SAFETY DATA SHEET

Nickel Chloride Hexahydrate

SECTION 1: IDENTIFICATION

Product identifier used on a label:	**Nickel Chloride Hexahydrate**
Product code:	2059
HS Code:	282735
CAS number:	7791-20-0
Recommended use of the chemical and restrictions on use:	Industrial use.
Chemical family:	Inorganic salt.
Name, address and phone # of supplier:	Aqua Bond Inc. 440 Passmore Ave. Toronto, ON, M1V 5J8 (416) 754-7211
24 Hr. Emergency phone #	**CANUTEC (613) 996-6666**

SECTION 2: HAZARDS IDENTIFICATION

Classification of the chemical: This material is classified as hazardous under U.S. OSHA regulations (29CFR 1910.1200) (Hazcom 2012) and Canadian WHMIS regulations (Hazardous Products Regulations) (WHMIS 2015).

Hazard classification:

ACUTE TOXICITY – ORAL: CATEGORY 3 – Toxic if swallowed.
ACUTE TOXICITY – INHALATION: CATEGORY 3 – Toxic if inhaled.
SKIN CORROSION/IRRITATION: CATEGORY 2 – Causes skin irritation.
SENSITIZATION – RESPIRATORY: CATEGORY 1 – May cause allergy or asthma symptoms or breathing difficulties if inhaled.
SENSITIZATION – SKIN: CATEGORY 1 – May cause an allergic skin reaction.
GERM CELL MUTAGENICITY: CATEGORY 2 – Suspected of causing genetic defects.
CARCINOGENITY: CATEGORY 1 – May cause cancer.
TOXIC TO REPRODUCTION: CATEGORY 1 – May damage fertility or the unborn child.
HAZARDOUS TO THE AQUATIC ENVIRONMENT – ACUTE HAZARD: CATEGORY 1 – Very toxic to aquatic life.

Label elements:



Signal word: Danger

Hazard statements:

H301: Toxic if swallowed.
H331: Toxic 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.
H351: May cause cancer.
H360: May damage fertility or the unborn child.
H400: Very toxic to aquatic life.

Precautionary statements:

Prevention

P201: Obtain special instruction before use.
P202: Do not handle until all safety precautions have been read and understood.
P261: Avoid breathing dust/fume/gas/mist/vapours/spray.
P264: Wash skin thoroughly after handling.
P270: Do not eat, drink or smoke when using this product.
P271: Use only outdoors or in well-ventilated area.
P272: Contaminated work clothing should not be allowed out of the workplace.
P273: Avoid release to the environment.
P280: Wear protective gloves.
P281: Use personal protective equipment as required.
P285: In case of inadequate ventilation wear respiratory protection.

Response

P308+P313: IF exposed or concerned: Get medical advice/attention.
P391: Collect spillage.

Ingestion:

P301+P310: IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician.
P330: Rinse mouth.

Inhalation:

P304+P340: IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
P311: Call a POISON CENTER or doctor/physician.
P304+P341: IF INHALED: If breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing.
P342+P311: If experiencing respiratory symptoms: Call a POISON CENTER or doctor/physician.

Skin:

P302+P352: IF ON SKIN: Wash with plenty of soap and water.
P332+P313: If skin irritation occurs: Get medical advice/attention.
P333+P313: If skin irritation or rash occurs: Get medical advice/attention.
P362: Take off contaminated clothing and wash before reuse.
P363: Wash contaminated clothing before reuse.

Storage

P403+P233: Store in well-ventilated place. Keep container tightly closed.
P405: Store Locked up.

Disposal

P501: Dispose of contents/container in accordance with applicable regional, national and local laws and regulations.

Nickel Chloride Hexahydrate

Other hazards: Not available.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

Pure substance/ mixture: Pure substance

Ingredient name	**CAS Number**	**Concentration (wt. %)**
Nickel(II) Chloride Hexahydrate	7791-20-0	90-100%

SECTION 4: FIRST-AID MEASURES

Description of first aid measures:

Ingestion	Never give anything by mouth to an unconscious person. Rinse mouth with water. Call a POISON CENTER or doctor/physician.
Inhalation	Remove to fresh air. If not breathing, give artificial respiration. Keep airway open. Call a POISON CENTER or doctor/physician.
Skin contact	In case of contact, immediately wash skin with plenty of soap and water. Remove contaminated clothing and shoes. Get medical attention.
Eye contact	Rinse/flush eyes with water for 15-20 minutes as a precaution. Check for and remove any contact lenses if able to do so during rinsing. Seek medical attention if irritation persists or if concerned.

Most important symptoms and effects, both acute and delayed:
Irritation, Nausea, Headache, Shortness of breath.
Indication of any immediate medical attention and special treatment needed: Treat symptomatically.
Protection of first-aiders: First-Aid Providers: Avoid exposure to blood or body fluids. Wear gloves and other necessary protective clothing. Dispose of contaminated clothing and equipment as bio-hazardous waste.

SECTION 5: FIRE-FIGHTING MEASURES

Extinguishing media:

Suitable	Use water spray, alcohol resistant foam, dry chemical or CO_2.
Unsuitable	Do not use straight stream of water.
Flash point:	Not available.
Autoignition Temperature:	Not available.
Special hazards arising from the substance:	
Hazardous thermal decomposition products:	Hydrogen chloride gas, Nickel/nickel oxides.
Specific hazards:	Combustion product may include carbon oxides or other toxic vapours. Thermal decomposition can lead to release of irritating gases and vapours.
Special protective actions for fire-fighters:	Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training. Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool. Do not allow water used to extinguish fire to enter drains, ground or waterways.
Special protective	Fire-fighters should wear appropriate protective equipment and self-

equipment for fire-fighters:	contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode. Structural firefighters' protective clothing provides limited protection in fire situations ONLY; it is not effective in spill situations where direct contact with the substance is possible.

SECTION 6: ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures:	No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Do not breathe vapor or mist. Provide adequate ventilation.Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment. Wear chemical goggles, body-covering protective clothing, chemical resistant gloves, and rubber boots.
Environmental precautions:	Should not be released into environment. Prevent from reaching drains, sewer, or waterway.
Methods and materials for containment and cleaning up:	Wear protective eyeware, gloves, and clothing. Refer to Section 8. Always obey local regulations. Refer to Section 13. If necessary use trained response staff or contractor. Evacuate personnel to safe areas. Pick up and arrange disposal without creating dust. Sweep up and shovel. Keep in suitable, closed containers for disposal.
Special spill response procedures:	In case of transportation accident, contact CHEMTREC at 1-800-424-9300.

SECTION 7: HANDLING AND STORAGE

Precautions for safe handling:	Avoid generation of vapours/aerosols. Put on appropriate personal protective equipment. Avoid exposure – obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Do not get in eyes or on skin or clothing. Do not breathe vapor or mist. Do not ingest. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Do not enter storage areas and confined spaces unless adequately ventilated. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Do not reuse container.
Conditions for safe storage:	Store in accordance with local regulations. Store in a segregated and approved area. Store protected from direct sunlight in a dry, cool and well-ventilated area, keep away from incompatible materials, food, drink and animal feeding stuffs. Store locked up. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be resealed and kept upright. Do not store in unlabeled containers.
Incompatible materials:	Strong oxidizing agents, peroxides.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters:

Nickel Chloride Hexahydrate

Exposure limits

Ingredient	**Exposure limits**
Nickel(II) Chloride Hexahydrate	OSHA Permissible Exposure Limit (PEL) – 1.0 mg/m^3 (TWA) ACGIH Threshold Limit Value (TLV) – 0.1 mg/m^3 (TWA) NIOSH – 0.015 mg/m^3 (TWA)
Engineering controls:	Use with adequate ventilation. Use explosion-proof electrical/ventilating/lightning equipment. Ensure that eyewash stations and safety showers are close to the workstation locations. Use process enclosures, local exhaust ventilation, or other engineering controls to keep airborne levels below recommended exposure limits. If user operations generate dust, fume or mist, use ventilation to keep exposure to airborne contaminants below the exposure limit.
Individual protection measures:	Eyes/face: Chemical splash goggles and face shield. Skin: Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product. Respiratory: Wear appropriate respirator where spray mist occurs. Be sure to use a NIOSH approved dust and mist respirator or equivalent. Hygiene measures: Avoid contact with skin, eyes and clothing. Wash hands before breaks and immediately after handling the product. When using, do not eat, drink or smoke.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	Green to white crystals.
Odor:	Slightly acidic if wet.
Odor threshold:	Not available.
pH:	4 - 6
Melting point:	Not available.
Freezing point:	Not available.
Initial boiling point and boiling range:	Not available.
Flash point:	Not available.
Evaporation rate:	Not available.
Flammability (solid, gas):	Not available.
Upper and lower flammability limits:	Not available.
Vapour pressure:	Not available.
Vapour density:	Not available.
Relative density:	0.9 g/ml
Solubility in Water:	250 g/L (cold water) / 550 g/L (hot water)
Partition coefficient n-octanol/water:	Not available.
Auto-ignition temperature:	Not available.

Decomposition temperature:	Not available.
Viscosity:	Not available.

SECTION 10: STABILITY AND REACTIVITY

Reactivity:	Nonreactive under normal storage and handling conditions.
Chemical stability:	Stable under normal storage and handling conditions.
Possibility of hazardous reactions:	No data available.
Conditions to avoid:	Avoid moisture. Can liquefy above 40°C.
Incompatible materials:	Strong oxidizing agents, peroxides.
Hazardous decomposition products:	Hydrogen chloride gas, Nickel/nickel oxides.

SECTION 11: TOXICOLOGICAL INFORMATION

Toxicity data (7791-20-0):	LD50 Rat Oral: 105 mg/kg
Information on the likely routes of exposure:	Inhalation, ingestion, skin absorption.
Potential health effects (acute):	Toxic if swallowed. Toxic if inhaled. Causes respiratory tract irritation. May be harmful if absorbed through skin. Causes skin irritation. Causes eye irritation.
Delayed and immediate effects, chronic effects from short and long term exposure:	No data available.
Potential chronic health effects:	No data available.
Carcinogenicity:	Possible human carcinogen.
Mutagenicity:	In vitro tests showed mutagenic effects. Human HeLa cell DNA damage. Hamster fibroblast Sister chromatid exchange. Mouse mammary gland Mutation in mammalian somatic cells. Mouse mammary gland Cytogenetic analysis. Rat Subcutaneous DNA damage.
Teratogenicity:	Presumed human reproductive toxicant.
Developmental effects:	No data available.
Fertility effects:	No data available.
Sensitization:	May cause allergic respiratory and skin reactions.
Toxicological effects:	No data available.
Acute toxicity:	No data available.
Irritation/corrosion:	Contact can severely irritate and burn the eyes.

Specific target organ toxicity single exposure: No data available.

Specific target organ toxicity repeated exposure: Causes damage to organs through prolonged or repeated exposure.

Aspiration hazard: No data available.

SECTION 12 ECOLOGICAL INFORMATION

Toxicity(7791-20-0): Daphnia: EC50 Daphnia magna (Water flea): 0.51 mg/L/48h

Persistence and degradability: Not available.

Bioaccumulative potential: Not available.
Mobility in soil: Not available.

SECTION 13: DISPOSAL CONSIDERATIONS

Disposal methods: The generation of waste should be avoided or minimized wherever possible.
Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and nonrecyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer. Waste packaging should be disposed of as unused product. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

SECTION 14: TRANSPORT INFORMATION

	TDG
UN Number:	UN 3288
UN proper shipping name:	TOXIC SOLID, INORGANIC, N.O.S. (Nickel(II) chloride hexahydrate)
Transport hazard class:	6.1
Packing group:	III
Environmental hazard:	No data available.
Special precautions for user:	**Transport within user's premises:** always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident.

SECTION 15: REGULATORY INFORMATION

United States	
Toxic Substances Control Act (TSCA)	All components are listed.
Superfund Amendments and Reauthorization Acts	Section 311/312; Section 313
Canada	All components are listed.
Canadian Domestic Substances List (DSL):	

SECTION 16: OTHER INFORMATION

Revision date: January 27, 2020
UN = United Nations

Disclaimer

While the information and recommendations set forth are believed to be accurate as of data hereof, Aqua Bond Inc., makes no warranty with respect thereto and disclaims all liability from reliance thereon.