

Document Code	Review	Reason	Issue Date
ITAK-FISPQ-Cu-800/899	03	CAS Number classification	December/05/2023

### 1- PRODUCT AND MANUFACTURER IDENTIFICATION

Product Name: Certified Reference Material of Copper Ore or Copper Concentrate

Identification Codes: Applicable to products whose codes vary from ITAK-800 to ITAK-899

CAS Number: Not available

Product Uses: This Certified Reference Material is indicated for calibration of measurement equipment, validation of analytical methods, quality control (QA/QC) in general, and assignment of values to similar materials.

Manufacturer: Instituto de Tecnologia August Kekulé Ltda

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### 2- RISK IDENTIFICATION

Powdered Copper Ore and Concentrates pose risks to the respiratory tract by inhalation. Contact with eyes or skin may cause injuries by friction (mechanical action). No chemical hazards have been identified under the normal conditions of the intended use. No environmental risk has been identified in the available information.

### 3- COMPOSITION AND INFORMATION ABOUT THE COMPONENTS

Substance: Copper Ore and Concentrates

Physical Nature: Pulverized ore (powder)

Chemical Nature: Ore containing Copper (Cu), Iron (Fe) and Sulfur (S) as main elements

Chemical Composition: The product contains Cu, Fe, and S in various proportions, and also Au (Gold) and Ag (Silver) in low concentrations

#### **4- FIRST AID PROCEDURES**

- Inhalation: Remove the victim to fresh air and seek immediate medical advice leading the information about the nature of the product.
- Ingestion: If it occurs, seek immediate medical attention leading the information about the nature of the product.
- Contact (skin, eyes): Wash with plenty of water. In case of irritation, seek medical attention.

#### **5- FIRE FIGHTING ACTIONS**

Certified Reference Materials of Copper Ore and Concentrates are not flammable or combustible products.

#### **6- CONTROL ACTIONS IN CASE OF SPILL OR LEAK**

Due to they are used on a small scale in their practical application, Certified Reference Materials of Copper Ore and Concentrates when accidentally spilled, do not cause environmental impact or damage to health. If it occurs, provide immediate removal of them, discard the residue naturally, and clean the spill area using a vacuum cleaner or even a damp cloth.

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

All direct handling of the product should be done using the appropriate Personal Protective Equipment which is described in section 8 of this document.

Storage of the product must comply with the following conditions:

- Keep in a dry place in original unopened packaging.
- Avoid places with exposure to heat and humid environments.
- Keep the product in the original bottle. In case of breakage, it can be discarded in a plastic bottle with a lid.

#### **8- EXPOSURE CONTROL AND INDIVIDUAL PROTECTION**

When handling, use the appropriate Personal Protective Equipment:

- Dust mask: protection to respiratory tract.
- Safety goggles or face shield: eye and face protection (specific operations).
- Gloves: protection of hands and skin.

- Apron, overcoat or similar: body protection

### **9- PHYSICAL AND CHEMICAL PROPERTIES**

- Physical state: Solid powder.
- Odor: The concentrated product has a slightly sulphurous odor.
- Radioactivity: Not present.
- Flammability: No flammable.
- Solubility: Insoluble in water.

### **10- STABILITY AND REACTIVITY**

- Stable product under normal conditions.
- It may be reactive in the presence of strong acids resulting in soluble and insoluble inorganic compounds.

### **11- TOXICOLOGICAL INFORMATION**

No toxic product. It may cause eye irritation through contact and friction and irritation of mucous membranes through inhalation or aspiration.

### **12- ECOLOGICAL INFORMATION**

The product does not cause any impact if discarded in the environment because it is mineral. It was taken from the environment having only undergone physical transformations and homogenization process without adding to it any type of contaminant or product of any nature.

### **13- TREATMENT AND DISPOSAL CONSIDERATIONS**

The product does not require any type of pretreatment before its disposal in the environment. This disposal, when necessary, is made in minimum quantities because the product is all consumed in its normal use.

### **14- TRANSPORT INFORMATION**

Not classified as dangerous for transportation. Not subject to transport regulations.

### **15- REGULATORY INFORMATION**

Not applicable.

## 16- ABBREVIATIONS

- . SDS: Safety Data Sheet for Chemical Products
- . CRM: Certified Reference Material
- . QA/QC: Quality Assurance/Quality Control
- . CAS: Chemical Abstract Service

## 17- REFERENCES

- ISO GUIDE 31 – Reference Materials – Contents of certificates, labels and accompanying documentation.
- ISO GUIDE 32 – Calibration in analytical chemistry and use of certified reference materials.
- ABNT NBR 14725 – Chemical Product Safety Data Sheet – MSDS – Rio de Janeiro, 2001.
- Ministry of Labor and Employment – Information on Regulatory Standards for Occupational Safety and Health (NR 15 – annex 12).
- Occupational Safety & Health Administration (OSHA).
- Chemical Abstract Service from American Chemical Society Website.

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