ATTN: SAFETY DIRECTOR
UNIV OF WISC-WHITEWATER
PURCHASING OFFICE
800 W MAIN ST
WHITEWATER WI 53190-1705

MATERIAL SAFETY DATA SHEET

SECTION 1. - - - - - - CHEMICAL IDENTIFICATION- - - - - -
PRODUCT #: P3896
NAME: PIPERAZINE ANHYDROUS

SECTION 2. - - - - COMPOSITION/INFORMATION ON INGREDIENTS - - - -
CAS #: 110-65-0
MF: C4H10N2
SYNONYMS:
ANTIREN * 1,4-DIETHYLENEDIAMINE * DISPERMINE * HEXAHYDRO-1,4-DIAZINE *
HEXAHYDROPYRIMAZINE * LUMBRICAL * PIPERAZIDINE * PIPERAZIN (GERMAN) *
PIPERAZINE, ANHYDROUS * PYRAZINE HEXAHYDROIDE * PYRAZINE, HEXAHYDRO- *
UN2579 (DDT) *

SECTION 3. - - - - HAZARDS IDENTIFICATION - - - -
LABEL PRECAUTIONARY STATEMENTS
CORROSIVE
CAUSES BURNS.
HARMFUL BY INHALATION, IN CONTACT WITH SKIN AND IF SWALLOWED.
MAY CAUSE SENSITIZATION BY INHALATION AND SKIN CONTACT.
POSSIBLE RISK OF IRREVERSIBLE EFFECTS.
POSSIBLE MUTAGEN.
IN CASE OF CONTACT WITH EYES, RINSE IMMEDIATELY WITH PLENTY OF
WATER AND SEEK MEDICAL ADVICE.
TAKE OFF IMMEDIATELY ALL CONTAMINATED CLOTHING.
WEAR SUITABLE PROTECTIVE CLOTHING, GLOVES AND EYE/FACE
PROTECTION.

SECTION 4. - - - - FIRST-AID MEASURES- - - - - -
IN CASE OF CONTACT, IMMEDIATELY FLUSH EYES OR SKIN WITH copious
AMOUNTS OF WATER FOR AT LEAST 15 MINUTES WHILE REMOVING CONTAMINATED
CLOTHING AND SHOES.
ASSURE ADEQUATE FLUSHING OF THE EYES BY SEPARATING THE EYELIDS
WITH FINGERS.
IF INHALED, REMOVE TO FRESH AIR. IF NOT BREATHING GIVE ARTIFICIAL
RESPIRATION. IF BREATHING IS DIFFICULT, GIVE OXYGEN.
IF SWALLOWED, WASH OUT MOUTH WITH WATER PROVIDED PERSON IS CONSCIOUS.
CALL A PHYSICIAN.
WASH CONTAMINATED CLOTHING BEFORE REUSE.
DISCARD CONTAMINATED SHOES.

CONTINUED ON NEXT PAGE
SECTION 5. --- --- --- --- --- --- FIRE FIGHTING MEASURES --- --- --- --- ---

EXTINGUISHING MEDIA
WATER SPRAY
CARBON DIOXIDE, DRY CHEMICAL POWDER OR APPROPRIATE FOAM.

SPECIAL FIREFIGHTING PROCEDURES
WEAR SELF-CONTAINED BREATHING APPARATUS AND PROTECTIVE CLOTHING TO
PREVENT CONTACT WITH SKIN AND EYES.

SECTION 6. --- --- --- --- --- --- ACCIDENTAL RELEASE MEASURES--- --- --- --- ---

WEAR SELF-CONTAINED BREATHING APPARATUS, RUBBER BOOTS AND HEAVY
RUBBER GLOVES.
Sweep up, place in a bag and hold for waste disposal.
Avoid raising dust.
Ventilate area and wash spill site after material pickup is complete.

SECTION 7. --- --- --- --- --- --- HANDLING AND STORAGE --- --- --- --- ---

REFER TO SECTION 8.

SECTION 8. --- --- --- --- --- --- EXPOSURE CONTROLS/PERSOAL PROTECTION --- --- --- --- ---

WEAR APPROPRIATE NIOSH/MSHA-APPROVED RESPIRATOR, CHEMICAL-RESISTANT
GLOVES, SAFETY GOGGLES, OTHER PROTECTIVE CLOTHING.
SAFETY SHOWER AND EYE BATH.
USE ONLY IN A CHEMICAL FUME HOOD.
DO NOT BREATHE DUST.
DO NOT GET IN EYES, ON SKIN, OR CLOTHING.
AVOID PROLONGED OR REPEATED EXPOSURE.
WASH THOROUGHLY AFTER HANDLING.
CORROSIVE.
SENSITIZER.
POTENTIAL MUTAGEN.
KEEP TIGHTLY CLOSED.
LIGHT SENSITIVE.
HYDROSCOPIC.
STORE UNDER NITROGEN.
STORE IN A COOL DRY PLACE.

CONTINUED ON NEXT PAGE
MATERIAL SAFETY DATA SHEET

PRODUCT #: P3896
MF #: C6H10N2
NAME: PIPERAZINE ANHYDROUS

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE AND ODOR:
MOIST WHITE CRYSTALS
BOILING POINT: 145°C TO 146°C
MELTING POINT: 108°C TO 110°C
FLASHPOINT: 229°F
UPPER EXPLOSION LEVEL: 14% VOL
LOWER EXPLOSION LEVEL: 0.8% VOL

SECTION 10. STABILITY AND REACTIVITY

INCOMPATIBILITIES:
STRENGTH ACIDIZING AGENTS
STRENGTH ACIDS
ACID CHLORIDES
ACID ANHYDRIDES
MAY DISCOLOR ON EXPOSURE TO LIGHT
PROTECT FROM MOISTURE
Hazardous Combustion or Decomposition Products:
TOXIC FUMES OF:
CARBON MONOXIDE, CARBON DIOXIDE
NITROGEN OXIDES

SECTION 11. TOXICOLOGICAL INFORMATION

ACUTE EFFECTS:
HARMFUL IF SWALLOWED, INHALED, OR ABSORBED THROUGH SKIN.
MATERIAL IS EXTREMELY DESTRUCTIVE TO TISSUE OF THE AQUEOUS MEMBRANES
AND UPPER RESPIRATORY TRACT, EYES AND SKIN.
INHALATION MAY BE FATAL AS A RESULT OF SPHINX, INFLAMMATION AND EDEMA
OF THE NASOPHARYNX AND BRONCHI, CHEMICAL PNEUMONITIS AND PULMONARY EDEMA.
SYMPTOMS OF EXPOSURE MAY INCLUDE BURNING SENSATION, COUGHING,
WHEEZING, LARYNGITIS, SHORTNESS OF BREATH, HEADACHE, NAUSEA AND
VOMITING.
MAY CAUSE ALLERGIC RESPIRATORY AND SKIN REACTIONS.
REPEATED EXPOSURE MAY CAUSE ASTHMA.

CHRONIC EFFECTS:
LABORATORY EXPERIMENTS HAVE SHOWN MUTAGENIC EFFECTS.

CONTINUED ON NEXT PAGE
PRODUCT #: P3896
NAME: PIPERAZINE ANHYDROUS

RTCS NO.: TK7800000
PIPERAZINE (DOT)

IRRITATION DATA
SKN-RAT 500 MG OPEN MLD
EYE-RAT 250 UG SEV
EYE-RAT 250 UG/24 H SEV

TOXICITY DATA
LD50-RAT 1900 MG/KG
LD50-RAT 3700 MG/KG
LD50-RAT 1340 MG/KG
LD50-RAT> 2500 MG/KG
LD50-MUS 600 MG/KG
LD50-MUS 5400 MG/KG
LD50-MUS 1900 MG/KG
LD50-MUS 1180 MG/KG
SKN-RAT 1900 ML/KG

TARGET ORGAN DATA
BEHAVIORAL (SLEEP)
BEHAVIORAL (EXCITEMENT)
BEHAVIORAL (CHANGE IN MOTOR ACTIVITY)
BEHAVIORAL (MUSCLE CONTRACTION OR SPASTICITY)
GASTROINTESTINAL (NAUSEA OR VOMITING)
ONLY SELECTED REGISTRY OF TOXIC EFFECTS OF CHEMICAL SUBSTANCES
(RTECS) DATA IS PRESENTED HERE. SEE ACTUAL ENTRY IN RTECS FOR
COMPLETE INFORMATION.

SECTION 12: ECOLOGICAL INFORMATION
DATA NOT YET AVAILABLE.

SECTION 13: DISPOSAL CONSIDERATIONS
DISSOLVE OR MIX THE MATERIAL WITH A COMBUSTIBLE SOLVENT AND BURN IN A
CHEMICAL INCINERATOR EQUIPPED WITH AN AFTERBURNER AND SCRUBBER.
OBSERVE ALL FEDERAL, STATE AND LOCAL ENVIRONMENTAL REGULATIONS.

SECTION 14: TRANSPORT INFORMATION
CONTACT SIGMA CHEMICAL COMPANY FOR TRANSPORTATION INFORMATION.

SECTION 15: REGULATORY INFORMATION
CONTINUED ON NEXT PAGE
MATERIAL SAFETY DATA SHEET

PRODUCT #: P3896
MF: C6H10N2
NAME: PIPERAZINE ANHYDROUS

CUST#: 2-097-94816
PO#: UNE53917

REVIEWS, STANDARDS, AND REGULATIONS:
- OEL-FINLAND: TWA 1 mg/m³; STEL 5 mg/m³; SKIN: JAN93
- OEL-SWEDEN: TWA 0.1 ppm (0.3 mg/m³); STEL 0.3 ppm (1 mg/m³) JAN93
- OEL IN BULGARIA, COLOMBIA, JORDAN, KOREA CHECK ACGIH TLV
- OEL IN NEW ZEALAND, SINGAPORE, VIETNAM CHECK ACGIH TLV
- NOHS 1974: HZD 84705; NIS 4; TNF 132; NUS 11; TNE 2512
- NOES 1983: HZD 84705; NIS 8; TNF 396; NUS 24; TNE 3483; TFE 2318
- EPA TSCA CHEMICAL INVENTORY, JUNE 1993
- EPA TSCA TEST SUBMISSION (TSCATS) DATA BASE, JULY 1994

SECTION 16. OTHER INFORMATION

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