section 10).
8 – EXPOSURE CONTROLS AND PERSONAL PROTECTION	
Exposure Limits	No occupational exposure limits have been established for bauxite. This material is a particulate matter and adequate inhalation/respiratory protection should be used to minimize exposure. The exposure limits for Particulates Not Otherwise Regulated (PNOR) are applicable. OSHA (PEL) 15 mg/m ³ (TWA, total particulates not otherwise regulated); 5 mg/m ³ (TWA, respirable particulates not otherwise regulated).
Engineering Controls	Provide local exhaust or process enclosure ventilation system. Ensure compliance with applicable exposure limits.
Personal Protection	Wear appropriate Personal Protective Equipment (PPE) to minimize exposure to this material

Respiratory Protection	If workplace conditions warrant respirator, wear adequate respirators against dust when handling the material.
Eye / Face Protection	Wear splash resistant safety goggles with a face shields. An eye wash station should be readily available near areas of use.
Skin and Body Protection	Personal protective equipment for the body should be selected based on the task being performed and the risks involved. Chemical-resistant gloves should be worn at all times when handling chemicals.
9 – PHYSICAL AND CHEMICAL PROPERTIES	
Physical State / color	Powder / pale brown color.
Odor	Odorless.
Melting Point / Freezing Point (°C)	Not available.
Initial Boiling Point and Boiling Range	Not available.
Flammability	Not available.
Explosive Limits (% volume)	Not available.
Flash Point (°C)	Not available.
Autoignition Temperature	Not available.
Decomposition Temperature	Not available.
pH	Not available
Viscosity (cP)	Not available.
Solubility in water at 20°C	Soluble.
Partition Coefficient (n-octanol/water)	Not available.
Vapor Pressure	Not available.
Vapor Density (air=1)	Not available.
Density (specific gravity)	2.67 g/cm ³
Nominal Particle Size	<0.075 mm.
10 – STABILITY AND REACTIVITY	
Reactivity	Non-reactive.
Chemical Stability	Stable at normal temperatures and pressure.
Possible Hazardous Reactions	None listed.
Conditions to Avoid	Avoid generating dust. Avoid heat, flames, sparks, and other sources of ignitions. Avoid contact with incompatible materials.
Incompatible Materials	No data available.
Hazardous Products of Decomposition	Thermal decomposition will produce miscellaneous compounds.
11 – TOXICOLOGICAL INFORMATION	
Route of Exposure	Inhalation and skin.
Symptoms Related to the Physical, Chemical and Toxicological characteristics	Mechanical irritation of the skin and eyes.
Potential Health Effects (Acute, Chronic and Delayed):	
▪ Inhalation	Irritation and difficulty breathing.
▪ Skin Contact	Contact may cause an irritant dermatitis accompanied by pruritus.
▪ Eye Contact	Dust may cause mechanical irritation with redness and possibly swelling of the conjunctiva.
▪ Ingestion	No data available on significant adverse effects.

Numerical Measures of Toxicity:	
▪ Acute Toxicity	Not classified.
▪ Skin Corrosion / Irritation	No data available.
▪ Serious Eye Damage / Eye Irritation	No data available.
▪ Respiratory Sensitization	No data available.
▪ Skin Sensitization	No data available.
▪ Germ Cell Mutagenicity	No data available.
▪ Carcinogenicity	Not classified.
▪ Listed as a Carcinogen / Potential Carcinogen	None listed.
▪ Reproductive Toxicity	No data available.
▪ Specific Target Organ Toxicity, Single Exposure	No data available.
▪ Specific Target Organ Toxicity, Repeated Exposure	No data available.
▪ Aspiration Hazard	Not applicable.
12 – ECOLOGICAL INFORMATION	
Ecotoxicity	No data available.
Persistence and Degradability	No data available.
Bioaccumulation Potential	No data available.
Mobility in Soil	No data available.
Other Adverse Effects	No data available.
13 – DISPOSAL CONSIDERATIONS	
Waste disposal	Dispose of waste in accordance with local, state and federal regulations.
Disposal of Empty Packages	The empty package, after being thoroughly cleaned and decontaminated, may be reused or recycled.
14 – TRANSPORT INFORMATION	
Transportation Requirements	The material is not regulated by national or foreign transportation requirements. The product is not classified as dangerous for transportation according to ABTLP, IMDG or IATA criteria. Classify the packaged as FRAGILE (glass bottle).
15 – REGULATORY INFORMATION	
Specific regulations	Not regulated.
16 – OTHER INFORMATION	
This SDS was prepared according to ABNT NBR 14725-4:2023 – Chemical products - Information on safety, health and the environment – General aspects of the Globally Harmonized System (GHS), classification, SDS and labeling of chemical products. Key and Legend: ABTLP- Associação Brasileira de Transporte e Logística de Produtos Perigosos, CAS – Chemical Abstracts Service; IATA - Associação Internacional de Transporte Aéreo; IMDG - International Maritime Dangerous Goods NCM - Nomenclatura Comum do MERCOSUL; OSHA – Occupational Safety and Health Administration; PEL – Permissible Exposure Limit; TWA – Time Weighted Average. Disclaimer: This SDS provides information based on the current level of knowledge only for use in assessing the hazardous nature of the material and safety measures. The certified values for this material are given in the Certificate of Analysis. Users of RMMG-1 certified reference material should ensure that the SDS in their possession is current. This can be accomplished by contacting CETEM: (55 21) 3865-7310 / (55 21) 98565-4395, e-mail pmrc@cetem.gov.br; or downloading it from the website http://www.cetem.gov.br/mrc.	

