

Material Safety Data Sheet

Product Name: ALNOX (STANDARD) ELECTRICAL JOINT COMPOUND

ID: 323

*** Section 1 - Chemical Product and Company Identification ***

Chemical Formula: Mixture

Product Use: Inhibit formation of oxides and lower resistance of electrical interfaces

Other Designations: Patent No. 3,157,735

Manufacturer/Supplier

AFL Telecommunications
170 Ridgeview Circle
Duncan, SC 29334

Phone: 1-864-433-0333

Emergency Information:

USA: 1-800-866-3941 Ext. 5577 or 1-864-433-5577

*** Section 2 - Composition / Information on Ingredients ***

CAS #	Component	Percent
Not Available	Petroleum grease	62.5
	Aluminum-Nickel grit (50:50)	37.5
7429-90-5	Aluminum	18-19.5
7440-02-0	Nickel	18-19.5

*** Section 3 - Hazards Identification ***

Emergency Overview

Grease with grit. Gray. Slight odor. Material will burn if ignited. Can cause irritation of eyes. Prolonged or repeated contact can cause irritation of skin. If heated, vapors can cause irritation of respiratory tract.

Potential Health Effects

Eyes

Can cause irritation.

Skin

Prolonged or repeated contact can cause irritation and dermatitis.

Ingestion

Can cause irritation.

Inhalation

If heated, vapors can cause irritation.

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Health Effects of Ingredients

Nickel dust and fumes Can cause irritation of eyes, skin and respiratory tract. Eye contact: Can cause inflammation of the eyes and eyelids (conjunctivitis). Skin contact: Can cause sensitization and allergic contact dermatitis. Chronic overexposures: Can cause perforation of the nasal septum, inflammation of the nasal passages (sinusitis), respiratory sensitization, asthma and scarring of the lungs (pulmonary fibrosis). **Nickel metal** IARC/NTP: Listed as "reasonably anticipated to be a human carcinogen" by the NTP. Listed as possibly carcinogenic to humans by IARC (Group 2B)*.

Aluminum dust, fines and fumes Low health risk by inhalation. Generally considered to be biologically inert (milling, cutting, grinding).

*IARC Classification Definitions

Group 2B: The agent is possibly carcinogenic to humans. Generally includes agents for which there is limited evidence in the absence of sufficient evidence in experimental animals.

Medical Conditions Aggravated By Exposure to the Product

Asthma, chronic lung disease, and skin rashes.

* * * Section 4 - First Aid Measures * * *

First Aid: Eyes

Flush eyes with plenty of water or saline for at least 15 minutes. Consult a physician.

First Aid: Skin

Wash skin with soap and water for at least 15 minutes. Consult a physician if irritation persists.

First Aid: Ingestion

If swallowed, dilute by drinking large amounts of water. *Never give anything by mouth to a convulsing or unconscious person.* Do **not** induce vomiting. Consult a physician.

First Aid: Inhalation

Remove to fresh air. If unconscious or severely injured, check for clear airway, breathing and presence of pulse. Perform CPR if there is no pulse or respiration. Consult a physician.

* * * Section 5 - Fire Fighting Measures * * *

Flash Point: 509°F (265°C) Grease

Fire/Explosion

Not an explosion hazard. While not considered "flammable" or "combustible" as defined by OSHA or DOT, the material will burn if ignited.

Extinguishing Media

Use dry chemical, water spray (fog), foam or carbon dioxide extinguishing agents. Use water spray to minimize vapors and cool containers exposed to heat or flame. Move undamaged containers away from heat or flame, if possible.

Fire Fighting Equipment/Instructions

Fire fighters should wear NIOSH approved, positive pressure, self-contained breathing apparatus and full protective clothing when appropriate.

* * * Section 6 - Accidental Release Measures * * *

Small/Large Spill

Recover spills for reuse. Absorb remainder with absorbent material. Spills may be slippery and potentially hazardous to personnel or mobile equipment due to reduced traction.

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*** Section 7 - Handling and Storage ***

Handling/Storage

Avoid eye and skin contact. Avoid generating mists or vapors. Spills may be slippery and potentially hazardous to personnel or mobile equipment due to reduced traction.

Keep containers closed when not in use. Store away from heat, sparks, flames, oxidizers, and other incompatible substances. Empty containers may contain residual product. Do not cut or weld on containers.

*** Section 8 - Exposure Controls / Personal Protection ***

Engineering Controls

Use with adequate ventilation to meet the limits listed in Section 8, Exposure Guidelines.

Personal Protective Equipment

Respiratory Protection

Use NIOSH-approved respiratory protection as specified by an Industrial Hygienist or other qualified professional if concentrations exceed the limits listed in Section 8, Exposure Guidelines. Suggested respiratory protection: P95

Eye Protection

Wear safety glasses/goggles to avoid eye contact.

Skin Protection

Wear impervious gloves to avoid direct skin contact.

General

Minimize breathing **oil vapors and mist**. Remove grease contaminated clothing; launder or dry-clean before reuse. Remove grease contaminated shoes and thoroughly clean and dry before reuse. Cleanse skin thoroughly after contact, before breaks and meals, and at the end of the work period. Grease is readily removed from skin with waterless hand cleaners followed by a thorough washing with soap and water.

Exposure Guidelines

A: General Product Information

No information available for product.

B: Component Exposure Limits

Aluminum (7429-90-5)

ACGIH 10 mg/m³ TWA (metal dust)

OSHA 15 mg/m³ TWA (total dust); 5 mg/m³ TWA (respirable fraction)

Nickel (7440-02-0)

ACGIH 1.5 mg/m³ TWA (inhalable fraction)

OSHA 1 mg/m³ TWA

*** Section 9 - Physical & Chemical Properties ***

Physical State: Grease with grit

Boiling Point: Not determined

Vapor Pressure: < 0.01 mm Hg @ 20°C

Solubility in Water: Negligible

Density: See Specific Gravity

Odor: Slight

Octanol-Water Coefficient: Not determined

Appearance: Gray

Melting Point: Not determined

Vapor Density: Not determined

Specific Gravity: 1.29

pH Level: Not applicable

Odor Threshold: Not determined

*** Section 10 - Chemical Stability & Reactivity Information ***

Stability

Stable under normal conditions of use, storage, and transportation.

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Conditions to Avoid

Strong oxidizers (chlorine, perchlorates, permanganates, peroxides, nitric acid, chromates, etc.).

Hazardous Decomposition

Oxides of nickel, aluminum oxide, carbon monoxide, carbon dioxide, aldehydes and partially oxidized hydrocarbons.

Hazardous Polymerization

Will not occur.

* * * Section 11 - Toxicological Information * * *

Health Effects of Ingredients

A: General Product Information

No information available for product.

B: Component Analysis - LD50/LC50

No LD50/LC50's are available for this product's components.

Carcinogenicity

A: General Product Information

No information available for product.

B: Component Carcinogenicity

Nickel (7440-02-0)

ACGIH A5 - Not Suspected as a Human Carcinogen

IARC Monograph 49, 1990

NTP Suspect Carcinogen; (under Nickel and Certain Nickel Compounds)

* * * Section 12 - Ecological Information * * *

Ecotoxicity

A: General Product Information

No information available for product.

B: Component Analysis - Ecotoxicity - Aquatic Toxicity

Nickel (7440-02-0)

96 Hr LC50 rainbow trout (adults): 31.7 mg/L

96 Hr LC50 fathead minnow: 3.1 mg/L

72 Hr EC50 freshwater algae (4 species): 0.1 mg/L

96 Hr LC50 water flea: 510 ug/L

Environmental Fate

No information available for product.

* * * Section 13 - Disposal Considerations * * *

Disposal Instructions

Reuse or recycle material whenever possible. Material may be disposed of at a chemically secure landfill.

US EPA Waste Number & Descriptions

A: General Product Information

Not federally regulated in the U.S. if disposed of "as is." Otherwise, characterize in accordance with applicable regulations (40 CFR 261 or state equivalent in the U.S.)

B: Component Waste Numbers

RCRA waste codes other than described under Section A may apply depending on use of product. Refer to 40 CFR 261 or state equivalent in the U.S.

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*** Section 14 - Transportation Information ***

Special Transportation

	PSN #1	PSN #2	PSN #3	PSN #4
Notes:	(1)			
Proper Shipping Name:	Not regulated			
Hazard Class:	-			
UN NA Number:	-			
Packing Group:	-			
RQ:	-			
Other - Tech Name:	-			
Other - Marine Pollutant:	-			

Notes:

(1) When "Not regulated," enter the proper freight classification, "MSDS Number," and "Product Name" on the shipping paperwork.

Canadian TDG Hazard Class & PIN:	Not regulated
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*** Section 15 - Regulatory Information ***

US Federal Regulations

A: General Product Information

No information available for product.

B: Component Analysis

This material contains one or more of the following chemicals required to be identified under SARA Section 302 (40 CFR 355 Appendix A), SARA Section 313 (40 CFR 372.65) and/or CERCLA (40 CFR 302.4).

Aluminum (7429-90-5)

SARA 313: 1.0 percent de minimis concentration (fume or dust only)

Nickel (7440-02-0)

SARA 313: 0.1 percent de minimis concentration

CERCLA: 100 lb final RQ (no reporting of releases of this hazardous substance is required if the diameter of the pieces of the solid metal released is equal to or exceeds 0.004 inches);
45.4 kg final RQ (no reporting of releases of this hazardous substance is required if the diameter of the pieces of the solid metal released is equal to or exceeds 0.004 inches)

SARA 311/312 Physical and Health Hazard Categories:

Immediate (acute) Health Hazard: Yes

Delayed (chronic) Health Hazard: Yes

Fire Hazard: No

Sudden Release of Pressure: No

Reactive: No

State Regulations

A: General Product Information

PENNSYLVANIA "Special Hazardous Substance": Nickel

Chemical(s) known to the State of California to cause cancer: Nickel and certain Nickel compounds

B: Component Analysis - State

The following components appear on one or more of the following state hazardous substances lists:

Component	CAS #	CA	FL	MA	MN	NJ	PA
Aluminum	7429-90-5	Yes	Yes	Yes	Yes	Yes	Yes
Nickel	7440-02-0	Yes	Yes	Yes	Yes	Yes	Yes

The following statement(s) are provided under the California Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65):

WARNING! This product contains a chemical known to the state of California to cause cancer.

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Other Regulations

A: General Product Information

Material meets the criteria for inclusion in WHMIS D2A.

In reference to Title VI of the Clean Air Act of 1990, this material does not contain nor was it manufactured using ozone-depleting chemicals.

B: Component Analysis - WHMIS IDL

The following components are identified under the Canadian Hazardous Products Act Ingredient Disclosure List:

Component	CAS #	Minimum Concentration
Aluminum	7429-90-5	1%; English Item 47; French Item 197
Nickel	7440-02-0	0.1%; English Item 1126; French Item 1193

C: Component Analysis - Inventory

Component	CAS #	TSCA	DSL	EINECS	AUST.	MITI
Aluminum	7429-90-5	Yes	Yes	Yes	Yes	No
Nickel	7440-02-0	Yes	Yes	Yes	Yes	No

Note: Pure metals are not specifically listed by CAS or MITI number. The class of compounds for each of these metals is listed on the MITI inventory.

* * * Section 16 - Other Information * * *

MSDS History

Original: October 15, 1982

Supersedes: December 9, 1999

Revised: December 18, 2002

MSDS Status

Changes to Section 3 and 5

Prepared By

Hazardous Materials Control Committee

Preparer: Jon N. Peace, 412-553-2293

MSDS System Number

146210

Other Information

* Guide to Occupational Exposure Values-2002, Compiled by the American Conference of Governmental Industrial Hygienists (ACGIH).

* Documentation of the Threshold Limit Values and Biological Exposure Indices, Sixth Edition, 1991, Compiled by the American Conference of Governmental Industrial Hygienists, Inc. (ACGIH).

* NIOSH Pocket Guide to Chemical Hazards, U.S. Department of Health and Human Services, June 1994.

* Dangerous Properties of Industrial Materials, Sax, N. Irving, Van Nostrand Reinhold Co., Inc., 1984.

* Patty's Industrial Hygiene and Toxicology: Volume II: Toxicology, 4th ed., 1994, Patty, F. A.; edited by Clayton, G. D. and Clayton, F. E.: New York: John Wiley & Sons, Inc.

* TOMES CPS(TM), MICROMEDEX, Inc., 2002

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Key-Legend:

ACGIH	American Conference of Governmental Industrial Hygienists
AICS	Australian Inventory of Chemical Substances
CAS	Chemical Abstract Service
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CFR	Code of Federal Regulations
CPR	Cardio-pulmonary Resuscitation
DOT	Department of Transportation
DSL	Domestic Substances List (Canada)
EINECS	European Inventory of Existing Commercial Chemical Substances
EPA	Environmental Protection Act
IARC	International Agency for Research on Cancer
LC ₅₀	Lethal concentration (50 percent kill)
LC _{Lo}	Lowest published lethal concentration
LD ₅₀	Lethal dose (50 percent kill)
LD _{Lo}	Lowest published lethal dose
LFL	Lower Flammable Limit
MITI	Ministry of International Trade & Industry
NFPA	National Fire Protection Association
NIOSH	National Institute for Occupational Safety and Health
NTP	National Toxicology Program
OEL	Occupational Exposure Limit
OSHA	Occupational Safety and Health Administration
PEL	Permissible Exposure Limit
PIN	Product Identification Number
PSN	Proper Shipping Name
RCRA	Resource Conservation and Recovery Act
SARA	Superfund Amendments and Reauthorization Act
STEL	Short Term Exposure Limit
TCLP	Toxic Chemicals Leachate Program
TDG	Transportation of Dangerous Goods
TLV	Threshold Limit Value
TSCA	Toxic Substance Control Act
TWA	Time Weighted Average
UFL	Upper Flammable Limit
WHMIS	Workplace Hazardous Materials Information System
atm	atmosphere
cm	centimeter
g, gm	gram
in	inch
kg	kilogram
lb	pound
m	meter
mg	milligram
ml, ML	milliliter
mm	millimeter
mppcf	million particles per cubic foot
n.o.s.	not otherwise specified
ppb	parts per billion
ppm	parts per million
psia	pounds per square inch absolute
u	micron
ug	microgram

INFORMATION HEREIN IS GIVEN IN GOOD FAITH AS AUTHORITATIVE AND VALID; HOWEVER, NO WARRANTY, EXPRESS OR IMPLIED, CAN BE MADE.

This is the end of MSDS # 323