



Girdler and CCI Catalysts
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MATERIAL SAFETY DATA SHEET
G-72D

CA060

SECTION I PRODUCT IDENTIFICATION

Trade Name and Synonyms: G-72D

Chemical Family: Heterogeneous Catalyst

Formula: $\text{CaAl}_2\text{O}_4 + \text{ZnO}$

SECTION II HAZARDOUS INGREDIENTS

Hazardous Components in the Solid Mixture

<u>COMPONENT</u>	<u>CAS No.</u>	<u>%</u>	<u>OSHA/PEL</u>	<u>ACGIH/TLV</u>
Calcium aluminate	12042-68-1	5-10	5.0 mg/m ³	2.0 mg/m ³
Zinc oxide	1314-13-2	90-95	10.0 mg/m ³	10.0 mg/m ³

SECTION III PHYSICAL DATA

Appearance and Odor: White extrusions. No odor.

Melting Point: Greater than 2000°C, greater than 3500°F.

Solubility in Water: Insoluble.

Bulk Density: 70 lbs./cu. ft.

Percent Volatile by Weight at 1000°F: Less than 5%.

SECTION IV FIRE EXPLOSION DATA

Fire and Explosion Hazard

Negligible fire and explosion hazard when exposed to heat or flame by reaction with incompatible substances.

Flash Point
Nonflammable.

SAL 000009439

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G-72D****Firefighting Media**

Dry chemical, water spray, or foam.

For larger fires, use water spray fog or foam.

Firefighting

Nonflammable solids, liquids or gases: Cool containers that are exposed to flames with water from the side until well after fire is out. For massive fire in enclosed area, use unmanned hose holder or monitor nozzles; if this is impossible, withdraw from area and let fire burn. Withdraw immediately in case of rising sound from venting safety device or any discoloration of the tank due to fire.

SECTION V HEALTH HAZARD DATA

Health hazards may arise from inhalation, ingestion, and/or contact with the skin and/or eyes.

Calcium aluminate may cause irritation of the eyes and skin, especially when wet.

Inhalation of zinc dust, mists, or fumes may irritate the respiratory tract, mucous membranes and skin. At higher levels of exposure "zinc chills" or "zinc fume fever" may occur with symptoms of metallic or sweet taste, marked thirst, coughing, weakness, fatigue, muscular pain, nausea and vomiting, followed by fever, perspiration and chills, dyspnea, rales throughout the chest, and tachycardia. Onset of symptoms usually occur about 4-12 hours after exposure. Workers in zinc refining have been reported to suffer from a variety of nonspecific intestinal, respiratory, and nervous symptoms. Excessive contact may cause perforation of the nasal septum. Prolonged or repeated contact under poor hygienic conditions may produce a papular, pustular eczema or dermatitis called "oxide pox." Contact with the eye tissue may produce irritation and/or conjunctivitis.

First Aid (Inhalation)

Remove to fresh air immediately. If breathing has stopped, give artificial respiration. Keep affected person warm and at rest. Get medical attention immediately.

First Aid (Ingestion)

Do NOT induce vomiting. Immediately give large quantities of water. If vomiting does occur, give fluids again. Do not induce vomiting or give anything by mouth to an unconscious person. Call a physician or the nearest Poison Control Center immediately.

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G-72D****First Aid (Eyes)**

Immediately flush the eyes with large quantities of running water for a minimum of 30 minutes. Hold the eyelids apart during the flushing to insure rinsing of the entire surface of the eye and lids with water. Do not attempt to neutralize with chemical agents. Oils or ointments should not be used. Obtain medical attention as soon as possible.

First Aid (Skin)

Immediately flush affected areas with large quantities of water. Remove contaminated clothing while flushing the skin. Get prompt medical attention.

SECTION VI REACTIVITY DATA

Reactivity

Is stable under normal temperatures and pressures in sealed containers. Hazardous polymerization will not occur. Calcium aluminate reacts with water to form alkaline slurry. Toxic fumes are emitted when heated to decomposition.

SECTION VII SPILL OR LEAK PROCEDURES

Notify safety personnel of spills or leaks. Clean-up personnel need protection against inhalation of dusts or fumes. Eye protection is required. Vacuuming and/or wet methods of cleanup are preferred. Place in appropriate containers for disposal, keeping airborne particulates at a minimum.

Disposal

Consult applicable local, state, and federal regulations to select the method of disposal. Recover metal components by reprocessing whenever possible.

SECTION VIII SPECIAL PROTECTION INFORMATION

Respiratory Protection

Provide a NIOSH/MSHA jointly approved respirator in the absence of proper environmental control. Contact your safety equipment supplier for proper mask type.

SAL 000009441

**CA060****MATERIAL SAFETY DATA SHEET
G-72D****Ventilation**

Provide general and/or local exhaust ventilation to keep exposures below the TLV. Ventilation used must be designed to prevent spots of dust accumulation or recycling of dusts.

Protective Clothing

Wear protective clothing, including long sleeves and gloves, to prevent repeated or prolonged skin contact.

Eye Protection

Chemical splash goggles designed in compliance with OSHA regulations are recommended. Consult your safety equipment supplier.

SECTION IX REGULATORY INFORMATION

This product contains substances which appear on lists of the indicated act or agency.

XX American Conference of Governmental Industrial Hygienists (ACGIH) Threshold Limit Values for Chemical Substances in the Work Environment

 California Proposition 65

 Clean Air Act 40 CFR 61

XX Clean Water Act 40 CFR 116

XX Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA) 40 CFR 302

 International Agency for Research on Cancer (IARC) Monographs on the Evaluation of Carcinogenic Risks to Humans Volumes 1-42.

 NTP Annual Report on Carcinogens

XX Occupational Safety and Health Administration (OSHA) 29 CFR 1910

 Resource Conservation and Recovery Act (RCRA) 40 CFR 261 Subpart C

XX Superfund Amendments and Reauthorization Act of 1986 (SARA) Title III Section 313 40 CFR 372

XX Toxic Substances Control Act (TSCA) 40 CFR 700



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SECTION I BIBLIOGRAPHY

Clinical Toxicology of Commercial Products, Fifth Edition, Gosselin, Smith, Hodge, Williams and Wilkins, Baltimore, 1984.

Dangerous Properties of Industrial Materials, Sax, N. Irving, ed., Van Nostrand Reinhold Company, New York, 7th Edition, 1989.

IARC Monographs on the Evaluation of Carcinogenic Risks to Humans, Overall Evaluations of Carcinogenicity: An Updating of IARC Monographs, Volumes 1-42, Lyon: World Health Organization, International Agency for Research on Cancer, 1987.

IARC Monographs on the Evaluation of Carcinogenic Risks to Humans: Silica and Some Silicates, Volume 42, Lyon, World Health Organization, International Agency for Research on Cancer, 1987.

Kentucky Occupational Safety and Health Standards for General Industry, 29 CFR Part 910 as adopted by 803 KAR 2:020 with Amendments as of July 31, 1986, Promulgated by Occupational Safety and Health Administration, U.S. Department of Labor, Kentucky Occupational Safety and Health Program, Kentucky Labor Cabinet, Commerce Clearing House, Inc., Chicago 1986.

Occupational Diseases, A Guide to their Recognition, U. S. Department of Health, Education, and Welfare, Public Health Service, Center for Disease Control, NIOSH, Revised Edition, June 1977.

Patty's Industrial Hygiene and Toxicology, Clayton, G.D., Clayton, F.E., eds., John Wiley and Sons, New York, 3rd Edition, Volume 2, A-C, 1981.

TLVs^R Threshold Limit Values and Biological Exposure Indices for 1988-1989, American Conference of Governmental Industrial Hygienists, Cincinnati, OH, 1988.

MSDS's from Suppliers of Raw Materials.

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SECTION XI

The information presented herein is believed to be accurate but is not warranted. Recipients are advised to confirm in advance that the information is current and applicable to meet their circumstances.

• No Information Available

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SAL 000009444



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CA 061

MATERIAL SAFETY DATA SHEET
N-339

SECTION I PRODUCT IDENTIFICATION

Trade Name and Synonyms: N-339

Chemical Family: Inorganic

Formula: $\text{Al}_2\text{O}_3 + \text{CoO} + \text{MoO}_3$

SECTION II HAZARDOUS INGREDIENTS

Hazardous Components in the Solid Mixture

<u>COMPONENT</u>	<u>CAS No.</u>	<u>%</u>	<u>OSHA/PEL</u>	<u>ACGIH/TLV</u>
Aluminum oxide	1344-28-1	80-90	10.0 mg/m ³	10.0 mg/m ³
Cobalt oxide	1304-96-6	1-5	0.05 mg/m ³	0.05 mg/m ³
Molybdenum trioxide	1313-27-5	10-15	10.0 mg/m ³	10.0 mg/m ³

SECTION III PHYSICAL DATA

Appearance and Odor: Blue extrusions. No odor.

Melting Point: Greater than 800°C, greater than 1450°F.

Solubility in Water: Insoluble.

Bulk Density: 32 lbs./cu. ft.

Percent Volatile by Weight at 1000°F: Less than 5%.

SECTION IV FIRE EXPLOSION DATA

Fire and Explosion Hazard

Negligible fire and explosion hazard when exposed to heat or flame by reaction with incompatible substances.



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Flash Point
Nonflammable.

Firefighting Media
Dry chemical, water spray, or foam.
For larger fires, use water spray fog or foam.

Firefighting
Nonflammable solids, liquids or gases: Cool containers that are exposed to flames with water from the side until well after fire is out. For massive fire in enclosed area, use unmanned hose holder or monitor nozzles; if this is impossible, withdraw from area and let fire burn. Withdraw immediately in case of rising sound from venting safety device or any discoloration of the tank due to fire.

SECTION V HEALTH HAZARD DATA

Health hazards may arise from inhalation, ingestion, and/or contact with the skin and/or eyes.

Alumina particles deposited in the eye may cause necrosis of the cornea. Ingestion may cause stomach and intestinal distress. Salts of alumina may cause dermatoses, eczema, conjunctivitis, and irritation of the mucous membranes of the upper respiratory tract. Prolonged inhalation of alumina dust may result in pneumoconiosis. Lung damage (Shaver's Disease) may result from inhalation of finely divided aluminum oxide particles; it is complicated by silica and oxides of iron in the inhaled air.

Excessive inhalation of cobalt may cause irritation of the respiratory tract; asthma-like symptoms with cough, dyspnea, chest tightness and wheezing; lung damage; and pneumoconiosis. Ingestion may produce nausea and vomiting, diarrhea, and sensation of hotness. Chronic ingestion may cause blood abnormalities (polycythemia), increased clotting time, hyperplasia of the bone marrow and thyroid gland, cardiomyopathy, and damage to the pancreas in sensitive individuals. prolonged or repeated contact with the skin, in the absence of proper hygienic practices may result in dryness, irritation and/or an allergic dermatitis. Contact with the eye may cause redness, irritation, and/or conjunctivitis.

Research data on cobalt and cobalt compounds based on animal injection studies indicates that cobalt may be a possible carcinogen.



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Molybdenum trioxide may cause irritation of the eyes and mucous membranes. Prolonged, excessive inhalation may affect the liver, kidneys, and red blood cells; cause hypothyroidism; and/or produce molybdenum-induced gout. Ingestion of excessive amounts may produce signs of copper deficiency.

First Aid (Inhalation)

Remove to fresh air immediately. If breathing has stopped, give artificial respiration. Keep affected person warm and at rest. Get medical attention immediately.

First Aid (Ingestion)

If large amounts have been ingested, give emetics to cause vomiting. Stomach siphon may be applied as well. Milk and fatty acids should be avoided. Get medical attention immediately.

First Aid (Eyes)

Wash eyes immediately and carefully for 30 minutes with running water, lifting upper and lower eyelids occasionally. Get prompt medical attention.

First Aid (Skin)

To avoid repeated or prolonged contact with this chemical, use good hygienic practices. Wash with soap and a large amount of water. Get medical attention if irritation or inflammation develops.

SECTION VI REACTIVITY DATA

Reactivity

Is stable under normal temperatures and pressures in sealed containers. Hazardous polymerization will not occur. Molybdenum trioxide may emit toxic fumes when heated to decomposition.

SECTION VII SPILL OR LEAK PROCEDURES

Notify safety personnel of spills or leaks. Clean-up personnel need protection against inhalation of dusts or fumes. Eye protection is required. Vacuuming and/or wet methods of cleanup are preferred. Place in appropriate containers for disposal, keeping airborne particulates at a minimum.



CA061

MATERIAL SAFETY DATA SHEET
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Disposal

Consult applicable local, state, and federal regulations to select the method of disposal. Recover metal components by reprocessing whenever possible.

SECTION VIII SPECIAL PROTECTION INFORMATION

Respiratory Protection

Provide a NIOSH/MSHA jointly approved respirator in the absence of proper environmental control. Contact your safety equipment supplier for proper mask type.

Ventilation

Provide general and/or local exhaust ventilation to keep exposures below the TLV. Ventilation used must be designed to prevent spots of dust accumulation or recycling of dusts.

Protective Clothing

Wear protective clothing, including long sleeves and gloves, to prevent repeated or prolonged skin contact.

Eye Protection

Chemical splash goggles designed in compliance with OSHA regulations are recommended. Consult your safety equipment supplier.

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