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AMMONIUM PERCHLORATE**24 HOUR EMERGENCY PHONE: (435)865-5000**

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MATERIAL SAFETY DATA SHEET**SECTION I—PRODUCT IDENTIFICATION**

Chemical name: Ammonium Perchlorate	Common name: AP	Chemical Formula: NH ₄ ClO ₄
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SECTION II—HEALTH HAZARD INFORMATION AND FIRST AID PROCEDURES

Acute effects: Moderately toxic by ingestion and parenteral routes (injection).	Toxicity Data: Rat-oral LD ₅₀ = 4200 mg/kg Rat-par-LDLo = 3500 mg/kg Rabbit-oral LD ₅₀ = 1900 mg/kg Rabbit-par-LDLo = 750 mg/kg
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Chronic effects: No long-term health effects have been reported. Studies have shown that perchlorate inhibits iodine uptake in the thyroid gland. EPA is conducting a risk assessment to establish a Maximum Concentration Limit Goal for drinking water. Studies conducted occupationally have indicated no adverse health effects on workers exposed for years to perchlorate. Minimize dusting and use respiratory protection for environments where substantial dust is generated. Overexposure may result in limiting iodine uptake by the thyroid and development of goiter.

Carcinogen:	IARC: NO	NTP: NO	OSHA: NO
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Medical conditions aggravated by exposure:
 Excessive dust inhalation can aggravate respiratory conditions.

EMERGENCY FIRST AID PROCEDURES:

<u>Routes of exposure</u>	<u>Signs and symptoms of exposure:</u>	<u>Emergency and first aid procedures:</u>
SKIN:	May cause local irritation or stinging effect.	Wash exposed area immediately with plenty of water. Remove contaminated clothing and footwear.
INHALATION:	Airborne concentrations of ammonium perchlorate can aggravate pre-existing respiratory problems.	If experiencing breathing difficulties, move to fresh air. Administer oxygen if exposed person is unconscious. Never give anything by mouth to an unconscious person.
INGESTION:	Ingestion of large quantities has resulted in ataxia in small mammals.	Give water. Induce vomiting, keep airway clear. Seek medical attention.
EYES:	Irritation of the eyes will cause stinging effect.	Flush eyes with fresh water for at least 15 minutes and move exposed person to a non-contaminated area.

SECTION III—HAZARDOUS COMPONENTS AND OCCUPATIONAL EXPOSURE LIMITS

Hazardous components: AMMONIUM PERCHLORATE	CAS: 7790-98-9	OSHA PEL TWA: 15 mg/m ³ (Nuisance Dust)	ACGIH TWA: 10 mg/m ³ (Nuisance Dust)
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SECTION IV—PHYSICAL/CHEMICAL CHARACTERISTICS

Boiling point: N/A	Vapor pressure: N/A	Vapor Density: N/A	Specific Gravity (H₂O=1): 1.95
Melting point: Decomposes at 270 to 300°C		Evaporation rate: N/A	
Solubility in water: 20.8 g/100 ml at 20°C		Appearance and odor: White crystal, no odor.	

SECTION V—FIRE AND EXPLOSION DATA

Flash point (Method used): N/A Flammable limits: LEL: N/A UEL: N/A

Extinguishing media: Water

SPECIAL FIRE FIGHTING PROCEDURES:

Do not fight fires involving mixtures of ammonium perchlorate and fuels. Ammonium perchlorate is an oxidizing agent and may cause rapid combustion or explosions if mixed with fuels. Burning ammonium perchlorate produces chlorine and chlorine dioxide. Keep upwind or wear self-contained breathing apparatus when attempting to rescue.

SECTION VI—REACTIVITY DATA**STABILITY**Unstable: Stable:
X**Conditions to avoid:**

Do not mix with reducing agents, metal powders or powdered carbon. Avoid elevated temperatures over 270°C, which can cause spontaneous exothermic decomposition. Cloth fabric such as dust collector bags intimately contaminated with ammonium perchlorate is subject to ignition through friction or impact. High-energy static electricity may also serve as an ignition source.

Incompatibility (Materials to avoid): Sulfuric acid, powdered metals, and intimate mixtures with organics.

Hazardous decomposition or byproducts:
Chlorine and chlorine dioxide.Hazardous polymerization:
Hazardous polymerization will not occur.**SECTION VII—ENVIRONMENTAL PROCEDURES****Steps to be taken if material is released or spilled:**
Sweep up material and containerize. Clean contaminated floor surface with water.**Waste disposal method:**
Dispose of in accordance with local, state, and federal regulations.**SECTION VIII—SPECIAL PROTECTION / EXPOSURE CONTROL MEASURES****Ventilation requirements:**
Ventilate as necessary to minimize exposure levels. Inspect and clean ventilation systems regularly.**Eye protection:**
Wear safety glasses.**Protective gloves:**
Plastic, rubber or latex gloves are recommended. Leather or cotton gloves should not be used.**Respiratory protection:**
None generally required. Protect from nuisance dust, if necessary during handling or usage.**Other clothing and equipment:**
Wear impervious aprons or rain gear to reduce contamination of cotton or other fiber clothing.**Personal hygiene and work practices:**
Avoid contamination of cotton or other absorbent material. Do not wear any work clothing that has become contaminated with ammonium perchlorate. Remove contaminated clothing immediately and keep wet until thoroughly washed. Showering is recommended after handling any industrial chemical.**SECTION IX—PRECAUTIONS FOR SAFE HANDLING AND STORAGE****Handling and storage precautions:**
Store away from combustibles and flammables. Keep container closed when not in use. Control static electricity and other ignition sources. Store in dry areas away from sources of extreme heat.**Special mixing and handling instructions:**
Ground and bond process equipment. Mixing ammonium perchlorate with fuels of any type may result in rapid combustion or explosions. When handling materials contaminated with ammonium perchlorate such as dust collector bags or any other combustible material, thoroughly wet the bags with water before handling, keep the bags wet while handling, and use non-sparking tools or tools coated with non-sparking material if non-sparking tools are not available. **AVOID friction, impact, or static electricity ignition sources** when organic materials are contaminated with ammonium perchlorate. Fire resistant fabrics do not reduce the hazard.

SECTION X—TRANSPORTATION DATA AND ADDITIONAL INFORMATION

DOT shipping name:	Ammonium Perchlorate	UN number:	1442
DOT hazard class:	Oxidizer 5.1	CAS number:	7790-98-9

CAS = Chemical Abstract Service Number	TWA = 8-Hour Time Weighted Average
PEL = OSHA Permissible Exposure Limit	N/A = Not Applicable

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