

MSDS Code: 0537240

CU-0226 S 14 X 28

Revision date: 05/10/2002

Date Printed: 05/10/2002

NFPA Classification:**Health:** 2
Flammability: 0
Instability: 0
Special Hazards:**HMIS Classification:****Health:** 2 *
Flammability: 0
Reactivity: 0
Personal Protection: C

* Indicates possible chronic health effects.

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION**Common Name:** Metal Oxides On An Alumina Support**Chemical Name:** Chemical Mixture**Product Use:** Industrial catalyst.**Supplier:** ENGELHARD CORPORATION
CHEMICAL CATALYSTS, PROCESS TECHNOLOGIES
120 PINE STREET
ELYRIA, OH 44035
1-800-321-2747For Chemical Emergency Call CHEMTREC (24 hours):
1-800-424-9300 (US, Canada, Puerto Rico, Virgin Islands)
1-703-527-3887 (Outside Above Area)**2. COMPOSITION / INFORMATION ON INGREDIENTS**

<u>Ingredient</u>	<u>Weight in Product (%)</u>	<u>Notes</u>
Alumina 1344-28-1	80-90	None.
Copper Oxide 1317-38-0	10-14	None.
Manganese Oxide 1313-13-9	< 1	None.
Nickel Oxide 1313-99-1	< 1	None.

Cobalt Oxide 1308-06-1	< 1	None.
---------------------------	-----	-------

Other Information: NOTE: The percentage by weight values reported for this product represent approximate formulation values.

3. HAZARDS IDENTIFICATION

Emergency Overview:

Color: Dark green to black
Form: Spheres
Odor: Odorless
Flash Point, °C: Not Applicable

Most Important Hazards: Contains SUSPECT CANCER HAZARD. Risk of cancer depends on route, duration and level of exposure. Overexposure to dust may cause lung damage. Overexposure may cause liver and kidney damage, and blood disorders. Overexposure may affect the heart and cardiovascular system. Prolonged or repeated exposure may cause neurological disturbances including muscle pain, spasms, hallucinations and uncontrollable behavior. Irritating to eyes, respiratory system and skin. May cause allergic respiratory reactions. May cause an allergic skin reaction. Harmful if swallowed. May cause pain, nausea, vomiting and diarrhea. Coma, shock and death may occur.

Potential Health Effects:

Inhalation: Causes respiratory tract irritation. May cause allergic respiratory reaction. Prolonged or excessive exposure may result in Copper poisoning.

Ingestion: Harmful if swallowed. May cause pain, nausea, vomiting and diarrhea. May cause systemic toxicity. Coma, shock and death may occur.

Skin Contact: Causes skin irritation. May cause a rash and itching of the skin. May cause an allergic skin reaction.

Eye Contact: Causes eye irritation.

Carcinogenicity:

<u>Ingredient</u>	<u>Weight in Product (%)</u>	<u>NTP (Y/N)</u>	<u>IARC (See Notes)</u>	<u>OSHA (Y/N)</u>	<u>ACGIH (See Notes)</u>
Alumina 1344-28-1	80-90	N	N	N	A4
Copper Oxide 1317-38-0	10-14	N	N	N	N
Manganese Oxide 1313-13-9	< 1	N	N	N	N
Nickel Oxide 1313-99-1	< 1	Y	Y1	N	A1

Engelhard
Material Safety Data Sheet

MSDS code: 0537240
Revision date: 05/10/2002

Cobalt Oxide 1308-06-1	< 1	N	Y2B	N	A3
---------------------------	-----	---	-----	---	----

Notes:
IARC: Y1=Carcinogenic to humans; Y2A=Probably carcinogenic to humans; Y2B=Possibly carcinogenic to humans; N3=Not classifiable as to its carcinogenicity; N=Not studied or probably not carcinogenic.
ACGIH: A1=Confirmed human carcinogen; A2=Suspected human carcinogen; A3=Confirmed animal carcinogen; A4=Not classifiable as a human carcinogen; A5=Not suspected as a human carcinogen; N=Not studied.

Chronic Health Hazards: May cause liver and kidney damage. May affect the blood and blood system. May affect the heart and cardiovascular system. Prolonged or repeated exposure may cause lung damage. Prolonged or repeated exposure may cause MANGANESE poisoning. It is a Parkinsonian-like syndrome characterized by anorexia, hypersomnia, loss of strength, spasms or pain in the muscles, possibly followed by uncontrollable behavior, hallucinations and confusion. Progression of the disease results in varied neurological manifestations such as disturbances of speech, vision, hearing, gait and balance; and tremors (Parkinsonian). Refer to Carcinogenicity and Potential Health Effects.

Aggravated Medical Conditions: Pulmonary disorders. Dermal ailments. Allergies. Kidney disorders. Liver disorders.
Individuals with Wilson's Disease are at increased risk of Copper poisoning.

4. FIRST AID MEASURES

Inhalation: Move person to fresh air. Aid in breathing, if necessary, and get immediate medical attention.

Ingestion: Contact the local poison control center or a physician immediately. If person is conscious and able to swallow, give large amounts of water to dilute. If vomiting occurs, keep head lower than hips to prevent aspiration. Get medical attention immediately.

Skin Contact: Flush skin with large amounts of water. If irritation persists, get medical attention.

Eye Contact: In case of contact, or suspected contact, immediately flush eyes with plenty of water for at least 15 minutes and get medical attention immediately after flushing.

5. FIRE FIGHTING MEASURES

Flash Point, °C: Not Applicable
Autoignition Temperature, °C: Not Determined
Lower Explosive Limit, %: Not Applicable
Upper Explosive Limit, %: Not Applicable

Extinguishing Media: Water. Carbon dioxide. Foam.

Fire Fighting Procedures: Positive pressure, self-contained breathing apparatus. Wear full protective clothing.

Unusual Fire and Explosion Hazards: Not a fire or explosion hazard. Toxic vapors are emitted in a fire condition.

6. ACCIDENTAL RELEASE MEASURES

Spill Procedures: Contain spillage. Scoop up or vacuum into a container for reclamation or disposal. Avoid dusting.

7. HANDLING AND STORAGE

Keep container closed.
Store in a cool, dry location away from incompatible materials.
Wash thoroughly after handling.
Avoid generating or breathing dust.
Avoid contact with eyes, skin and clothing.
Use only with adequate ventilation.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

<u>Ingredient</u>	<u>Weight in Product (%)</u>	<u>OSHA PEL:</u>	<u>ACGIH TLV:</u>
Alumina 1344-28-1	80-90	15 mg/m ³ (Total dust) 5 mg/m ³ (Respirable dust)	10 mg/m ³
Copper Oxide 1317-38-0	10-14	1 mg/m ³ (as Cu)	1 mg/m ³ (as Cu)
Manganese Oxide 1313-13-9	< 1	5 mg/m ³ (as Mn) Ceiling	0.2 mg/m ³ (as Mn)
Nickel Oxide 1313-99-1	< 1	1 mg/m ³ (as Ni)	0.2 mg/m ³ (as Ni, inhalable fraction)
Cobalt Oxide 1308-06-1	< 1	None Established	0.02 mg/m ³ (as Co)

Unless otherwise noted, all values are reported as 8-hour Time-Weighted Averages (TWAs) and total dust (particulates only). All ACGIH TLVs refer to the 2000 standards. Unless otherwise noted, all OSHA PELs refer to 29 CFR Part 1910 Air Contaminants: Final Rule, January 19, 1989.

Personal Protective Equipment: Wear safety glasses or goggles to protect against exposure. Rubber or neoprene gloves. Wear clean, body-covering clothing.

Respiratory Protection: Use approved respiratory protection if exposure limits are exceeded, or overexposure is likely. If respiratory protection is used, follow all requirements for respiratory programs set forth in OSHA regulations (29 CFR 1910.134).

Ventilation: General ventilation. Local exhaust ventilation is recommended to control exposures to within applicable limits.

9. PHYSICAL AND CHEMICAL PROPERTIES

Form: Spheres
Color: Dark green to black
Odor: Odorless

Specific Gravity: **Min:** 0.8 **Max:** 0.85g/cc
Solubility (in water): Insoluble

10. STABILITY AND REACTIVITY

Stability Data: Stable

Conditions/Hazards to Avoid: None anticipated

Incompatibility (Materials to Avoid): Strong oxidizing agents.

Hazardous Decomposition Products: Metal oxide fumes. Oxides of nitrogen.

Polymerization: None anticipated.

Polymerization - Avoid: None anticipated.

11. TOXICOLOGICAL INFORMATION

Information on Product:

No data available.

Information on Components:

<u>Ingredient</u>	<u>Weight in Product (%)</u>	<u>Acute Toxicity - Oral</u>	<u>Acute Toxicity - Inhalation</u>	<u>Acute Toxicity - Dermal</u>	<u>Acute Toxicity - Other</u>
Alumina 1344-28-1	80-90	Not Available	Not Available	Not Available	Not Available
Copper Oxide 1317-38-0	10-14	Not Available	Not Available	Not Available	Not Available
Manganese Oxide 1313-13-9	< 1	Not Available	Not Available	Not Available	422 mg/kg subcutaneous (mouse)
Nickel Oxide 1313-99-1	< 1	Not Available	Not Available	Not Available	50 mg/kg subcutaneous (mouse)

Engelhard Material Safety Data Sheet	MSDS code: 0537240 Revision date: 05/10/2002
--	---

Cobalt Oxide 1308-06-1	< 1	Not Available	Not Available	Not Available	Not Available
---------------------------	-----	---------------	---------------	---------------	---------------

12. ECOLOGICAL INFORMATION

Information on Product:

Environmental Fate: No data available.

Ecotoxicological Information: No data available.

13. DISPOSAL CONSIDERATIONS

US EPA Waste Number: Not Regulated

Disposal of Waste Method: Local disposal laws and regulations will determine the proper waste disposal/recycling/reclamation procedure. Disposal requirements are dependent on the hazard classification and will vary by location and the type of disposal selected. All waste materials should be reviewed to determine the applicable hazards (testing may be necessary).

14. TRANSPORT INFORMATION

International Transport Regulations:

UN/PIN Number: Not Regulated

US Transportation Regulations:

DOT Classification: Not Regulated

Canadian Transportation of Dangerous Goods (TDG):

TDG Classification: Not Regulated

15. REGULATORY INFORMATION

International Inventories:

United States: This product or its ingredients are listed on or compliant with the TSCA Inventory.

Canada: This product or its ingredients are listed on or compliant with the DSL.

Europe: This product or its ingredients are listed on or compliant with EINECS.

Japan: This product or its ingredients are listed on or compliant with MITI.

Australia: This product or its ingredients are listed on or compliant with AICS.

Korea: This product or its ingredients are listed on or compliant with the ECL.

US Federal Regulations:

<u>Ingredient</u>	<u>Weight in Product (%)</u>	<u>Subject to SARA 313 Reporting</u>
Alumina 1344-28-1	80-90	No

Engelhard Material Safety Data Sheet	MSDS code: Revision date:	0537240 05/10/2002
--	--	-----------------------

Copper Oxide 1317-38-0	10-14	Yes
Manganese Oxide 1313-13-9	< 1	Yes
Nickel Oxide 1313-99-1	< 1	Yes
Cobalt Oxide 1308-06-1	< 1	Yes

SARA 311/ 312 Hazard Categories:
Acute Health Hazard Chronic Health Hazard

CAA 602 Ozone Depleting Substances (ODS):
This product neither contains nor is manufactured with an ozone depleting substance subject to the labeling requirements of the Clean Air Act Amendments 1990 and 40 CFR Part 82.

US State Regulations:
California Proposition 65 - Carcinogen:
WARNING: This product contains chemicals known to the State of California to cause cancer.

Canadian Regulations:
WHMIS Classification:
Class D Division 2 Subdivision A
Class D Division 2 Subdivision B
This product has been classified in accordance with the hazard criteria of the *Controlled Products Regulations* and the MSDS contains all the information required by the *Controlled Products Regulations* .

16. OTHER INFORMATION

Revision number: 10

**Section(s) Revised
in this Version:** Product Name

Prepared By: Engelhard Corporate Environmental Health & Safety Group

The information in this Material Safety Data Sheet should be provided to all who will use, handle, store, transport, or otherwise be exposed to this product. This information has been prepared for the guidance of plant engineering, operations, management and for persons working with or handling this product. The information presented in the MSDS is premised upon proper handling and anticipated uses, and is for the material without chemical additions/alterations. We believe this information to be reliable and up-to-date as of the date of publication, but make no warranty that it is. Additionally, if this Material Safety Data Sheet is more than three years old, please contact the supplier at the phone number listed in Section 1 to make certain that this sheet is current. Copyright Engelhard Corporation. License granted to make unlimited copies for internal use only. End of MSDS.....