SECTION 1: PRODUCT AND COMPANY INFORMATION

Manufacturer: ARO Industrial Solutions LLC
Address: 8011 NW 68th Street
Miami, FL 33166
Trade Name: Fluid Catalytic Cracking Catalyst
Chemical Family: Minerals
Recommended Uses: Refining Catalyst

Emergency Phone Number:
Worldwide Intl.
+1-813-248-0585 or in North America 1-800-255-3924

SECTION 2: HAZARD IDENTIFICATION

Signal Word: DANGER
Physical Hazards: Not Classified
Health Hazards: Carcinogenicity – Category 1 – May Cause Cancer.
Specific Target Organ Toxicity (Repeated Exposure) – Category 1
Causes damage to organs (lungs) through prolonged or repeated exposure.
Pictogram: Health Hazard
Precautionary Statements:
Prevention: Obtain special instructions before use. Do not handle until all safety Precautions have been read and understood. Wear protective gloves/ Protective clothing/eye protection/face protection.
Response: If exposed or concerned: Get medical advice/attention.
Storage: Store locked up.
Disposal: Dispose of contents/ container to an approved waste disposal plant.
Environmental Hazard: Not Classified
HNOC:* None Known
Supplemental info: None
*Hazard(s) not otherwise classified

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

Components	CAS Number	Percentage (wt%)
Silica	7631-86-9	35-50
Alumina	1344-28-1	40-60
Lanthanum Oxide	1312-81-8	0.1-5.5
Cerium(IV) Oxide	1306-38-3	0.0-0.2

SECTION 4: FIRST AID MEASURES

General advice: Move out of dangerous area. Consult a physician. Show this safety data sheet to the doctor in attendance.

Inhalation: Remove victim from area of exposure – avoid becoming a casualty. Remove contaminated clothing and loosen remaining clothing. Allow patient to assume most

comfortable position and keep warm. Keep at rest until fully recovered. Seek medical advice if effects persist.

Skin Contact: If skin contact occurs, remove contaminated clothing and wash skin with running water. If irritation occurs seek medical advice.

Eye Contact: If in eyes, wash out immediately with water. In all cases of eye contamination it is a sensible precaution to seek medical advice.

Ingestion: If swallowed rinse mouth with water. If swallowed, do NOT induce vomiting. Give a glass of water. Seek medical advice.

Indication of immediate medical attention and special treatment needed: Treat symptomatically.

SECTION 5: FIREFIGHTING MEASURES

Suitable Extinguishing Media:	Not combustible, however, if material is involved in a fire use: Extinguishing media appropriate to surrounding fire conditions.
Specific hazards arising from the substance or mixture:	Non-combustible material.
Suitable extinguishing media:	Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.
Special hazards arising from the substance or mixture:	Silicon oxides
Advice for firefighters:	Wear self-contained breathing apparatus for firefighting if necessary.
Further information:	No data available.

SECTION 6: ACCIDENTAL RELEASE MEASURES

Refer to Section 8: Exposure Control and Personal Protection

Emergency Action: Isolate release area and keep unnecessary people away. Exercise caution regarding personnel safety and exposure. Avoid dust formation. Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Evacuate personnel to safety areas. Avoid breathing dust. For personal protection see section 8.

Spill/Leak Procedure: Recovery and reuse rather than disposal, should be the ultimate goal of handling efforts. Use appropriate methods, shovels, brooms, and vacuums to clean up the spill. If mixed with water, or likely to be mixed with any liquid, dike area to contain spill. Reclaim if possible. After all visible traces have been removed, flush area with large amounts of water. If spilled on the ground, contaminated soil should be removed and placed in proper containers for reclamation or disposal. Do not flush material to public sewer or waterway. Decontaminate all tools and equipment following cleanup.

Disposal: Contact a licensed professional waste disposal service to dispose of this material. Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber. Offer surplus and non-recyclable solutions to a licensed disposal company.

Notification: Any spill or release to navigable water must be reported immediately to the National Response Center (800.424.8802), as required by U.S. federal law.

SECTION 7: HANDLING AND STORAGE

Prefer to Section 8: Exposure Control and Personal Protection

Handling: Avoid contact with skin and eyes. Avoid formation of dust and aerosols. Further processing solid materials may result in the formation of combustible dusts. The potential for combustible dust formation should be taken into consideration before additional processing occurs. Provide appropriate exhaust ventilation at places where dust is formed.

Storage: Store product in closed containers in a well-ventilated area away from incompatibles. Do not store in unlabeled containers.

SECTION 8: EXPOSURE CONTROL AND PERSONAL PROTECTION

Component Exposure Limits: Warning! Repeated or prolonged exposure or over exposure to dust may cause silicosis (a severe permanent condition where lungs become scarred or fibrotic) and potentially lung cancer. Dust may cause mechanical eye irritation by abrasion. Personnel responding to a spill of this material should wear appropriate personal protective equipment.

Engineering Controls: Ensure ventilation is adequate to maintain air concentrations below Workplace Exposure Standards. Keep containers closed when not in use. If in the handling and application of this material, safe exposure levels could be exceeded, the use of engineering controls such as local exhaust ventilation must be considered and the results documented.

Eye and Face Protection: Face shield and safety glasses Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin Protection: Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands. Full contact material: nitrile rubber minimum layer thickness 0.11 mm, break through time 480 min.

Respiratory Protection: NIOSH/MSHA approved respirator should be worn where dust, mist or sprays are expected. Maintain, clean, and fit test respirators in accordance with OSHA regulations. Maintain and test ventilation equipment.

Other Protective Equipment: Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday. Compete suit protecting against chemicals. The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

Appearance	Gray powder	Flash Point	NA
Apparent Bulk Density	0.65-0.85 g/ml	Upper/Lower Flammability Limits	NA
pH	Not Determined	Auto-ignition Temperature	NA
Solubility in Water	Not Determined	Decomposition Temperature	NA
Odor	None	Vapor Pressure	NA
Odor Threshold	Not Determined	Vapor Density	NA
Melting Point ($^{O}F/^{O}C$)	NA	Partition Coefficient	NA
Boiling Point	NA	Viscosity	NA
Initial Boiling Point	NA	Critical Temperature	NA
Note: Physical and chemical properties are provided for safety, health and environmental considerations only and may not fully represent product specifications. Those should be requested separately.			

SECTION 10: STABILITY AND REACTIVITY

Reactivity: Does not react under normal conditions of use.

Chemical Stability: Stable under normal conditions of use.

Incompatibility/Conditions to Avoid: Avoid dust generation. Avoid strong oxidizing agents such as fluorine, boron trifluoride, chlorine trifluoride, manganese trifluoride, and oxygen trifluoride. Contact with these materials may cause fire or explosions. Silica dissolved in hydrofluoric acid producing silicon tetrafluoride, a corrosive gas.

SECTION 11: TOXICOLOGICAL INFORMATION

No adverse health effects expected if the product is handled in accordance with this Safety Data Sheet and the product label. Symptoms or effects that may arise if the product is mishandled and overexposure occurs are:

Ingestion: Swallowing may result in nausea, vomiting, and abdominal pain.

Eye contact: Fluid Catalytic Cracking Catalyst may be an eye irritant. Exposure to the dust may cause discomfort due to particulate nature. May cause physical irritation to the eyes.

Skin contact: Repeated or prolonged skin contact may lead to irritation.

Inhalation: Breathing in dust may result in respiratory irritation.

Acute toxicity: The toxicity of fluid catalytic cracking catalyst is directly proportional to the ability of any particle to reach the lower respiratory tract. Catalyst particles with an aerodynamic diameter below 10um are likely to be most harmful to humans, as they reach the lower respiratory tract and are less readily removed by the lungs.

Chronic effect: May cause lung cancer, silicosis, lymph node fibrosis, airways disease, emphysema, and lung inflammation.

Carcinogenicity: NA

Supplemental Information: The chronic health risks are associated with respirable particles of 3-4 um over protracted periods of time. Currently, there is a limited understanding of the mechanism of catalyst particle toxicity, including its mechanisms for lung carcinogenicity. Additional studies are needed to determine whether the cell transforming activity of particle is related to its carcinogenic potential.

SECTION 12: ECOLOGICAL INFORMATION

Ecotoxicity:	Not Available
Persistence and Biodegradability:	Not Available
Bioaccumulative Potential:	Not Available
Mobility in Soil:	Not Available

SECTION 13: DISPOSAL CONSIDERATION

Treatment, storage, transportation, and disposal must be in accordance with applicable Federal, State/Provincial, and local regulations. Regulations may vary in different locations.

SECTION 14: TRANSPORT INFORMATION

DOT (US): Not dangerous goods
IMDG: Not dangerous goods
IATA: Not dangerous goods

SECTION 15: REGULATORY INFORMATION

Inventories: Components are included on the TSCA and DSL chemical inventories.

Reportable Quantities (RQ):	None
SARA 302 Components:	None
SARA 304 Components:	None
SARA 313 Components:	None
SARA 311/312 Hazards:	Acute Health – Chronic Health Hazard
State Right to Know:	NA
NFPA Rating:	Health: 1; Fire: 0; Reactivity: 0; Special = NDA
HMIS Rating:	Health: 1; Fire: 0; Reactivity: 0; Protective Equipment –X

SECTION 16: OTHER INFORMATION

Disclaimer: this SDS summarizes to our best knowledge at the date of issue, the chemical health and safety hazards of the material and general guidance on how to safety handle the material in the workplace.

ARO Industrial Solutions LLC cannot anticipate or control the conditions which the product may be used, each user must, prior to usage, assess and control the risks arising from its use of the material. If clarification or further information is needed, the user should contact HCpect representative at the contact details in Section 1 of this SDS.