# Safety Data Sheet

## Cadmium Anode Ball 2"

## SECTION 1: IDENTIFICATION

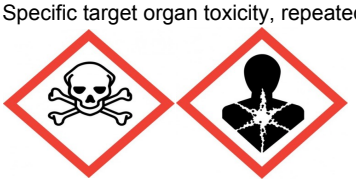
| | |
|---|---|
| PRODUCT IDENTIFIER used on label: | **Cadmium Anode Ball 2"** |
| Synonyms: | N/A |
| Product Code: | 3001PUS50 |
| HS Code: | 8107 |
| CAS Number: | 7440-43-9 |
| Recommended use of the chemical and restrictions on use: | Anode for electroplating application. |
| Chemical family: | Metals |
| Chemical formula: | Cd |
| Name, address and phone # of supplier: | Aqua Bond Inc.<br>440 Passmore Ave.<br>Toronto, ON, M1V 5J8<br>(416) 754-7211 |
| 24 Hr Emergency phone #: | CANUTEC (613) 996-6666 |

## SECTION 2: HAZARD 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, category 3.
Carcinogenicity, category 2.
Specific target organ toxicity, repeated or prolonged exposure, category 2.

Label elements:



Signal word: Danger

Hazard statements:
H301: Toxic if swallowed.
H331: Toxic if inhaled.
H350: May cause cancer.
H373: May cause damage to organs through prolonged or repeated exposure.

Precautionary statements:
P264: Wash hands thoroughly after handling.
P261: Avoid breathing in dust or fumes.
P270: Do not eat, drink, or smoke when using this product.
P201: Obtain special instructions before use.
P202: Do not handle until all safety precautions have been read and understood.
P280: Wear protective gloves/clothing and face/eye protection.
P301+P310: IF SWALLOWED: Immediately call a POISON CONTROL CENTER.
P304: IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P308+P313: IF exposed or concerned: Get medical advice/attention.
P405: Store locked up.
P501: Dispose of contents in accordance with local and federal regulations.

## SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

| Pure substance/mixture: | Pure Substance | | |
|---|---|---|---|
| **Ingredient name** | **CAS Number** | **Concentration (wt.%** | Classification (GHS-US) |
| **Cadmium Anode Ball 2"** | 7440-43-9 | 100 | See section 2 |

## SECTION 4: FIRST- AID MEASURES

Description of first aid measures:

General First-aid Measures: Under normal handling and use, exposure to solid forms of this material present few health hazards. Subsequent operations such as grinding, melting or welding may produce hazardous dust or fumes which can be inhaled or come in contact with the skin or eyes. Emergency responders should take care to avoid secondary exposure to cadmium particulate. Wear appropriate protective equipment.

Ingestion: Rinse mouth with water. Do not induce vomiting. Seek immediate medical attention. Never induce vomiting or give any-thing by mouth to an unconscious person. Ingested cadmium may lead to spontaneous vomiting. If vomiting occurs naturally, have victim rinse mouth with water again.

Inhalation: Remove to fresh air, keep warm and quiet, give oxygen if breathing is difficult. Seek immediate medical attention. Treat pulmonary edema as a priority, even if no symptoms (i.e. wheezing, coughing, shortness of breath, etc.) are apparent. Symptoms of pulmonary edema can be delayed up to 48 hours after exposure. Quickly transport victim to an emergency care facility.

Skin contact: Remove contaminated clothing, wash affected area with soap and water. Seek medical attention. Wash contaminated clothing before reusing.

Eye contact: Flush eyes with lukewarm water, including under upper and lower eyelids, for at least 15 minutes. Seek medical attention.

Most Important Symptoms/Effects, Acute and Delayed: May cause irritation. See section 11 for more information.

Indication of Immediate Medical Attention and Special Treatment: No other information available.

## SECTION 5: FIRE FIGHTING PROCEDURES

Extinguishing Media: Use Class D dry powder extinguishing agent.

Unsuitable Extinguishing Media: Do not use water or foam.

Specific hazards arising from the substance: This product does not present fire or explosion hazards as shipped. Fine dust from processing may ignite if allowed to accumulate and subjected to an ignition source. When heated, cadmium emits highly toxic fumes of cadmium oxide.

Special protective equipment and precautions for firefighters: Full face, self-contained breathing apparatus and full protective clothing when necessary.

## 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. Wear appropriate respiratory and protective equipment specified in section 8. Avoid creating dusts. Avoid breathing dust or fume. Isolate spill area and provide ventilation.

Environmental Precautions: Do not allow to enter drains or to be released to the environment.

Methods and Materials for Containment and Cleaning Up: For larger pieces - pick up mechanically. For chips or dust - vacuum spill using a system equipped with a HEPA filtration system and place in properly labeled closed containers. Special precautions must be taken when changing filters on HEPA vacuum cleaners used to clean up hazardous materials. Caution should be taken to minimize airborne generation of particulate and avoid contamination of air and water.

## SECTION 7: HANDLING AND STORAGE

Precautions for Safe Handling: Handle in a well-ventilated area. Avoid creating dust. Avoid exposure to high temperature. Avoid breathing dust or fumes. Avoid contact with skin and eyes. Wash thoroughly before eating or smoking. See section 8 for infor-mation on personal protection equipment.

Conditions for Safe Storage: Store in a sealed container. Store in a cool, dry area.

Incompatible materials: Do not store together with oxidizers, acids or halogens. See section 10 for more information on incompatible materials.

## SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters:

| Ingredient | Exposure limits | | | |
|---|---|---|---|---|
| | **ACGIH** | | **OSHA PEL** | |
| **Cadmium Anode balls** | **TLV** | **STEL** | **TWA** | **STEL** |
| | **0.01 mg/m³** | **N/A** | **0.005 mg/m³** | **N/A** |

Engineering controls: Local exhaust ventilation or other engineering controls are normally required when handling or using this product to avoid overexposure.
Personal protective equipment (PPE): Lab coat, apron, eye wash, safety shower.
Respiratory protection: When potential exposures are above the occupational limits, approved respirators must be used. . Respiratory protection may be required in addition to ventilation depending upon conditions of use.
Eye protection: Wear chemical splash goggles when handling this product. Have an eye wash station available.
Skin protection: Avoid skin contact by wearing chemically resistant gloves, an apron and other protective equipment de-pending upon conditions of use. Inspect gloves for chemical break-through and replace at regular intervals. Clean protective equipment regularly. Wash hands and other exposed areas with mild soap and water before eating, drinking, and when leaving work.

## SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

**FORMULA:** Cd

**MOLECULAR WEIGHT:** 112.411

**APPEARANCE:** Silvery metallic

**ODOR:** No data available

**PHYSICAL STATE:** Solid

**pH:** No data available

**MELTING POINT:** 609.62°F (320.9°C)

**BOILING POINT:** 1400°F (765°C)

**FREEZING POINT:** No data available

**FLAMMABILITY:** No data Available

**FLASH POINT:** No data available

**AUTO IGNITION TEMPERATURE:** No data available

**DECOMPOSITION TEMPERATURE:** No data available

**VAPOR PRESSURE :** 1mm Hg at 741.2°F (394°C)

**SPECIFIC GRAVITY:** 8.642 g/cm$^3$

**Insoluble in water**

## SECTION 10: REACTIVITY DATA

Reactivity**:** No data.
Chemical Stability**:** Stable under recommended handling and storage conditions. (see section 7)
Possibility of Hazardous Reactions**:** High temperatures will generate toxic cadmium oxide fumes.
Conditions to avoid**:** Avoid creating or accumulating fines or dusts. Avoid high temperatures.
Incompatible materials**:** Peroxides, chlorate, nitrates, halogens, inter-halogens, strong acids, strong bases, sulphur, potassium, zinc, selenium and tellurium.
Hazardous decomposition products**:** Cadmium oxide fumes.

## SECTION 11: TOXICOLOGICAL INFORMATION

Routes of entry: Inhalation, ingestion, skin, eyes. Product as shipped does not present an inhalation hazard; however subse-quent operations may create dusts or fumes which could be inhaled.
Symptoms (Acute): Inhalation of fumes may cause upper respiratory tract irritation and systemic poisoning with early symptoms including headache, coughing, and a metallic taste.
Delayed Effects: After a delay of several hours (up to 10) after inhalation of dust or fumes, a person may develop constriction of the chest, persistent cough, and progressive shortness of breath. There may be headache, chills, diarrhea, muscle aches, nausea, vomiting, irritability, and restlessness. Prolonged exposure to cadmium dust and/or fume may cause loss of sense of smell, occasional ulcerations of the nasal passages, rhino-laryngitis, cough, shortness of breath, mild anemia, sleeplessness, irritability, loss of appetite, and cadmium-yellow fringe on teeth.
Acute Toxicity:

| Chemical Name: | CAS Number | Oral LD50 | Dermal LD50 | Inhalation LC50 |
|---|---|---|---|---|
| Cadmium, Metal | 7440-43-9 | Rat - 225mg/k | N/A | Rat - 25mg/kg/30 mins |

Carcinogenicity:

| Chemical Name: | CAS Number | IARC | NTP | OSHA |
|---|---|---|---|---|
| Cadmium, Metal | 7440-43-9 | 1 | -Known to be carcinogenic | |

Chronic effects: The primary target organ for chronic cadmium effects is the kidney with increased excretion of a specific low molecular weight protein (beta-2-microglobulin). Exposures to high levels of cadmium dust or fume may be immediately dangerous to life or health and can cause delayed pneumonia with fever and chest pain, and pulmonary edema resulting in death.

## SECTION 12: ECOLOGICAL INFORMATION

Overview: May be toxic to aquatic organisms. Do not allow material to be released to the environment. No further relevant information available.
Mobility: N/A
Persistence: N/A
Bioaccumulation: N/A
Degradability: N/A
Other adverse effects: N/A

**Cadmium Anode Ball 2"**

## SECTION 13: DISPOSAL INFORMATION

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 non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. 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: | Not regulated |
| UN proper shipping name: | - |
| Transport hazard class: | - |
| Packing group: | - |
| Environmental hazard: | no |

## SECTION 15: REGULATORY INFORMATION

| | |
|---|---|
| United States | |
| Toxic Substances Control Act (TSCA) | Listed |
| Superfund Admendments and Reauthorization Acts | No |
| Canada | |
| Canadian Domestic Substances List (DSL) | Listed |

## SECTION 16: OTHER INFORMATION

Most of the available information on the health effects of cadmium has been gained from industrial exposure to, and research performed with, cadmium compounds. Comparatively little research has been conducted to determine the difference in health effects of cadmium metal as opposed to cadmium compounds. In animal studies, it appears that in acute exposures, the relatively more soluble cadmium chloride, cadmium oxide fume, and cadmium carbonate compounds are more toxic than the relatively less soluble cadmium sulfide compounds. Toxicity does not strictly correlate with solubility however, and the solubility of cadmium oxide in biological fluids may be greater than it's solubility in water. Cadmium metal dust is believed to be toxic and all precautions should be taken to avoid exposure. Inhalation and ingestion are the most hazardous routes of exposure. Heating cadmium to high temperature will produce cadmium oxide fume, which is known to be extremely toxic. The information contained in this document is based on the state of knowledge at the time of publication and is believed to be correct, but does not purport to be all inclusive and shall be used only as a guide.

GLOSSARY

**NTP**: National Toxicology Program
**OSHA**: Occupational Safety and Health Administration PEL: Permissible Exposure Limit
**PPM**: Parts per million
**RCRA:** Resource Conservation and Recovery Act SARA: Superfund Amendments and Reauthorization Act TLV: Threshold Limit Value
**TSCA:** Toxic Substances Control Act
**ACGIH:** American Conference of Governmental Industrial Hygienists
**CAS:** Chemical Abstract Service Number
**CERCLA:** Comprehensive Environmental Response, Compensation, and Liability Act
**DOT:** U.S. Department of Transportation
**IARC:** International Agency for Research on Cancer N/A: Not Available
**UN** = United Nations

Revision date: December 27, 2019

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