

SAFETY DATA SHEET

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SECTION 1. IDENTIFICATION

Product Name: Nickel Carbonate Basic Hydrate

Product Number: All applicable American Elements product codes, e.g. NI-CBB-02-P.XHYD , NI-CBB-03-P.XHYD , NI-CBB-04-P.XHYD , NI-CBB-05-P.XHYD

CAS #: 39380-74-0

Relevant identified uses of the substance: Scientific research and development

Supplier details: American Elements 10884 Weyburn Ave. Los Angeles, CA 90024 Tel: +1 310-208-0551 Fax: +1 310-208-0351

Emergency telephone number:

+1 800-424-9300

SECTION 2. HAZARDS IDENTIFICATION

Classification of the substance or mixture in accordance with 29 CFR 1910 (OSHA HCS) GHS08 Health hazard Resp. Sens. 1 H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled. Muta. 2 H341 Suspected of causing genetic defects. Carc. 1A H350 May cause cancer. Repr. 1B H360 May damage fertility or the unborn child. STOT RE 1 H372 Causes damage to the lung, the kidneys and the liver through prolonged or repeated exposure. Route of exposure: Inhalative. GHS07 Acute Tox, 4 H302 Harmful if swallowed. Acute Tox, 4 H332 Harmful if inhaled. Skin Irrit. 2 H315 Causes skin irritation. Skin Sens. 1 H317 May cause an allergic skin reaction. Hazards not otherwise classified No information known. Label elements GHS label elements The product is classified and labeled in accordance with 29 CFR 1910 (OSHA HCS) Hazard pictograms



GHS07 GHS08 Signal word: Danger Hazard statements H302+H332 Harmful if swallowed or if inhaled. H315 Causes skin irritation. H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled. H317 May cause an allergic skin reaction. H341 Suspected of causing genetic defects. H350 May cause cancer. H360 May damage fertility or the unborn child. H372 Causes damage to the lung, the kidneys and the liver through prolonged or repeated exposure. Route of exposure: Inhalative. Precautionary statements P260 Do not breathe dust/fume/gas/mist/vapours/spray. P284 In case of inadequate ventilation wear respiratory protection. P261 Avoid breathing dust/fume/gas/mist/vapours/spray. P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing. P405 Store locked up. P501 Dispose of contents/container in accordance with local/regional/national/international regulations. WHMIS classification D2A - Very toxic material causing other toxic effects Classification system HMIS ratings (scale 0-4) (Hazardous Materials Identification System) Health (acute effects) = 2Flammability = 1 Physical Hazard = 1 Other hazards Results of PBT and vPvB assessment PBT: Not applicable. vPvB: Not applicable.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical characterization: Substances CAS# Description: 3333-67-3 Nickel(II) carbonate, anhydrous Identification number(s): EC number: 222-068-2 Index number: 028-010-00-0

SECTION 4. FIRST AID MEASURES

Description of first aid measures After inhalation Supply fresh air. If required, provide artificial respiration. Keep patient warm. Seek immediate medical advice. After skin contact Immediately wash with water and soap and rinse thoroughly. Seek immediate medical advice. After eye contact Rinse opened eye for several minutes under running water. Then consult a doctor. After swallowing Seek medical treatment. Information for doctor Most important symptoms and effects, both acute and delayed No further relevant information available. Indication of any immediate medical attention and special treatment needed No further relevant information available.

SECTION 5. FIREFIGHTING MEASURES

Extinguishing media Suitable extinguishing agents Carbon dioxide, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam. Special hazards arising from the substance or mixture If this product is involved in a fire, the following can be released: Toxic metal oxide fume Carbon monoxide and carbon dioxide Advice for firefighters Protective equipment: Wear self-contained respirator. Wear fully protective impervious suit.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures Wear protective equipment. Keep unprotected persons away. Ensure adequate ventilation Environmental precautions: Do not allow material to be released to the environment without proper governmental permits. Methods and material for containment and cleaning up: Dispose of contaminated material as waste according to section 13. Ensure adequate ventilation. Prevention of secondary hazards: No special measures required. Reference to other sections See Section 7 for information on safe handling See Section 8 for information on personal protection equipment. See Section 13 for disposal information.

SECTION 7. HANDLING AND STORAGE

Handling Precautions for safe handling Keep container tightly sealed.

Store in cool, dry place in tightly closed containers. Ensure good ventilation at the workplace. Open and handle container with care. Information about protection against explosions and fires: No information known. Conditions for safe storage, including any incompatibilities Storage Requirements to be met by storerooms and receptacles: No special requirements. Information about storage in one common storage facility: Store away from oxidizing agents. Further information about storage conditions: Keep container tightly sealed. Store in cool, dry conditions in well sealed containers. Specific end use(s) No further relevant information available.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Additional information about design of technical systems: Properly operating chemical fume hood designed for hazardous chemicals and having an average face velocity of at least 100 feet per minute. **Control parameters** Components with limit values that require monitoring at the workplace: 3333-67-3 Nickel(II) carbonate, anhydrous (100.0%) PEL (USA) Long-term value: 1 mg/m³ as Ni REL (USA) Long-term value: 0.015 mg/m³ as Ni; See Pocket Guide App. A TLV (USA) Long-term value: 0.1 mg/m³ as Ni; inhalable fraction EL (Canada) Long-term value: 0.05 mg/m³ as Ni; ACIGH A1, IARC 1 EV (Canada) Long-term value: 0.1 mg/m³ Inhalable fraction, as Ni Additional information: No data Exposure controls Personal protective equipment General protective and hygienic measures The usual precautionary measures for handling chemicals should be followed. Keep away from foodstuffs, beverages and feed. Remove all soiled and contaminated clothing immediately. Wash hands before breaks and at the end of work. Store protective clothing separately. Avoid contact with the eyes and skin. Maintain an ergonomically appropriate working environment. Breathing equipment: Use suitable respirator when high concentrations are present. Protection of hands: Impervious gloves Check protective gloves prior to each use for their proper condition. The selection of suitable gloves not only depends on the material, but also on quality. Quality will vary from manufacturer to manufacturer. Penetration time of glove material (in minutes): Not determined Eye protection: Safety glasses Body protection: Protective work clothing.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties **General Information** Appearance: Form: Powder Color: Light Odor: Not determined Odor threshold: Not determined. pH-value: Not applicable. Change in condition Melting point/Melting range: Not determined Boiling point/Boiling range: Not determined Sublimation temperature / start: Not determined Flammability (solid, gaseous): Not determined. Ignition temperature: Not determined Decomposition temperature: Not determined Auto igniting: Not determined. Danger of explosion: Product does not present an explosion hazard. **Explosion limits:** Lower: Not determined Upper: Not determined Vapor pressure: Not applicable. Density: Not determined Relative density: Not determined. Vapor density: Not applicable. Evaporation rate: Not applicable. Solubility in / Miscibility with Water: Not determined Partition coefficient (n-octanol/water): Not determined. Viscosity: dynamic: Not applicable. kinematic: Not applicable. Other information No further relevant information available.

SECTION 10. STABILITY AND REACTIVITY

Reactivity No information known. Chemical stability Stable under recommended storage conditions. Thermal decomposition / conditions to be avoided: Decomposition will not occur if used and stored according to specifications. Possibility of hazardous reactions No dangerous reactions known Conditions to avoid No further relevant information available. Incompatible materials: Oxidizing agents Hazardous decomposition products:

SECTION 11. TOXICOLOGICAL INFORMATION

Information on toxicological effects

Acute toxicity: Harmful if inhaled.

Harmful if swallowed.

The Registry of Toxic Effects of Chemical Substances (RTECS) contains acute toxicity data for this substance.

LD/LC50 values that are relevant for classification: No data

Skin irritation or corrosion: Causes skin irritation.

Eye irritation or corrosion: Irritating effect.

Sensitization:

May cause allergy or asthma symptoms or breathing difficulties if inhaled.

May cause an allergic skin reaction.

Germ cell mutagenicity:

Suspected of causing genetic defects.

The Registry of Toxic Effects of Chemical Substances (RTECS) contains mutation data for this substance.

Carcinogenicity: May cause cancer.

IARC-1: Carcinogenic to humans: sufficient evidence of carcinogenicity.

ACGIH A1: Confirmed human carcinogen: Agent is carcinogenic to humans based on epidemiologic studies of, or convincing clinical evidence in, exposed humans.

NTP-K: Known to be carcinogenic: sufficient evidence from human studies.

The Registry of Toxic Effects of Chemical Substances (RTECS) contains tumorigenic and/or carc inogenic and/or neoplastic data for this substance.

Reproductive toxicity:

May damage fertility or the unborn child.

Specific target organ system toxicity - repeated exposure:

Causes damage to the lung, the kidneys and the liver through prolonged or repeated exposure. Route of exposure: Inhalative.

Specific target organ system toxicity - single exposure: No effects known

Aspiration hazard: No effects known.

Subacute to chronic toxicity: No effects known.

Additional toxicological information:

To the best of our knowledge the acute and chronic toxicity of this substance is not fully known

SECTION 12. ECOLOGICAL INFORMATION

Toxicity Aquatic toxicity: No further relevant information available. Persistence and degradability No further relevant information available. Bioaccumulative potential No further relevant information available. Mobility in soil No further relevant information available. Ecotoxical effects: Remark: Very toxic for aquatic organisms Additional ecological information: General notes: Do not allow material to be released to the environment without proper governmental permits. Do not allow product to reach ground water, water course or sewage system, even in small quantities. Danger to drinking water if even extremely small quantities leak into the ground. Also poisonous for fish and plankton in water bodies. May cause long lasting harmful effects to aquatic life. Avoid transfer into the environment. Very toxic for aquatic organisms Results of PBT and vPvB assessment PBT: Not applicable. vPvB: Not applicable. Other adverse effects No further relevant information available.

SECTION 13. DISPOSAL CONSIDERATIONS

Waste treatment methods Recommendation Consult state, local or national regulations to ensure proper disposal. Uncleaned packagings: Recommendation: Disposal must be made according to official regulations.

SECTION 14. TRANSPORT INFORMATION

UN-Number DOT, IMDG, IATA UN3077 UN proper shipping name DOT Environmentally hazardous substances, solid, n.o.s. (Nickel(II) carbonate, anhydrous) IMDG, IATA ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Nickel(II) carbonate, anhydrous) Transport hazard class(es) DOT, IMDG Class 9 Miscellaneous dangerous substances and articles. Label 9 Class 9 (M7) Miscellaneous dangerous substances and articles Label 9 ΙΑΤΑ Class 9 Miscellaneous dangerous substances and articles. Label 9 Packing group

DOT, IMDG, IATA ш Environmental hazards: Special marking (ADR): Symbol (fish and tree) Special marking (IATA): Symbol (fish and tree) Special precautions for user Warning: Miscellaneous dangerous substances and articles Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code Not applicable. Transport/Additional information: DOT Marine Pollutant (DOT): No UN "Model Regulation": UN3077, Environmentally hazardous substances, solid, n.o.s. (Nickel(II) carbonate, anhydrous), 9, III

SECTION 15. REGULATORY INFORMATION

Safety, health and environmental regulations/legislation specific for the substance or mixture GHS label elements The product is classified and labeled in accordance with 29 CFR 1910 (OSHA HCS) Hazard pictograms GHS07 GHS08 Signal word: Danger Hazard statements H302+H332 Harmful if swallowed or if inhaled. H315 Causes skin irritation. H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled. H317 May cause an allergic skin reaction. H341 Suspected of causing genetic defects. H350 May cause cancer. H360 May damage fertility or the unborn child. H372 Causes damage to the lung, the kidneys and the liver through prolonged or repeated exposure. Route of exposure: Inhalative. Precautionary statements P260 Do not breathe dust/fume/gas/mist/vapours/spray. P284 In case of inadequate ventilation wear respiratory protection. P261 Avoid breathing dust/fume/gas/mist/vapours/spray. P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing. P405 Store locked up. P501 Dispose of contents/container in accordance with local/regional/national/international regulations. National regulations All components of this product are listed in the U.S. Environmental Protection Agency Toxic Substances Control Act Chemical substance Inventory. All components of this product are listed on the Canadian Domestic Substances List (DSL). SARA Section 313 (specific toxic chemical listings) 3333-67-3 Nickel(II) carbonate, anhydrous California Proposition 65 Prop 65 - Chemicals known to cause cancer

3333-67-3 Nickel(II) carbonate, anhydrous Prop 65 - Developmental toxicity Substance is not listed. Prop 65 - Developmental toxicity, female Substance is not listed. Prop 65 - Developmental toxicity, male Substance is not listed. Information about limitation of use: For use only by technically qualified individuals. Other regulations, limitations and prohibitive regulations Substance of Very High Concern (SVHC) according to the REACH Regulations (EC) No. 1907/2006. Substance is not listed. The conditions of restrictions according to Article 67 and Annex XVII of the Regulation (EC) No 1907/2006 (REACH) for the manufacturing, placing on the market and use must be observed. Substance is not listed. Annex XIV of the REACH Regulations (requiring Authorisation for use) Substance is not listed. Chemical safety assessment: A Chemical Safety Assessment has not been carried out.

SECTION 16. OTHER INFORMATION

Safety Data Sheet according to Regulation (EC) No. 1907/2006 (REACH). The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. American Elements shall not be held liable for any damage resulting from handling or from contact with the above product. See reverse side of invoice or packing slip for additional terms and conditions of sale. COPYRIGHT 1997-2022 AMERICAN ELEMENTS. LICENSED GRANTED TO MAKE UNLIMITED PAPER COPIES FOR INTERNAL USE ONLY.