

\*\*\*AMMONIUM BROMIDE\*\*\*

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MATERIAL SAFETY DATA SHEET

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SUBSTANCE IDENTIFICATION

SUBSTANCE: \*\*\*AMMONIUM BROMIDE\*\*\*

CAS-NUMBER 12124-97-9

TRADE NAMES/SYNONYMS:  
AMMONIUM BROMIDE ((NH<sub>4</sub>)BR); HYDROBROMIC ACID MONOAMMONIATE; A-650; NH<sub>4</sub>BR.

CHEMICAL FAMILY:  
INORGANIC SALT

MOLECULAR FORMULA: N-H<sub>4</sub>-BR

MOLECULAR WEIGHT: 97.96

CERCLA RATINGS (SCALE 0-3): HEALTH=1 FIRE=0 REACTIVITY=0 PERSISTENCE=0  
NFPA RATINGS (SCALE 0-4): HEALTH=1 FIRE=0 REACTIVITY=0

COMPONENTS AND CONTAMINANTS

COMPONENT: AMMONIUM BROMIDE

PERCENT: 100

OTHER CONTAMINANTS: NONE

EXPOSURE LIMITS:  
NO OCCUPATIONAL EXPOSURE LIMITS ESTABLISHED BY OSHA, ACGIH, OR NIOSH.

PHYSICAL DATA

DESCRIPTION: WHITE, ODORLESS, SLIGHTLY HYGROSCOPIC CRYSTALS OR GRANULES

MELTING POINT: 846 F (+52 C) SUBLIMES SPECIFIC GRAVITY: 2.4

VAPOR PRESSURE: 1 MMHG @ 198 C PH: SLIGHTLY ACIDIC

SOLUBILITY IN WATER: 97%

SOLVENT SOLUBILITY: SOLUBLE IN METHANOL, ETHANOL, ACETONE, SLIGHTLY SOLUBLE IN ETHER

FIRE AND EXPLOSION DATA

FIRE AND EXPLOSION HAZARD:  
NEGLECTIBLE FIRE HAZARD WHEN EXPOSED TO HEAT OR FLAME.

FIREFIGHTING MEDIA:  
DRY CHEMICAL, CARBON DIOXIDE, HALON, WATER SPRAY OR STANDARD FOAM  
(1987 EMERGENCY RESPONSE GUIDEBOOK, DOT P 5800.4).

FOR LARGER FIRES, USE WATER SPRAY, FOG OR STANDARD FOAM  
(1987 EMERGENCY RESPONSE GUIDEBOOK, DOT P 5800.4).

FIREFIGHTING:  
NO ACUTE HAZARD. MOVE CONTAINER FROM FIRE AREA IF POSSIBLE. AVOID BREATHING VAPORS OR DUSTS; KEEP UPWIND.

FIRE FIGHTING PHASES: ATTACK FIRE FREELY WITH WATER. WATER SPRAY WILL EFFECTIVELY REDUCE FUME AND IRRITANT GASES (NFPA 49, HAZARDOUS CHEMICALS DATA, 1975).

TOXICITY

AMMONIUM BROMIDE:  
MUTAGENIC DATA (RTECS).  
CARCINOGEN STATUS: NONE.  
THE TOXICITY OF AMMONIUM BROMIDE HAS NOT BEEN QUANTIFIED. IT IS AN EYE, SKIN, AND MUCOUS MEMBRANE IRRITANT. POISONING MAY AFFECT THE NERVOUS SYSTEM.

**HEALTH EFFECTS AND FIRST AID****INHALATION:****AMMONIUM BROMIDE:**

ACUTE EXPOSURE- DUSTS MAY CAUSE MUCOUS MEMBRANE IRRITATION. SYSTEMIC EFFECTS DUE TO INGESTION AND THE SUBSEQUENT EXCRETION OF THE BROMIDE ION THROUGH THE RESPIRATORY TRACT MAY CAUSE RHINITIS AND BRONCHIAL IRRITATION. PATHOLOGICAL FINDINGS INCLUDE PNEUMONIA AND PULMONARY EDEMA.  
CHRONIC EXPOSURE- NO DATA AVAILABLE.

FIRST AID- REMOVE FROM EXPOSURE AREA TO FRESH AIR IMMEDIATELY. IF BREATHING HAS STOPPED, PERFORM ARTIFICIAL RESPIRATION. KEEP PERSON WARM AND AT REST. TREAT SYMPTOMATICALLY AND SUPPORTIVELY. GET MEDICAL ATTENTION IMMEDIATELY.

**SKIN CONTACT:****AMMONIUM BROMIDE:**

ACUTE EXPOSURE- NO DATA AVAILABLE. MAY BE IRRITATING.  
CHRONIC EXPOSURE- NO DATA AVAILABLE ON LOCAL EFFECTS. SYSTEMIC POISONING DUE TO CHRONIC INGESTION MAY CAUSE ACNEIFORM, NODULAR, OR ERYTHEMATOUS RASH ON THE FACE AND HANDS.

FIRST AID- REMOVE CONTAMINATED CLOTHING AND SHOES IMMEDIATELY. WASH AFFECTED AREA WITH SOAP OR MILD DETERGENT AND LARGE AMOUNTS OF WATER UNTIL NO EVIDENCE OF CHEMICAL REMAINS (APPROXIMATELY 15-20 MINUTES). GET MEDICAL ATTENTION IMMEDIATELY.

**EYE CONTACT:****AMMONIUM BROMIDE:**

ACUTE EXPOSURE- NO DATA AVAILABLE. DUST MAY CAUSE IRRITATION. SYSTEMIC EFFECTS DUE TO BROMIDE INGESTION MAY INCLUDE INCREASED SIZE OF THE PUPIL OF THE EYE AND SUBNORMAL REACTIONS TO LIGHT OR ACCOMMODATION, VISUAL HALLUCINATIONS, AND DISTURBANCES OF COLOR VISION.  
CHRONIC EXPOSURE- REPEATED OR PROLONGED INGESTION MAY CAUSE LACRIMATION, BLEPHARITIS, AND CONJUNCTIVITIS DUE TO BROMIDE SECRETED BY THE LACRIMAL DUCTS.

FIRST AID- WASH EYES IMMEDIATELY WITH LARGE AMOUNTS OF WATER OR NORMAL SALINE. OCCASIONALLY LIFTING UPPER AND LOWER LIDS, UNTIL NO EVIDENCE OF CHEMICAL REMAINS (APPROXIMATELY 15-20 MINUTES). GET MEDICAL ATTENTION IMMEDIATELY.

**INGESTION:****AMMONIUM BROMIDE:**

ACUTE EXPOSURE- POISONING BY ACUTE EXPOSURE IS RARE BECAUSE BROMIDES IRRITATE THE GASTRIC MUCOSA WHEN INGESTED IN LARGE AMOUNTS AS A SINGLE DOSE AND CAUSE IMMEDIATE ABDOMINAL PAIN, NAUSEA, AND VOMITING. HOWEVER, IN THE EVENT OF KIDNEY DAMAGE, SYSTEMIC POISONING MAY OCCUR BY A SINGLE DOSE AND POSSIBLY CAUSE PARALYSIS AND COMA.  
CHRONIC EXPOSURE- REPEATED OR PROLONGED INGESTION OF BROMIDE MAY CAUSE "BROMISM" WHICH MOST FREQUENTLY AFFECTS THE GASTROINTESTINAL SYSTEM, THE CENTRAL NERVOUS SYSTEM, AND THE SKIN. GASTROINTESTINAL DISTURBANCES MAY INCLUDE NAUSEA AND VOMITING FROM GASTRIC IRRITATION, FOUL BREATH, ANOREXIA, WEIGHT LOSS, DEHYDRATION, AND CONSTIPATION. NEUROLOGICAL MANIFESTATIONS MAY INCLUDE HEADACHE, APATHY, SLURRED SPEECH, DECREASED MEMORY, DROWSINESS, IMPAIRED INTELLECTUAL CAPACITY AND EMOTIONAL CONTROL. TREMULOUSNESS, AND ATAXIA. DELUSIONS AND HALLUCINATIONS MAY OCCUR. HYPERACTIVITY, SLUGGISH OR ABSENT DEEP TENDON REFLEXES, GENERALIZED WEAKNESS, ABSENCE OF SEXUAL DESIRE, AND TRANSITORY SCHIZOPHRENIA HAVE ALSO BEEN REPORTED. OTHER EFFECTS MAY INCLUDE INTRACRANIAL PRESSURE, PAPILLEDEMA, AND HYPERTENSION. CONTINUED EXPOSURE MAY RESULT IN STUPOR AND COMA. SKIN MANIFESTATIONS MAY INCLUDE AN ACNEIFORM, NODULAR, OR ERYTHEMATOUS RASH. EARLY LESIONS MAY INCLUDE PAPULES, PUSTULES, EDEMATOUS PLAQUES, AND ULCERS. THE CLASSIC CUTANEOUS SIGN OF BROMISM IS A PUSTULE STUDDED, ECTHYMA-LIKE PLAQUE ON THE LEGS. DISCONTINUATION OF EXPOSURE WILL NORMALLY RESULT IN REVERSAL OF SYMPTOMS. MATERNAL EXPOSURE MAY RESULT IN HYPOTONIA IN NEONATES.

FIRST AID- TREAT SYMPTOMATICALLY AND SUPPORTIVELY. GET MEDICAL ATTENTION IMMEDIATELY. IF VOMITING OCCURS, KEEP HEAD LOWER THAN HIPS TO PREVENT ASPIRATION.

**ANTIDOTE:**

THE FOLLOWING ANTIDOTE HAS BEEN RECOMMENDED. HOWEVER, THE DECISION AS TO WHETHER THE SEVERITY OF POISONING REQUIRES ADMINISTRATION OF ANY ANTIDOTE AND ACTUAL DOSE REQUIRED SHOULD BE MADE BY QUALIFIED MEDICAL PERSONNEL.

**BROMIDE POISONING:**

GIVE SODIUM CHLORIDE, 1 GRAM ORALLY EVERY HOUR IN WATER OR AS SALT TABLETS; FOR MORE SEVERE INVOLVEMENT IN WHICH ORAL MEDICATION IS IMPOSSIBLE, GIVE NORMAL SALINE, 1 LITER EVERY 8 HOURS INTRAVENOUSLY TO A MAXIMUM OF 2 LITERS DAILY. SODIUM CHLORIDE THERAPY MUST BE CONTINUED UNTIL THE BLOOD BROMIDE LEVEL DROPS BELOW 50 MG/DL. SIMULTANEOUS ADMINISTRATION OF DIURETICS IS ALSO USEFUL (DREISBACH, HANDBOOK OF POISONING, 11TH ED.). ANTIDOTE SHOULD BE ADMINISTERED BY QUALIFIED MEDICAL PERSONNEL.

**REACTIVITY****REACTIVITY:**

MAY BECOME YELLOW WHEN EXPOSED TO AIR OR LIGHT.

**INCOMPATIBILITIES:****AMMONIUM BROMIDE:**

ACIDS: VIOLENT REACTION.  
ALKALIES: VIOLENT REACTION.  
BROMIDE TRIFLUORIDE: EXPLOSIVE REACTION.  
IODINE HEPTAFLUORIDE: VIOLENT REACTION.

**AMMONIUM BROMIDE**  
LEAD SALTS: VIOLENT REACTION.  
MERCURY: VIOLENT REACTION.  
POTASSIUM: EXPLOSIVE REACTION.  
SILVER: VIOLENT REACTION.

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**DECOMPOSITION:**  
MAY RELEASE CORROSIVE FUMES OF AMMONIA, HYDROGEN BROMIDE, AND OXIDES OF NITROGEN UNDER THERMAL DECOMPOSITION.

**POLYMERIZATION:**  
HAZARDOUS POLYMERIZATION HAS NOT BEEN REPORTED TO OCCUR UNDER NORMAL TEMPERATURES AND PRESSURES.

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**STORAGE AND DISPOSAL**

OBSERVE ALL FEDERAL, STATE AND LOCAL REGULATIONS WHEN STORING OR DISPOSING OF THIS SUBSTANCE. FOR ASSISTANCE, CONTACT THE DISTRICT DIRECTOR OF THE ENVIRONMENTAL PROTECTION AGENCY.

**STORAGE**

PROTECT AGAINST PHYSICAL DAMAGE. STORE IN DRY LOCATION. SEPARATE FROM ACIDS AND ALKALIS (NFPA 49, HAZARDOUS CHEMICALS DATA, 1975).

STORE AWAY FROM INCOMPATIBLE SUBSTANCES.

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CONDITIONS TO AVOID

PROTECT AGAINST PHYSICAL DAMAGE. STORE IN DRY LOCATION. SEPARATE FROM ACIDS AND ALKALIES.

USUAL SHIPPING CONTAINERS:  
400-POUND BARRELS, 25-, 50-, 150-POUND DRUMS  
(NFPA 49, HAZARDOUS CHEMICALS DATA, 1975).

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SPILL AND LEAK PROCEDURES

OCCUPATIONAL SPILL:  
SWEEP UP AND PLACE IN SUITABLE CLEAN, DRY CONTAINERS FOR RECLAMATION OR LATER DISPOSAL. DO NOT FLUSH WITH WATER. KEEP UNNECESSARY PEOPLE AWAY.

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**PROTECTIVE EQUIPMENT**

**VENTILATION:**  
PROVIDE GENERAL DILUTION VENTILATION.

**RESPIRATOR:**  
THE SPECIFIC RESPIRATOR SELECTED MUST BE BASED ON THE CONTAMINATION LEVELS FOUND IN THE WORK PLACE. MUST NOT EXCEED THE WORKING LIMITS OF THE RESPIRATOR AND BE JOINTLY APPROVED BY THE NATIONAL INSTITUTE FOR OCCUPATIONAL SAFETY AND HEALTH AND THE MINE SAFETY AND HEALTH ADMINISTRATION.  
THE FOLLOWING RESPIRATORS ARE RECOMMENDED BASED ON THE DATA FOUND IN THE PHYSICAL DATA, HEALTH EFFECTS AND TOXICITY SECTIONS. THEY ARE RANKED IN ORDER FROM MINIMUM TO MAXIMUM RESPIRATORY PROTECTION:

DUST AND MIST RESPIRATOR WITH A FULL FACEPIECE.

AIR-PURIFYING FULL FACEPIECE RESPIRATOR WITH A HIGH-EFFICIENCY PARTICULATE FILTER.

POWERED AIR-PURIFYING RESPIRATOR WITH A TIGHT-FITTING FACEPIECE AND HIGH-EFFICIENCY PARTICULATE FILTER.

TYPE 'C' SUPPLIED-AIR RESPIRATOR WITH A FULL FACEPIECE OPERATED IN PRESSURE-DEMAND OR OTHER POSITIVE PRESSURE MODE OR WITH A FULL FACEPIECE, HELMET OR HOOD OPERATED IN CONTINUOUS-FLOW MODE.

SELF-CONTAINED BREATHING APPARATUS WITH A FULL FACEPIECE OPERATED IN PRESSURE-DEMAND OR OTHER POSITIVE PRESSURE MODE.

FOR FIREFIGHTING AND OTHER IMMEDIATELY DANGEROUS TO LIFE OR HEALTH CONDITIONS:

SELF-CONTAINED BREATHING APPARATUS WITH FULL FACEPIECE OPERATED IN PRESSURE DEMAND OR OTHER POSITIVE PRESSURE MODE.

SUPPLIED-AIR RESPIRATOR WITH FULL FACEPIECE AND OPERATED IN PRESSURE-DEMAND OR OTHER POSITIVE PRESSURE MODE IN COMBINATION WITH AN AUXILIARY SELF-CONTAINED BREATHING APPARATUS OPERATED IN PRESSURE-DEMAND OR OTHER POSITIVE PRESSURE MODE.

**CLOTHING:**  
EMPLOYEE MUST WEAR APPROPRIATE PROTECTIVE (IMPERVIOUS) CLOTHING AND EQUIPMENT TO PREVENT REPEATED OR PROLONGED SKIN CONTACT WITH THIS SUBSTANCE.

**GLOVES:**  
EMPLOYEE MUST WEAR APPROPRIATE PROTECTIVE GLOVES TO PREVENT CONTACT WITH THIS SUBSTANCE.



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**EYE PROTECTION:**

EMPLOYEE MUST WEAR SPLASH-PROOF OR DUST-RESISTANT SAFETY GOGGLES TO PREVENT EYE CONTACT WITH THIS SUBSTANCE. CONTACT LENSES SHOULD NOT BE WORN.

AUTHORIZED - FISHER SCIENTIFIC GROUP, INC.

CREATION DATE: 10/30/84

REVISION DATE: 03/15/89

**-ADDITIONAL INFORMATION-**

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