FLEXSYS

Material Safety Data Sheet

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1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product Name: **PERKACIT® NDBC**

MSDS NO. **FLXP0064**

Chemical Name: Nickel Dibutyldithiocarbamate
Synonyms: Bis(dibutyldithiocarbamato)nickel; Nickel, bis(dibutylcarbamodithio-,S,S´)-; NDBC
Use: Accelerator.
Manufactured By: Flexsys America L.P. 260 Springside Drive Akron OH 44333-2433 USA

Emergency Telephone:
CHEMTREC: 1-800-424-9300 [TOLL FREE - USA and Territories]
703-527-3887 [ELSEWHERE - Collect Calls Accepted]
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2. HAZARDS IDENTIFICATION

Emergency Overview: WARNING: POSSIBLE CANCER HAZARD [Nickel Compounds] May irritate the skin. May cause allergic skin reaction. May irritate the lungs. May cause alcohol intolerance. Combustible dust - explosion potential.

Eye Contact: Causes mild eye irritation. Mild Eye Irritation: signs/symptoms can include redness, swelling, pain and tearing.

Skin Contact: May cause an allergic skin reaction. May be absorbed through the skin and product effects similiar to those caused by inhalation and/or ingestion. May cause skin defatting with prolonged exposure.

Inhalation: Exposure to dust particles generated from this material may cause irritation of the respiratory tract. Inhalation may cause alcohol intolerance

Ingestion: May cause alcohol intolerance (Antabuse Effect). May cause headache, dizziness, nausea, vomiting, gastrointestinal irritation.

3. COMPOSITION / INFORMATION ON INGREDIENTS

Component	CAS-No	Weight %
Nickel Dibutyldithiocarbamate	13927-77-0	> 97
White Mineral Oil	8042-47-5	1 - 2

4. FIRST AID MEASURES

In Eyes: In case of contact, immediately flush eyes with plenty of water for at least 15 minutes and get medical attention if irritation persists.

On Skin: Remove contaminated clothing. Wash skin with water, using soap if available. Launder clothing before reuse. If irritation persists or signs of toxicity occur, seek medical attention.

4. FIRST AID MEASURES

Inhaled: Remove person to fresh air. If not breathing, give artificial respiration. If breathing is difficult, get immediate medical attention.

Swallowed: If swallowed, call a physician immediately. Only induce vomiting at the instruction of a physician. Never give anything by mouth to an unconscious person.

Notes To Physician: Treat symptomatically. Exposure by ingestion, inhalation or skin absorbtion may cause alcohol intolerance (Antabuse Effect).

5. FIRE FIGHTING MEASURES

Flash Point (°F/C): 500°F / 260°C
Flash Point Method: Not Determined
Autoignition Temp. (°F/C): Not Determined
Lower Explosion Limit (LEL): Not Determined.
Upper Explosion Limit (UEL): Not Determined.

Extinguishing Media: Use water fog, carbon dioxide, foam or dry chemical.

Special Exposure Hazards: Fight fire from a safe distance and from a protected location. Use water spray to cool fire exposed surfaces. Decomposition in fire may produce toxic gases. Do not allow runoff to enter waterways.

Special Protective Equipment: Full protective clothing and approved self-contained breathing apparatus required for fire fighting personnel.

Unusual Fire/Explosion Hazards: Toxic emissions may result if product is involved in a fire. Fire can produce toxic hydrogen cyanide, sulfur dioxide, oxides of nitrogen and oxides of nickel. Minimum Ignition Energy (MIE) = <3 mJ.

6. ACCIDENTAL RELEASE MEASURES

Spill Procedures: Isolate the area. Turn off/remove all potential sources of ignition. Wear gloves.

Procedure for Cleaning/Absorption: Sweep, scoop or vacuum solids. Use vacuum equipment specifically designed for combustible dusts. Do NOT spread spilled product with water.

CERCLA Reportable Quantity (RQ): Not Applicable

7. HANDLING AND STORAGE

Handling: Avoid contact with eyes, skin and clothing. Avoid generating or breathing dust. Wash thoroughly with soap and water after handling. Wash hands before eating, drinking, chewing gum, using tobacco or using the toilet. Reclose containers of unused product. Keep containers tightly closed when not in use. Do not reuse this container.

Storage: Store closed containers in a cool, dry, well-ventilated area. Store away from strong oxidizing materials. Avoid exposure to direct sunlight. Material compaction may occur at storage temperatures > 35°C and double stacking. Do not double stack.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Eye Protection: Wear safety glasses or goggles to protect against exposure.

Skin Protection: Normal work coveralls. Launder contaminated clothing before reuse.

Gloves: Use gloves as a standard industrial handling procedure. All cleanable impervious glove types are acceptable. Consult glove manufacturer for best type of glove for specific tasks.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Respiratory Protection: Use in a well ventilated area. Use approved NIOSH respiratory protection if TLV exceeded or if overexposure is likely. Appropriate respiratory protection shall be worn when applied engineering controls are not adequate to protect against inhalation exposure.

Ventilation: General; local exhaust ventilation as necessary to control any air contaminants to within their exposure limits during the use of this product.

Airborne Exposure Limits: Air exposure limits for Nickel Compounds: OSHA PEL/8Hr TWA = 1mg/m^3 ACGIH TLV/8Hr TWA = 1 mg/m^3 NIOSH REL: 15 mg/m^3 White Mineral Oil OSHA PEL/8-Hr TWA = 5mg/m^3 ACGIH TLV/8-Hr TWA = 5mg/m^3.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	Green Powder
Odor:	CHARACTERISTIC
pH:	Not Applicable.
Specific Gravity:	1.26
Density:	1300 kg/m^3
Bulk Density:	300 - 340 kg/m^3 @ 20°C
Melting Point (°F/C):	185°F / 85°C
Boiling Point (°F/C):	Not Determined
Vapor Pressure:	Negligible @ 20°C
Vapor Density (Air=1):	Not Determined
% Volatile by Volume:	<0.5% by weight
Solubility in Water:	Negligible
Other Solubility:	Soluble in: Benzene Carbon Disulfide Organic liquids, including fats and oils Acetone
Viscosity:	Not Applicable.
Other Data:	Nickel Content: 12.0 - 12.8%
Molecular Weight:	467
Molecular Formula:	C18-H36-N2-S4-Ni

10. STABILITY AND REACTIVITY

Chemical Stability: Stable when stored at room temperature in closed, original container. Stable under normal conditions of handling, use and transportation.

Hazardous Polymerization: WILL NOT OCCUR

Conditions to Avoid: Avoid contact with heat, sparks, open flame, and static discharge. Strong oxidizing agents. Contact with acids. Storage temperatures >35°C and double stacking will cause material compaction.

Materials to Avoid: Contact with oxidizing agents. Contact with acids.

Hazardous Decomposition Products: Carbon monoxide. Oxides of nitrogen. Oxides of sulfur. Oxides of nickel.

Additional Guidelines: None.

11. TOXICOLOGICAL INFORMATION

Acute Oral LD50 (mg/kg):	>5000 mg/kg (Rat)
Acute Dermal LD50 (mg/kg):	>2000 mg/kg (Rabbit)
Acute Inhalation LC50 (mg/l):	Not Determined. No mortalities in rats exposed to concentrations of 0.416 mg/L.

Target Organs / Principle Routes of Exposure: Dermal - skin. Inhalation.

Ingestion: May cause alcohol intolerance (Antabuse Effect). May cause headache, dizziness, nausea, vomiting, gastrointestinal irritation.

11. TOXICOLOGICAL INFORMATION

Skin Contact:	May cause an allergic skin reaction. May be absorbed through the skin and product effects similiar to those caused by inhalation and/or ingestion. May cause skin defatting with prolonged exposure.
Inhalation:	Exposure to dust particles generated from this material may cause irritation of the respiratory tract. Inhalation may cause alcohol intolerance
Eye Contact:	Causes mild eye irritation. Mild Eye Irritation: signs/symptoms can include redness, swelling, pain and tearing.
Aggravated Conditions:	Alcohol consumption problems. Allergies. Dermal ailments.
Carcinogenicity Comment:	Carcinogenicity: Nickel and certain nickel compounds: There is sufficient evidence of the carcinogenicity of nickel and nickel compounds (NTP-1985). (IARC 1976, vol. 11) states there is sufficient evidence for the carcinogenity of certain nickel compounds. Nickel subsulfide is carcinogenic in rats by inhalation, producing lung cancer. Nickel compounds (nickel powder, subsulfide, oxide, carbonate, and nickelocene) produced local sarcomas in mice, rats and hamsters when given intramuscularly. Inhalation of nickel carbonyl produced a low incidence of of lung tumors in rats. NOTE: May react with nitrosating agents during rubber vulcanization to form nitrosamines. Some nitrosamines are suspect human carcinogens.
Other Information:	THE CARCINOGENIC POTENTIAL OF THIS PRODUCT, NICKEL DIBUTYLDITHIOCARBAMATE, HAS NOT BEEN DETERMINED. "Nickel Compounds", as a generic category, and some specific members of that category, are recognized as possible human carcinogens.
Primary Irritation Effect:	Slightly irritating Possible sensitizer.
Carcinogenicity:	Negative in standard tests using bacteria and/or yeast cells. NOTE: ACGIH Status: Confirmed Carcinogen. NTP Status: Anticipated Human Carcinogen. Status applies to the generic category of "Nickel Compounds".
Genotoxicity:	Not Determined.
Reproductive/Developmental Toxicity:	Not Determined.

12. ECOLOGICAL INFORMATION

Acute Fish Toxicity:	Not determined. Similar compounds show at least moderate toxicity to freshwater fish. An NOEC of >10 mg/l has been measured for two species of fish.
Acute Crustaceans Toxicity:	Not determined. Similar compounds show at least moderate toxicity to daphnids.
Acute Algae Toxicity:	Not determined. Similar compounds are at least moderately toxic to algae.
Octanol/Water Coefficient:	Log P = 5.44 [Calculated]
Chemical Fate Information:	Not determined. Similar compounds show low to moderate biodegradability. Similar compounds show rapid hydrolysis under acidic conditions.
Other Information:	Bioconcentration Factor [BCF] = 307 [calculated]. Similar compounds show a low potential for bioaccumulation and environmental persistance.

13. DISPOSAL CONSIDERATIONS

Disposal of Waste Method:	This product, if disposed as received, is a non-hazardous waste. Bury in a licensed landfill or burn in an approved incinerator according to federal, state, and local regulations. Federal, state and 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.
Contaminated Packaging:	Dispose of container according to national or local regulations. Do NOT reuse container.

14. TRANSPORT INFORMATION

DOT:	Not Regulated
DOT Reportable Quantity (lbs):	None
ICAO/IATA:	See DOT

14. TRANSPORT INFORMATION

IMDG:	See DOT
Marine Pollutant:	No
TDG (Canada):	See DOT
Remarks:	None

15. REGULATORY INFORMATION

Worldwide Inventory Status

USA (TSCA):	Listed
Canada (DSL):	Listed
Canada (NDSL):	Not Applicable. Listed on the DSL.
European Union (EINECS/ELINCS):	Listed
Japan (ENCS):	Listed
Korea (ECL):	Listed
Australia (AICS):	Listed
New Zealand (NZ):	Not Listed
Phillipines (PICCS):	Listed
China (CLECS):	Listed.

US Regulatory Rules

SARA Section 302:	Not Applicable / None
SARA 311/312 Hazard Catagories:	Immediate Delayed
SARA 313 Chemical:	Listed under the category "Nickel Compounds"
RCRA Status:	Not a RCRA waste.

Other Regulations:

California Proposition 65:	THIS PRODUCT CONTAINS CALIFORNIA PROPOSITION 65 CHEMICALS WHICH ARE LISTED BELOW: NICKEL AND CERTAIN NICKEL COMPOUNDS
New Jersey Right-to-Know List:	This product contains one or more chemicals that are listed on the New Jersey Right-to-Know List. Category: Nickel Compounds
Pennsylvania Right to Know List:	Listed under the category "Nickel Compounds"
Florida Right to Know:	Listed under the category "Nickel Compounds".
Minnesota Right to Know:	Listed under the category "Nickel Compounds"
Massachusetts Right to Know Law:	Listed under the category "Nickel Compounds"
FDA Status 21 CFR:	Not Regulated For Use in food contact applications under 21 CFR.

Canadian Regulations

WHMIS Hazard Class:	D2A VERY TOXIC MATERIALS Contains Nickel Compounds at a level of 1% or greater.
NPRI:	Listed under the category "Nickel Compounds" NPRI Part 1, ID# 171.

16. OTHER INFORMATION

Hazard Rating Systems:

HMIS Classification:	HEALTH 2, FLAMMABILITY 1, REACTIVITY 0
NFPA Rating:	HEALTH 2, FLAMMABILITY 1, REACTIVITY 0

16. OTHER INFORMATION

The following has been revised since the last issue of this MSDS: New MSDS format.

Additional Information: WHMIS Ingredient Disclosure List (Canada): WHMIS Concentration threshold = 0.1%. "Nickel Compounds" appear on the Hazardous Chemicals lists of the following US states: Illinois, California, Indiana, Kentucky, Louisianna, Michigan, North Carolina, Rhode Island. The following Canadian provinces have established workplace Occupational Exposure Limits for "Nickel Compounds": Alberta, British Columbia, Ontario, Quebec.

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*****END OF MSDS*****