

Kurt J. Lesker Company

Nickel–aluminum alloy, powder and pieces

Manufacturer MSDS Number: Ni–Al



SECTION 1 : Chemical Product and Company Identification

MSDS Name: Nickel–aluminum alloy, powder and pieces

Manufacturer Name: Kurt J. Lesker Company

Address:

P.O. Box 10
1925 Route 51
Clairton, PA 15025

For emergencies in the US, call CHEMTREC: 800–424–9300

Other Phone: US National Poison Hotline: (800)222–1222

Manufacturer MSDS Creation Date:

06/27/2006

Manufacturer MSDS Revision Date:

06/25/2008

Synonyms:

Nickel–aluminum alloy, Aluminum 5% Nickel 95% .

Chemical Family: Metal alloy

Chemical Formula: Ni–Al

Molecular Weight: No data.

DOT HAZARD LABEL

No data.

Product Codes:

Ni–Al



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SECTION 2 : Hazardous Ingredients/Identity Information

Chemical Name	CAS#	% Weight	
Nickel	7440–02–0	0.0 –95.0 %	

RTECS:

QR5950000

Chemical Name	CAS#	% Weight	
Aluminum	7429–90–5	0.0 –5.0 %	

RTECS:

BD0330000



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SECTION 3 : Physical And Chemical Characteristics

Physical State/Appearance:

Metallic powder and pieces, no odor. .

Physical State:

[] Gas , [] Liquid , [X] Solid

pH:

No data.

Vapor Pressure:

NA (VS. AIR OR MM HG)

Vapor Density:

NA (VS. AIR = 1)

Boiling Point:

N.A.

Melting Point:

1500.00 deg C (2732.0 deg F) to 2000.00 deg C (3632.0 deg F)

Solubility In Water:

insoluble

Specific Gravity:

NE (WATER = 1)

Density:

No data.

Evaporation Point:

NA (VS BUTYL ACETATE=1)

Percent Volatile:

N.A.

FlashPoint:

N.A.

Upper Flammable Explosive Limit:

NA

Lower Flammable Explosive Limit:

NA



SECTION 4 : Fire And Explosion Hazards

Flash Point:

N.A.

Flash Point Method:

NON-FLAMMABLE

Upper Flammable or Explosive Limit: NA

Lower Flammable or Explosive Limit: NA

Extinguishing Media:

Not applicable. Use suitable extinguishing media for surrounding materials and type of fire. .

Fire Fighting Instructions:

Firefighters must wear full face, self-contained breathing apparatus with full protective clothing to prevent contact with skin and eyes. Fumes from fire are hazardous. Isolate runoff to prevent environmental pollution. .

Unusual Fire Hazards:

NICKEL: Contact with strong acids may form flammable and explosive hydrogen gas. Contact with sulfur may cause evolution of heat. Nickel reacts violently with fluorine, ammonium nitrate, hydrazine, ammonia, (H₂+dioxane), performic acid, phosphorous, selenium, sulfur and (Ti+KClO₃). Powders may ignite spontaneously in air.
ALUMINUM: Dust is moderately flammable/explosive by heat, flame or chemical reaction with powerful oxidizers. May ignite on contact with vapors of AsCl₃, SCl₂, Se₂Cl₂, PCl₅; heating with barium peroxide; contact with O₂; mixtures with picric acid+water after a delayed period; exothermic reaction with water+iron powder which emits hydrogen gas; and spontaneously ignites in CS₂ vapors. May ignite and react violently with mixtures of sodium peroxide and O₂+H₂O; on contact with halogens and interhalogens. May react violently with hydrochloric acid, hydrofluoric acid, hydrogen chloride gas and disulfur dibromide; non-metals phosphorus, sulfur and selenium; with sulfur, Sb or As when heated; and potential violent reaction with sodium acetylid. May have a violent or explosive reaction when heated with metal oxides, oxosalts, some halocarbons, sulfides or hot copper oxide worked with an iron or steel wool. May have an explosive reaction with sodium sulfate above 800C; in powdered form with

KClO₄+Ba(NO₃)₂+KNO₃+H₂O and Ba(NO₃)₂+KNO₃+sulfur+vegetable adhesives+H₂O after delayed period; powder forms sensitive explosive mixture with oxidants; mixtures with powdered AgCl, NH₄, NO₃, or NH₄NO₃+Ca(NO₃)₂+formamide+H₂O; mixtures with ammonium peroxodisulfate+water; and potential explosive reaction with CCl₄ during ball milling operations. .



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SECTION 5 : Health Hazards

Applies to All Ingredients:

Route of Exposure:

Inhalation? Yes , Skin? Yes , Eyes? Yes , Ingestion? Yes , Other: N

Potential Health Effects:

Eye Contact:

May cause irritation.

Skin Contact:

Nickel may cause irritation.

Inhalation:

Nickel may cause irritation to the upper respiratory tract, nasal cavities and pulmonary asthma. Inhalation of finely divided aluminum powder has been reported to cause pulmonary fibrosis.

Ingestion:

Nickel is poison by ingestion. Large doses may cause intestinal disorders, convulsions and asphyxia.

Chronic Eye Contact:a

Nickel may cause conjunctivitis.

Chronic Skin Contact:

Nickel may sensitize the skin (nickel itch). May cause allergic dermatitis, eczematous dermatitis and may be accompanied a week later with superficial skin ulcers, which may discharge and become crusted.

Chronic Inhalation:

Nickel may cause pneumitis.

Chronic Ingestion:

May cause nickel toxicity.

Carcinogenicity:

NTP? Yes , IARC Monographs? Yes , OSHA Regulated? Yes

Target Organs:

Nickel may affect the nasal cavities, lungs and skin. .

Signs/Symptoms:

INHALATION: May cause a red, dry, sore nose and throat, coughing and shortness of breath. INGESTION: May cause gastritis, convulsions, asphyxia, giddiness, nausea, diarrhea and vomiting. Nickel toxicity may cause: gastroenteritis; Nervous symptoms such as tremor, chorea-like movements and paralysis occur prior to death, which occurs mostly from heart failure. SKIN: May cause red, itching, swelling, burning and ulcers. EYE: May cause red, itching and watering. .

Other Potential Health Effects:

CARCINOGENICITY/OTHER INFORMATION: No data available. NICKEL OTHER TOXICITY DATA: otr-ham:kdy 400 mg/L orl-rat TDLo: 158 mg/kg (MGN):TER otr-ham:emb 5 umol/L scu-rat TDLo: 3000 mg/kg/6W-I:ETA ims-rat TDLo: 56 mg/kg:CAR par-rat TDLo: 40 mg/kg/52W-I:ETA imp-rat TDLo: 250 mg/kg:CAR ims-mus TDLo: 200 mg/kg:NEO imp-rbt TDLo: 165 mg/kg/2Y-I:NEO,TER orl-rat LDLo: 5 g/kg itr-rat LDLo: 12 mg/kg ivn-mus LDLo: 50 mg/kg ivn-dog LDLo: 10 mg/kg scu-rat LDLo: 12500 ug/kg ipr-rbt LDLo: 7 mg/kg scu-rbt LDLo: 7500 ug/kg orl-gpg LDLo: 5 mg/kg ALUMINUM OTHER TOXICITY DATA: None recorded. .

Aggravation of Pre-Existing Conditions:

Pre-existing respiratory disorders, pulmonary functions, asthma and skin disorders. .

See "Section II" LD 50/LC 50: See "Other Toxicity Data"



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SECTION 6 : Emergency And First Aid Procedures

Physical Health Hazard:

HEALTH HAZARDS (ACUTE AND CHRONIC): To the best of our knowledge the chemical, physical and toxicological properties of nickel-aluminum alloy have not been thoroughly investigated and recorded. NICKEL: Confirmed carcinogen with experimental carcinogenic, neoplastigenic, tumorigenic and teratogenic data. Poison by ingestion, intratracheal, intraperitoneal, subcutaneous and intravenous routes. An experimental teratogen. Ingestion of soluble

salts causes nausea, vomiting and diarrhea. Hypersensitivity to nickel is common and can cause allergic contact dermatitis, pulmonary asthma, conjunctivitis and inflammatory reactions around nickel containing medical implants and prosthesis. (Sax, Dangerous Properties of Industrial Materials, eighth edition) ALUMINUM: Aluminum compounds have many commercial uses and are commonly found in industry. Many of these materials are active chemically and thus exhibit dangerous toxic and reactive properties. Inhalation of fine aluminum oxide particles is associated with Shaver's disease. (Sax, Dangerous Properties of Industrial Materials, eighth edition)

Eye Contact:

Flush eyes with lukewarm water, lifting upper and lower eyelids, for at least 15 minutes. Seek medical attention if symptoms persist.

Skin Contact:

Remove contaminated clothing; brush material off skin; wash affected area with mild soap and water; seek medical attention if symptoms persist.

Inhalation:

Remove victim to fresh air; keep warm and quiet; give oxygen if breathing is difficult and seek medical attention.

Ingestion:

Give 1–2 glasses of milk or water and induce vomiting; seek medical attention immediately. Never induce vomiting or give anything by mouth to an unconscious person.

Note to Physicians:

No data available.



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SECTION 7 : Reactivity Data

Chemical Stability:

Unstable [] Stable [X]

Conditions to Avoid:

CONDITIONS TO AVOID – INSTABILITY: None .; CONDITIONS TO AVOID – HAZARDOUS POLYMERIZATION: None .

Incompatibilities with Other Materials:

NICKEL: Oxidizing agents, sulfur compounds, hydrogen and oxygen, magnesium silicate, methanol, organic solvents, aluminum, aluminum chloride, ethylene, p–dioxane, strong acids, wood and other combustibles. ALUMINUM: Water, oxidizing agents, acids, acid chlorides, harsh alkalis and halogenated compounds. .

Hazardous Polymerization:

Will occur [] Will not occur [X]

Hazardous Decomposition Products:

NICKEL: Nickel carbonyl, oxides of nitrogen, hydrogen gas. ALUMINUM: Hydrogen gas .



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SECTION 8 : Precautions For Safe Handling

Spill Cleanup Measures:

Wear appropriate respiratory and protective equipment specified in section VIII–control measures. Isolate spill area and provide ventilation. Vacuum up spill using a high efficiency particulate absolute (HEPA) air filter and place in a closed container for proper disposal. Take care not to raise dust. .

Other Precautions:

None .

HAZARD LABEL INFORMATION:

Store in cool, dry area Store in tightly sealed container Wash thoroughly after handling

Handling:

None .

Storage:

No data available.

Hygiene Practices:

WORK/HYGIENIC/MAINTENANCE PRACTICES: Implement engineering and work practice controls to reduce and maintain concentration of exposure at low levels. Use good housekeeping and sanitation practices. Do not use tobacco or food in work area. Wash thoroughly before eating and smoking. Do not blow dust off clothing or skin with compressed air. .

Waste Disposal:

Dispose of in accordance with local, state and federal regulations. .



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SECTION 9 : Control Measures

Ventilation System:

LOCAL EXHAUST: To maintain concentration at or below the PEL, TLV SPECIAL: Handle in a controlled process
MECHANICAL (GENERAL): Not recommended OTHER: None

Hand Protection Description:

Rubber gloves

Eye/Face Protection:

Safety glasses

Protective Clothing/Body Protection:

Protective gear suitable to prevent contamination

Respiratory Protection:

NIOSH – approved dust–mist–vapor cartridge respirator

NIOSH approved respirator Impervious gloves Safety glasses Clothes to prevent skin contact

Ingredient Guidelines

Ingredient: Aluminum

Guideline Information: ACGIH TLV: 15 mg/m³; OSHA PEL: 10 mg/m³; OTHER LIMITS: 5mg/m³ resp

Ingredient: Nickel

Guideline Information: ACGIH TLV: .05 mg/m³; OSHA PEL: 1 mg/m³; OTHER LIMITS: NE



SECTION 10 : Other Information

Nickel:

Section 302:

No

Section 304:

Yes 100 LB

Section 313 Toxic Release Form:

Yes

Aluminum:

Section 302:

No

Section 304:

No

Section 313 Toxic Release Form:

Yes

MSDS Revision Date:

06/25/2008

Disclaimer:

Kurt J. Lesker Company ("KJLC") believes the information contained in this Material Safety Data Sheet is accurate as of the "Date of Last Revision" specified. The information relates only to typical properties of the product. Do not use the information for product performance or specification purposes. The information is for use by technically skilled persons at their own risk. KJLC MAKES NO EXPRESS OR IMPLIED WARRANTY OF ANY KIND, INCLUDING WITHOUT LIMITATION WARRANTY OF FITNESS FOR A PARTICULAR PURPOSE, WITH RESPECT TO THE PRODUCT OR THE INFORMATION. The information may not be valid for product use in combination with any other product or material or in any process. KJLC expressly disclaims any liability arising from any use of the product or any reliance on the information. Do not treat the information (a) as assurance that use of the product will not infringe patent or other rights or (b) as a license or grant of patent or other property rights. "KJLC" means KJLC and each of its subsidiaries.

Abbreviations used

NA=Not Applicable NE: Not Established

ADDENDUM : Other Client Information

, EJTNIAL402A2, EJTNIAL402A4, EJTNIAL403A2, EJTNIAL403A4,
EJTNIALHF2A4, EVMNICRAL6KG

Notes:

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