



# SDS

## Safety Data Sheet – SDS

According to NBR 14725:2023 and GHS - Globally Harmonized System



### 1. IDENTIFICATION

**Product Name**

Equilibrium Catalyst

**Product ID**

E-Cat

**Recommended use**

Fluidized catalyst cracking for oil refineries

**Code**

DSG-MD-755.2-021-02

**Latest Version**

07-March- 2024 – Rev: 8

**Manufacture****Supplier**

Fábrica Carioca de Catalisadores S/A

Rua Nelson da Silva 663

Distrito Industrial de Santa Cruz

CEP 23565 - 160 - Rio de Janeiro - RJ – Brasil

**General Telephone** +55 21 2195-9001

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### 2. HAZARDS IDENTIFICATION

**HAZARDOUS CLASSIFICATION:**

Product classified as non-hazardous.

Not classified for respiratory or skin sensitization.

**PROPER ELEMENTS OF LABELING:**

**Pictograms:** Not applicable.

**Word of warning:** Not applicable.

**Hazard:** Not applicable.

**Precautionary phrases:** Not applicable.

**OTHERS HAZARDOUS ASPECTS:**

The product contains no substances which at their given concentration, are considered to be hazardous to health. Prolonged contact to skin and respiratory system can induce irritation.

This product does not constitute an environmental hazard. If discarded, it will be considered non-inert according to Brazilian Association of Technical Standard (ABNT) 10.004/2004.



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### 3. COMPOSITION AND INFORMATION ON THE INGREDIENTS

**Pure substance / mixture:** Mixture.**Chemical Name:** Rare Earth Silicoaluminate.

#### COMPOSITION AND INFORMATION FOR ELEMENTARY INGREDIENTS OF THE SUBSTANCE

Chemical Name	CAS-No	Weight %
Amorphous Silicon oxide	7631-86-9	25,0 a 60,0
Aluminum Oxide	1344-28-1	25,0 a 55,0
Rare Earth Oxides	68188-83-0	0,0 a 10,0
Iron	7439-89-6	0,2 a 2,0
Carbon	7440-44-0	0,0 a 1,5
Vanadium	7440-62-2	0,0 a 0,1
Nickel	7440-02-0	0,0 a 0,1
Copper	7440-50-8	0,0 a 0,01
Antimony	7440-36-0	0,0 a 0,03

**Note:** The exact concentrations of the above listed chemicals are being withheld as a trade secret.

### 4. FIRST-AID PROCEDURES

**Inhalation:**

Move to fresh air. If breathing is difficult, give oxygen. If not breathing, give artificial respiration preferably mouth to mouth. Seek medical advice.

**Skin contact:**

After contact with skin, wash immediately with plenty of water. Take off clothes and wash it before using it again, if irritation persists, seek medical advice.

**Eye contact:**

In the case of contact with eyes, rinse immediately with plenty of water during at least 15 minutes. Those who wear contact lens, remove it immediately and assure water penetrates whole eye. Don't rub eyes and do not apply any cream, oil or chemical products. If irritation persists, seek medical advice.

**Ingestion:**

Rinse mouth with water. Give plenty of water to drink.

**Notes to Physician:** There is no specific antidote. Treat symptomatically based on individual response.

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## 5. FIRE-FIGHTING MEASURES

**Extinguishing method:**

Not combustible, if some part is involved in a fire, employ water mist, dry chemical powder or CO<sub>2</sub> to quench the fire, taking into consideration the most restrictive class of the equipment as well as the place where the product is stored.

**Specific product hazard:**

May release toxic and/or hazardous fumes and gases, including metal oxides.

**Protective Equipment and Precautions for Firefighters:**

As in any fire, exposure of people to flames, fumes or any other combustion product should be avoided. Evacuate all the non-indispensable people from the fire site. Firemen should wear complete masks with special breathing equipment and protection.

**Hommel Diagram**

NPFA Hazard Rating: Health: 2 Flamability: 1 Reactivity: 0 Other: None.

0 - Minimal 1 - Slight 2 - Moderate 3 - High 4 - Extreme - Chronic Health Hazard (see Section 11).



## 6. CONTROL PROCEDURES FOR LEAKAGE

**Personal Precautions:**

Avoid breathing the dust formed. See item 8 for personal protection.

**Methods for Containment:**

Prevent further leakage or spillage if safe to do so.

**Cleaning Procedures:**

Take up mechanically and collect in suitable container for reuse or suitable disposal.



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## 7. HANDLING AND STORAGE

**Handling:**

Avoid prolonged and/or repeated contact with skin and eyes, as well as inhalation of product during handling. Upon handling, avoid dust gathering. Take precautionary measures against static discharges DO NOT heat under inert conditions.

**Storage:**

Avoid humidifying or wetting the product since this makes handling difficult. In areas of dust generation suitable ventilation should be provided in order to minimize personal exposure.

**Fire and explosion prevention:**

Avoid dust gathering. Avoid static electricity formation in the handling area.

**Hygiene procedures:**

Avoid eating, drinking and smoking in the workplace, wash hands after handling the chemical product; remove contaminated clothing and protection equipment before entering feeding areas.



## 8. EXPOSURE CONTROL AND INDIVIDUAL PROTECTION

**CONTROL PARAMETERS****Occupational exposure limits:**

There is no established limit for the product. See below the exposure limit for the components:

Chemical Name	TLV-TWA Exposure Limit according to ACGIH	Exposure Limit according to OSHA PEL
Amorphous Silicon oxide (1)	10,0 mg/m <sup>3</sup>	TWA 16 mg/m <sup>3</sup>
Aluminium oxide	1 mg/ m <sup>3</sup>	TWA 15 mg/m <sup>3</sup> (total) TWA 5 mg/m <sup>3</sup> (respirable)
Rare-earth oxides	Not established	Not established
Iron	Not established	Not established
Carbon	Not established	Not established
Vanadium	Not established	TWA 0,1 mg/m <sup>3</sup> (total)
Nickel	0,2 mg/ m <sup>3</sup>	TWA 0,2 mg/m <sup>3</sup> (total)
Copper	1 mg/ m <sup>3</sup>	TWA 1 mg/m <sup>3</sup> (total)
Antimony	0,5 mg/m <sup>3</sup>	TWA 0,5 mg/m <sup>3</sup> (total)

**Note (1):** Crystalline silica content from 0.0 to 1.0% and of inhalable particles smaller than 10 micra from 0.0 to 0.1% in the product.

**Engineering Control Procedures:** Eliminate circulation or excess of dust in the air with the aid of ventilation.

**IDENTIFICATION OF THE PRODUCT AND COMPANY**

Product Name: Equilibrium Catalyst

Product ID: E-Cat

Code: DSG-MD-755.2-021-02

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## 8. EXPOSURE CONTROL AND INDIVIDUAL PROTECTION (Continuation)

### INDIVIDUAL PROTECTION MEASURES

**Respiratory Protection:**

If the handling generates dust, a respiratory mask should be worn.

**Protection of Eyes/Face:**

Protection glasses (type: wide-view) are recommended whenever dust is formed during product handling.

**Skin and Body Protection:**

The contact of the skin with the product should be minimized by wearing suitable safety clothing and gloves, according to the potential exposure type.



## 9. PHYSICAL AND CHEMICAL PROPERTIES

**Aspect:** Free-flowing.**Color:** off-white powder.**Odor:** Odorless.**Melting Point:** Higher than 1200 °C.**Boiling Point:** Not determined.**Flammability:** Not applicable (non combustible product).**Flammability or Explosiveness lower/upper Limit:** Not applicable.**Flash Point:** Not applicable.**Auto-ignition:** Not applicable.**Decomposition temperature:** Not applicable.**pH:** Not determined.**Viscosity:** Not applicable.**Water solubility:** Not relevant.**Partition coefficient – n-octanol/water:** Not determined.**Vapor pressure:** Not relevant.**Apparent Density:** 600-1000 kg/m<sup>3</sup>.**Vapor density:** Not applicable.**Particle characteristics:** Not Available.**IDENTIFICATION OF THE PRODUCT AND COMPANY****Product Name:** Equilibrium Catalyst**Product ID:** E-Cat**Code:** DSG-MD-755.2-021-02**Page:** 5 de 9 / **Latest Version:** 07-March-2024 / **Rev:** 8**FÁBRICA CARIOCA  
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## 10. STABILITY AND REACTIVITY

**Reactivity:** Not applicable.

**Chemical Stability:** The product is stable under normal conditions.

**Possibility of hazardous reactions:** Upon heating without O<sub>2</sub>, the product will liberate a flammable/toxic gas.

**Conditions to avoid:** Avoid dust formation. Do not heat under inert conditions.

**Incompatible materials or substances:** Strong acids. Sulfur-containing materials.



## 11. INFORMAÇÕES TOXICOLÓGICAS

**Acute Toxicity:** Category 5

No experimental data on the toxicity of the product. Can be expected for elements related to acute toxicity Oral LD<sub>50</sub> > 5000 mg/kg.

**Skin Irritation:** The powder can have a drying effect on the skin, the effect of prolonged or repeated exposure.

**Serious eye damage and eye irritation:** Not available.

**Respiratory or skin sensitization:** Prolonged or repeated inhalation may cause respiratory irritation, coughing and chest discomfort.

**Germ cell mutagenicity:** Not available.

**Carcinogenicity:** Not available.

Chemical Name	CAS-No	ACGIH	IARC	NTP	OSHA
Amorphous Silicon oxide	7631-86-9	-	-	-	-
Zeolite	1318-02-1	-	-	-	-
Aluminium oxide	1344-28-1	-	Group 3	-	-
Kaolin	1332-58-7	-	Group 3	-	-

**Reproductive toxicity:** Not available.

**Organ toxicity - specific target - single exposure:** Not available.

**Organ toxicity - specific target - Repeated Exposure:** Not available.

**Aspiration Hazard:** Not available.

**Note:** Carcinogenic, mutagenic and embryotoxic properties of this product are unknown.

### IDENTIFICATION OF THE PRODUCT AND COMPANY

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## 12. ECOLOGICAL INFORMATION

Chemical Name	Freshwater Algae EC50/72h	Freshwater Fish LC50/96h	Water Flea EC50/48h
Zeolite	> 100 mg/l	680 mg/l	100 mg/l
Amorphous Silicon Oxide	-	5000 mg/l	-

**Ecotoxicity:** Not available.

**Persistence and degradability:** Not available.

**Bioaccumulative potential:** Bioaccumulative effects not related.

**Soil Mobility:** Not applicable.

**Note:** Effects, behaviors and impacts of this product on the environment and human beings are unknown. The product can be considered as relatively safe for the environment and human beings.



## 13. TREATMENT AND DISPOSAL

**Waste Treatment and Disposal:** The material which cannot be reprocessed or recycled at any point of the process should be discarded according to the local legislation.

After use the product can be reprocessed to produce mortar, cement, clay brick and cold pressed brick since it is considered an artificial pozzolan according to Brazilian Regulating Standard NBR 5736 Pozzolanic Portland Cement of July 1<sup>st</sup>, 1991 and applicable legal rules.

**Used packaging:** Disposal of containers and packaging should follow the applicable local legislation.



## 14. TRANSPORTATION

### LAND TRANSPORTATION

**ADR Class:** Not restricted.

**ADR Number:** Not applicable.

**RID Class:** Not restricted.

**RID Number:** Not applicable.

**UN Number:** Not applicable.



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## 14. TRANSPORTATION (Continuation)

### WATER TRANSPORTATION

**IMO/IMDG Code:** Not restricted.**Packaging Group:** Not applicable.**UN Number:** Not applicable.**EMS:** Not applicable.**MFAG:** Not relevant.**Marine Pollutant:** Not applicable.

### AIRBORNE TRANSPORT

**ICAO-TI/IATA-DGR****UN Number:** Not applicable.**Packaging Group:** Not applicable.

## 15. PROPER REGULATIONS

### NBR 14725/2013

**Labeling applied according to European Community regulations.****Symbology:** Not applicable.**Risk information:** Not applicable.**Safety information:** S22. Do not breathe the formed dust. S26. In case of contact with eyes, wash immediately with plenty amount of water and seek medical advice.

## 16. FURTHER INFORMATION

The information contained in this document is based in the current knowledge level of the company. The product user is responsible for the compliance with existing laws and regulations.

### ABBREVIATION LIST

**CAS:** Chemical Abstract Service.**ACGIH:** American Conference of Governmental Industrial Hygienists (USA).**TLV-TWA:** Threshold Limit Values Time-Weighted Average.**OSHA PEL:** Occupational Safety and Health Administration Permissible Exposure Limits (USA).**LD<sub>50</sub>:** Lethal dose is the amount of an ingested substance that kills 50 percent of a test sample.**ADR/RID:** European Agreement concerning the International Carriage of Dangerous Goods by Road.**IMO IMDG Code:** International Maritime Org. Dangerous Goods Code.



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## 16. FURTHER INFORMATION (Continuation)

**IARC:** International Agency for Research on Cancer.

**NTP:** National Toxicology Program.

**UN:** United Nations.

**EMS:** Environmental Management Systems.

**MFAG:** Medical First Aid Guide for Use in Accidents Involving Dangerous Goods by International Maritime Organization.

**ICAO-TI:** International Civil Aviation Organization - Technical Instructions.

**IATA-DGR:** International Air Transport Association - Dangerous Goods Regulations

**NBR:** Brazilian Regulating Standard.

**ABNT:** Brazilian Association of Technical Standards.

**NFPA:** National Fire Protection Association.

### REFERENCES

ACGIH 2016 Occupational Exposure Limits

ABNT NBR 14725:2023

