

SAFETY DATA SHEET

NAT-1051 SDS

Revised Date: March 27, 2017

1 IDENTIFICATION

Chemical name: Lithium Nickel Cobalt Aluminum Oxide
Product name: NAT-1051

Company name: TODA AMERICA, INC.
Company address: 4750 WEST DICKMAN ROAD
BATTLE CREEK, MI 49037

Phone number: +1-269-962-0353
FAX number: +1-269-963-0568
Emergency contact: CHEMTREC
Emergency Phone number: +1-800-424-9300 (US & CANADA)
+1-703-527-3887 (OTHER)

2 HAZARD IDENTIFICATION

GHS classification:

Fatal if inhaled (H330):

Hazard category 2

Causes severe skin burns and eye damage (H314):

Hazard category 1C

Hazard symbols:



Signal word:

Danger

Hazard statements:

Toxic if inhaled (dust)

Causes severe skin burns and eye damage

Precautionary statements:

Prevention:

P260: Do not breathe dust or mists.

P264: Wash thoroughly after handling.

P271: Use only outdoors or in a well-ventilated area.

P280: Wear protective gloves/protective clothing/eye protection/face protection.

Response:

P304 + P340 IF INHALED: Remove Person to fresh air and keep comfortable for breathing.

P310: Immediately call a POISON CENTER or doctor.

P301 + P330 + P331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.

P303 + P361 + P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing.

Rinse skin with water [or shower].

P363 Wash contaminated clothing before reuse.

P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes.

Remove contact lenses, if present and easy to do. Continue rinsing.

P314: Get medical attention/advice if you feel unwell.

Storage:

P403 + P233 Store in a well-ventilated place. Keep container tightly closed.

P405: Store locked up.

Disposal

P501: Dispose of contents/container in accordance with local/regional/national/international regulation.

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3 COMPOSITION/INFORMATION ON INGREDIENTS

Composition Mixture
Chemical name Lithium Nickel Cobalt Aluminum Oxide
Chemical formula $\text{LiNi}_{0.78}\text{Co}_{0.15}\text{Al}_{0.05}\text{Mg}_{0.02}\text{O}_{1.985}(\text{BO}_3)_{0.01}$
Ingredient and information:

COMPONENT	Li ₂ O	Ni ₂ O ₃	Co ₂ O ₃	Al ₂ O ₃	MgO	B ₂ O ₃
CAS-NUMBER	12057-24-8	1314-06-3	1308-04-9	1344-28-1	1309-48-4	1303-86-2
TSCA INVENTORY	Listed	Listed	Listed	Listed	Listed	Listed
%	12 - 25	50 - 90	5 - 20	1 - 10	0 - 5	0 - 5

Concentration or concentration range >98wt%

4 FIRST-AID MEASURES

IF INHALED: Remove Person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER or doctor.

IF ON SKIN (or hair): Take off immediately all contaminated clothing.

Rinse skin with water [or shower]. Call a POISON CENTER or doctor if necessary.

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Call a POISON CENTER or doctor if necessary.

IF SWALLOWED: Rinse mouth. Do NOT induce vomiting. Immediately call a POISON CENTER or doctor.

5 FIRE-FIGHTING MEASURES

This product is not flammable. Suitable extinguishing media corresponding to the situation of a fire in the surrounding area should be used.

Unsuitable extinguishing media:

Avoid pouring water directly onto the product

6 ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures:

Wearing of suitable protective equipment (including personal protective equipment, (see Section 8 of the SDS) to prevent any contamination of skin, eyes and personal clothing.

Remove ignition sources and provide sufficient ventilation and emergency procedures needed to evacuate the danger area, or consult an expert.

Environmental precautions:

Do not discharge into the drains/surface waters/groundwater. Do not discharge into the subsoil/soil.

Methods and materials for containment and cleaning up:

Pick up mechanically, avoiding dust, and provide disposal in suitable recipients.

7 HANDLING AND STORAGE

Precautions for safe handling:

Safe handling of the mixtures, prevent handling of incompatible mixtures and minimize the release of the mixture to the environment. Wash hands after use. Remove contaminated clothing and protective equipment before entering eating areas.

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Conditions for safe storage, including any incompatibilities:

Keep only in original container. Keep container tightly closed in a dry, cool and well-ventilated place. Protect from moisture. Protect from heat and direct solar radiation. Keep under lock and key or accessible only to specialists or people authorized by them.

8 EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters:

Ni	OSHA: TWA 1mg (Ni)/m ³ ACGIH: TWA 1.5mg (Ni) / m ³
Co	OSHA: TLV-TWA (8Hr) (COBALT DUST and FUME): 0.1mg / m ³ ACGIH: TLV-TWA (8Hr) (COBALT DUST and FUME): 0.02mg / m ³
Al	ACGIH: TLV-TWA (8Hr) (Aluminum Oxide): 10mg / m ³

Protective and hygiene measures:

Do not breathe dust. Avoid contact with eyes and skin. Wash hands before breaks and immediately after handling the product. Take off immediately all contaminated clothing.

Appropriate engineering controls:

Use local exhaust ventilation (use only in an enclosed system)

Use explosive dust handling controls

Individual protection measures:

Each person who is reasonably likely to be exposed to the chemical (or a mixture including more than 0.1 percent of the chemical) by dermal contact or inhalation (including airborne forms of dust, mist, fume, smoke, vapor or gas) is required to wear personal protective equipment that provides a barrier to prevent dermal exposure and respirator. Personal protective equipment and respirators should meet the following qualifications:

Skin Protection: gloves and bodysuit that provide an impervious barrier to prevent dermal contact during normal or expected duration of conditions and exposure, shown through either testing or evaluation of specification from the supplier of the personal protective equipment.

Eye Protection: tight fitting full face-piece or hood used with respirator (designated below).

Respirator: Respirators must provide a National Institute for Occupational Safety and Health (NIOSH) assigned protection factor (APF) of at least 150. Supplied-air respirators operated in positive pressure demand or other positive pressure mode and equipped with a tight-fitting full facepiece (or hood) will meet this requirement.

9 PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties:

Appearance (physical state, color):	Solid black powder (Inorganic)
Odor:	odorless
Melting point:	> 1000 °C
Flash point:	not applicable
Lower explosion limits:	no data
Upper explosion limits:	no data
Ignition temperature:	not applicable
Water solubility:	Insoluble
Decomposition temperature:	> 1000°C
pH:	≐ 11.5 (2% solution)
Density (at 20 °C):	1.2~2.8 g/cm ³

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10 STABILITY AND REACTIVITY

Reactivity, Chemical stability:	Stable under normal conditions.
Possibility of hazardous reactions:	Not known.
Conditions to avoid:	Stable under normal conditions.
Incompatible materials:	Protect from moisture. Protect from heat and direct solar radiation.
Hazardous decomposition products:	No decomposition if stored and applied as directed.

11 TOXICOLOGICAL INFORMATION

Acute toxicity:	OECD403 LD50 0.5 to 1.0 (mg/l) (dust)
Skin corrosion/irritation:	OECD404 positive
Serious eye damage/irritation:	Product may cause irreversible eye injuries.
Respiratory or skin sensitization:	causes strong corrosions.
Germ cell mutagenicity:	No data available.
Carcinogenicity:	Nickel Compound (Class 1): IARC Category 1, ACGIH A1 (insolubility), Japan Society for Occupational Health 1. Cobalt and its inorganic compounds (Class 2): IARC Category 2B, ACGIH A3, Japan Society for Occupational Health 2B.
Reproductive Toxicity:	Boron oxide: Cat. 2; R60-61 (EU-Annex I) GHS Category 1B
STOST-single exposure:	Cobalt: Inhibits liver function, ATSDR (2004 Edition).
STOST-repeated exposure:	NOEL (Oral, Rat): 50 mg/kg Cobalt: Inhibits respiratory function, ATSDR (2004 Edition).
Aspiration Hazard:	No data available.

12 ECOLOGICAL INFORMATION

Toxicity:	No data available.
Persistence and degradability:	No data available.
Bio accumulative potential:	No data available.
Mobility in soil:	No data available.
Results of PBT and vPvB assessment:	No data available.

13 DISPOSAL INFORMATION

Ensure disposal of contents/container in accordance with local/regional/national/international regulation

14 TRANSPORT INFORMATION

International regulation:

IMDG/ICAO/IATA

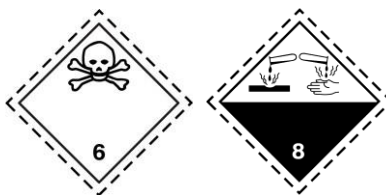
UN number:	3290
Proper Shipping Name:	Toxic solid, corrosive, inorganic, N.O.S. (Lithium Nickel Cobalt Aluminum Oxide)
Hazard class:	6.1
Subsidiary risks:	8
Packing Group:	I

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Hazard label:



15 REGULATORY INFORMATION

Nothing herein is to be taken as a license to operate under or a recommendation to infringe any patents. Any use of these data and information must be determined by the user to be in accordance with Federal, state and local laws and regulations.

16 OTHER INFORMATION

The data in this SDS relates only to the specific material designated herein and does not relate to use in combination with any other material or in any process.

The information set forth herein is based on technical data that TODA AMERICA, INC. believes to be reliable. It is intended for use by persons having technical skill and at their own discretion and risk. Since conditions of use are outside our control, we make no warranties, expressed or implied, and assume no liability in connection with any use of this information.

Revision History:

9/01/2015:

§14: Revised proper shipping name to:

Toxic solid, corrosive, inorganic, N.O.S. (Lithium Nickel Cobalt Aluminum Boron Oxide)

From:

Corrosive Solid, Toxic, N.O.S. (Lithium Nickel Cobalt Aluminum Boron Oxide)

03/27/2017

§8: Clarified requirements for PPE.

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