SAFETY DATA SHEET

Ammonium Persulfate

SECTION 1: IDENTIFICATION

Product identifier used on a label:	**Ammonium Persulfate**
Product code:	2143
HS Code:	28334000
CAS-No.:	7727-54-0
Synonyms:	Ammonium Persulphate; Ammonium Peroxydisulfate; Diammonium Peroxydisulphate; Peroxydisulfuric acid, diammonium salt; Peroxydisulfuric acid, ammonium salt.
Recommended use of the chemical and restrictions on use:	Oxidizing agent, etchant, cleaner. Metal finishing. Textile industry. Chemical synthesis. Industrial use.
Chemical family:	Oxidizer
Chemical formula:	$(NH_4)_2S_2O_8$
Name, address and phone # of supplier:	Aqua Bond Inc. PO Box 63635 Toronto, ON, M1V 5K2 (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:	Oxidizing solids (Category 3) Acute toxicity, Oral (Category 4) Acute toxicity, Dermal (Category 4) Skin irritation (Category 2) Eye irritation (Category 2A) Respiratory sensitisation (Category 1) Skin sensitisation (Category 1) Specific target organ toxicity - single exposure (Category 3) Acute aquatic toxicity (Category 3)
Label elements:	

Signal word:	DANGER
Hazard statements:	Hazard Statements H272 - May intensify fire; oxidizer H302 - Harmful if swallowed H312 – Harmful in contact with skin H315 - Causes skin irritation H317 - May cause an allergic skin reaction H320 - Causes eye irritation H334 - May cause allergy or asthma symptoms or breathing difficulties if inhaled H335 - May cause respiratory irritation
Precautionary statements:	**Precautionary Statements - Prevention** P210 - Keep away from heat/sparks/open flames/hot surfaces. No smoking. P220 - Keep/Store away from clothing/combustible materials P221 - Take any precaution to avoid mixing with combustibles P261 - Avoid breathing dust/ fume/ gas/ mist/ vapors/ spray P271 - Use only outdoors or in a well-ventilated area P264 - Wash face, hands and any exposed skin thoroughly after handling P280 - Wear protective gloves/ protective clothing P285 - In case of inadequate ventilation wear respiratory protection **Precautionary Statements - Response** P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing P337 + P313 - If eye irritation persists: Get medical advice/ attention P302 + P352 - IF ON SKIN: Wash with plenty of water. P333 + P313 - If skin irritation or rash occurs: Get medical advice/ attention P304 + P341 - IF INHALED: If breathing is difficult, remove 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 P301 + P312 - IF SWALLOWED: Call a POISON CENTER or doctor if you feel unwell P330 - Rinse mouth P370 + P378 - In case of fire: Use water for extinction **Precautionary Statements – Storage and Disposal** P403 + P233 - Store in a well-ventilated place. Keep container tightly closed. P501 Dispose of contents/container in accordance with local/regional/national/international regulations.
Other hazards:	Not available.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

Pure substance/ mixture: Pure substance

Ingredient name	CAS Number	Concentration (wt. %)
Ammonium Persulphate	7727-54-0	≥ 98.5 %

SECTION 4: FIRST-AID MEASURES

Description of first aid measures:

Ingestion	Do NOT induce vomiting. Call a physician or poison control center immediately. Rinse mouth. Drink 1 or 2 glasses of water.
Inhalation	Remove from exposure, lie down. If breathing is irregular or stopped, administer artificial respiration. Call a physician immediately.
Skin contact	Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. Get medical attention if irritation develops and persists.
Eye contact	Check for and remove any contact lenses. Immediately flush eyes with running water for at least 15 minutes, keeping eyelids open. Get medical attention if pain and irritation develops or persists.

Most important symptoms and effects, both acute and delayed:
Itching; Redness; Coughing and/ or wheezing
Inhalation: May be harmful if inhaled. Causes respiratory tract irritation.
Skin: Harmful if absorbed through skin. Causes skin irritation.
Eyes: Causes eye irritation.
Ingestion: Harmful if swallowed.

Indication of any immediate medical attention and special treatment needed: Treat symptomatically

SECTION 5: FIRE-FIGHTING MEASURES

Extinguishing media:	Use media appropriate for the surrounding fire.
Suitable	Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.
Unsuitable	Do not use carbon dioxide or other gas filled fire extinguishers; they will have little effect on decomposing persulphate.
Flash point:	Not Available.
Autoignition Temperature:	Not Available.
Special hazards arising from the substance:	Decomposes under fire conditions to release oxygen that intensifies the fire. Container explosion may occur under fire conditions.
Hazardous thermal decomposition products:	Nitrogen oxides (NOx), Sulphur oxides
Special protective equipment for fire-fighters:	Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

SECTION 6: ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures:	Use personal protective equipment. Avoid breathing vapours, mist or gas. Avoid dust formation. Ensure adequate ventilation.
Environmental precautions:	Should not be released into environment. Prevent from reaching drains, sewer, or waterway. Report releases as required by local and national authorities.
Methods and materials for containment and cleaning up:	Wear protective eyeware, gloves, and clothing. Refer to Section 8. Vacuum, shovel or pump waste into a drum and label contents for disposal. Avoid dust formation. Knock down dust with water spray. Store in closed container. Always obey local regulations. Keep in suitable closed containers for disposal. Refer to Section 13. If necessary use trained response staff or contractor.
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:	Keep away from heat and sources of ignition. No smoking. 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 ingest. Do not breathe vapor or mist. Avoid formation of dust and aerosols. Provide appropriate exhaust ventilation at places where dust is formed. Wear appropriate respirator when ventilation is inadequate. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use.
Conditions for safe storage:	Moisture sensitive. Keep in a dry place. Heat sensitive, may decompose when heated. Keep container tightly closed in a dry and well-ventilated place. Store in accordance with local regulations. Store in a segregated and approved area. Separate from acids, bases, reducing agents and combustibles. Store protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials, food and drink. Containers that have been opened must be resealed and kept upright. Do not store in unlabeled containers.
Incompatible materials:	Strong reducing agents, Combustible materials, Acids, Bases, Halides, Oxidizing agents, Powdered metals. Incompatible with powdered aluminum, iron, sodium peroxide. Moisture sensitive, may decompose on exposure to moist air or water.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

Ingredient	**Exposure limits**
Ammonium Persulphate	0.100000 mg/m^3 TWA, Canada. Alberta, Occupational Health and Safety Code (table 2: OEL). 0.100000 mg/m^3 TWAEV, Canada. Ontario OEL's. 0.100000 mg/m^3 TWA, Canada. Canada. British Columbia OEL 0.100000 mg/m^3 USA. ACGIH Threshold Limit Values (TLV) 0.1 mg/m^3 TWA, USA. ACGIH Threshold Limit Values (TLV)
Engineering controls:	Ensure adequate ventilation, especially in confined areas. Use mechanical exhaust or laboratory fumehood to avoid exposure.
Individual protection measures:	**Respiratory protection:** If exposure limits are exceeded or irritation is experienced, NIOSH/MSHA approved respiratory protection should be worn: particulate filtering face-piece respirators. Where risk assessment shows air-purifying respirators are appropriate use a full-face particle respirator type N100 (US) or type P3 (EN 143) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU). **Hand protection:** Handle with gloves. Protective gloves: Neoprene gloves, Polyvinylchloride, Natural Rubber. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands. This recommendation is advisory only and must be evaluated by an industrial hygienist and safety officer familiar with the specific situation of anticipated use by our customers. It should not be construed as offering an approval for any specific use scenario. **Eye protection** Face shield and safety glasses. Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU). **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:	White powder
Odor:	odorless
Odor threshold:	Not available.
pH:	2.3 - 4.0 (1% solution)

Melting point:	120 °C (Decomposes)
Flash point:	Not available.
Density:	1.982 g/cm³ (at 20 °C)
Oxidizing properties:	oxidizer
Evaporation rate:	Not available.
Flammability:	Not flammable.
Upper and lower flammability limits:	Not available.
Vapour pressure:	Not available.
Vapour density:	Not available.
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:	Stable at ambient temperature and under normal conditions of use
Chemical stability:	Stable at standard temperature and pressure.
Possibility of hazardous reactions:	Hazardous polymerization will not occur.
Conditions to avoid:	Exposure to moisture. May decompose on exposure to moist air or water. Excess heat, ignition sources, incompatible materials. May be shock sensitive and thermally unstable. Strong oxider.
Incompatible materials:	Strong reducing agents, Combustible materials, Acids, Bases, Halides, Oxidizing agents, Powdered metals. Incompatible with powdered aluminum, iron, sodium peroxide. Moisture sensitive, may decompose on exposure to moist air or water.
Hazardous decomposition products:	Hazardous decomposition products formed under fire conditions: Nitrogen oxides (NOx), Sulphur oxides.

SECTION 11: TOXICOLOGICAL INFORMATION

Toxicity data:	Ammonium Persulphate
Acute toxicity:	LD50 Oral 740 mg/kg (rat) LD50 Dermal > 2000 mg/kg (rat) LC50 Inhalation > 2.95 mg/L (rat) (4-hr)
Information on the likely routes of exposure:	Skin and Eyes: yes Inhalation: yes Ingestion: yes

Potential health effects (acute):	Irritation to eyes, skin and respiratory tract. Overexposure may be irritating to the respiratory system.
Target organ effects:	Eyes, Skin, Respiratory System. Sensitizing to skin and respiratory system.
Potential chronic health effects:	No information available.
Teratogenicity:	No information available.
Developmental effects:	No information available.
Fertility effects:	No information available.
Irritation/corrosion:	Irritation to eyes, skin and respiratory tract.

SECTION 12: ECOLOGICAL INFORMATION

Toxicity — Ammonium Persulfate (7727-54-0)

Toxicity to fish LC50
Oncorhynchus mykiss (rainbow trout) - 76 mg/l - 96 h

Toxicity to daphnia and other aquatic invertebrates
EC50 - Daphnia magna (Water flea) - 120 mg/l - 48 h

Other adverse effects: Harmful to aquatic life.
Persistence and degradability: Not available.
Bioaccumulative potential: Not available.

SECTION 13: DISPOSAL CONSIDERATIONS

Disposal methods: The generation of waste should be avoided or minimized wherever possible. This material, as supplied, is a hazardous waste according to federal regulations (40 CFR 261). It must undergo special treatment, e.g. at suitable disposal site, to comply with local regulations. Dispose of surplus and nonrecyclable products via a licensed waste disposal contractor. 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. **Contaminated packaging:** Dispose of as unused product.

SECTION 14: TRANSPORT INFORMATION

UN Number:	1444 (DOT, IMDG, IATA)
UN proper shipping name:	Ammonium persulfate (DOT, IATA) AMMONIUM PERSULPHATE (IMDG)
Transport hazard class:	5.1 (DOT, IMDG, IATA)
Packing group:	III (DOT, IMDG, IATA)
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 Superfund Amendments and Reauthorization Acts (SARA)	**SARA 313** Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product does not contain any chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372. **SARA 311/312 Hazard Categories** Acute health hazard: Yes Chronic health hazard: NO Fire hazard: Yes Sudden release of pressure hazard: NO Reactive Hazard: NO **Clean Water Act** This product does not contain any substances regulated as pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42). **CERCLA** This material, as supplied, does not contain any substances regulated as hazardous substances under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302) or the Superfund Amendments and Reauthorization Act (SARA) (40 CFR 355). There may be specific reporting requirements at the local, regional, or state level pertaining to releases of this material
Canada WMIS Statement:	This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the SDS contains all the information required by the CPR.
WHMIS Classification	WHMIS Hazard Class C - Oxidizing material – Oxidizer WHMIS Hazard Class D2A - Very Toxic Material Causing Other Toxic Effects – Respiratory sensitizer WHMIS Hazard Class D2B - Toxic Material Causing Other Toxic Effects - Skin sensitiser WHMIS Hazard Class E – Corrosive Material – Corrosive to metals, corrosive

SECTION 16: OTHER INFORMATION

Revision date: August 16, 2023

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.