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\*\*GLYCINE\*\*  
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MATERIAL SAFETY DATA SHEET

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CHEMICAL DIVISION  
1 REAGENT LANE  
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SUBSTANCE IDENTIFICATION

SUBSTANCE: \*\*GLYCINE\*\*

CAS-NUMBER 56-40-6

TRADE NAMES/SYNONYMS:  
AMINOACETIC ACID; 2-AMINOETHANOIC ACID; AMINOETHANOIC ACID; GLY; GLYCOCOLL;  
GLYCOSTHENE; G-46; BP381; C2H5NO2; ACC10490

CHEMICAL FAMILY:  
AMINO ACID

MOLECULAR FORMULA: H2-N-C-H2-C-O-O-H

MOLECULAR WEIGHT: 75.07

CERCLA RATINGS (SCALE 0-3): HEALTH=2 FIRE=1 REACTIVITY=0 PERSISTENCE=0  
NFPA RATINGS (SCALE 0-4): HEALTH=1 FIRE=1 REACTIVITY=0

COMPONENTS AND CONTAMINANTS

COMPONENT: GLYCINE PERCENT: 100.0  
CAS# 56-40-6

OTHER CONTAMINANTS: NONE

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

PHYSICAL DATA

DESCRIPTION: ODORLESS, COLORLESS TO WHITE, MONOCLINIC CRYSTALS WITH A SWEET

TASTE. MELTING POINT: 504 F (262 C) DECOMPOSES SPECIFIC GRAVITY: 1.607

PH: 4.0 @ 1.4% SOLUTION SOLUBILITY IN WATER: 25% @ 25 C

SOLVENT SOLUBILITY: VERY SLIGHTLY SOLUBLE IN ETHER AND PYRIDINE; INSOLUBLE  
IN ALCOHOL.

FIRE AND EXPLOSION DATA

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

DUST-AIR MIXTURES MAY IGNITE OR EXPLODE.

FIREFIGHTING MEDIA:  
DRY CHEMICAL, CARBON DIOXIDE, WATER SPRAY OR REGULAR FOAM  
(1990 EMERGENCY RESPONSE GUIDEBOOK, DOT P 5800.5).

FOR LARGER FIRES, USE WATER SPRAY, FOG OR REGULAR FOAM  
(1990 EMERGENCY RESPONSE GUIDEBOOK, DOT P 5800.5).

FIREFIGHTING:  
MOVE CONTAINER FROM FIRE AREA IF YOU CAN DO IT WITHOUT RISK. DO NOT SCATTER  
SPILLED MATERIAL WITH HIGH-PRESSURE WATER STREAMS. DIKE FIRE-CONTROL WATER FOR  
LATER DISPOSAL (1990 EMERGENCY RESPONSE GUIDEBOOK, DOT P 5800.5, GUIDE  
PAGE 31).

USE AGENTS SUITABLE FOR TYPE OF SURROUNDING FIRE. AVOID BREATHING HAZARDOUS  
VAPORS, KEEP UPWIND.

TOXICITY

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GLYCINE:  
TOXICITY DATA: 7930 MG/KG ORAL-RAT LD50; 4920 MG/KG ORAL-MOUSE LD50; 5200  
MG/KG SUBCUTANEOUS-RAT LD50; 5060 MG/KG SUBCUTANEOUS-MOUSE LD50; 2600 MG/KG  
INTRAVENOUS-RAT LD50; 2370 MG/KG INTRAVENOUS-MOUSE LD50; 3000 MG/KG  
INTRAVENOUS-CAT LDLO; 4450 MG/KG INTRAPERITONEAL-MOUSE LD50.  
CARCINOGEN STATUS: NONE  
ACUTE TOXICITY LEVEL: SLIGHTLY TOXIC BY INGESTION.  
TARGET EFFECTS DATA: NO DATA AVAILABLE.

HEALTH EFFECTS AND FIRST AID

INHALATION:

GLYCINE:  
ACUTE EXPOSURE- INHALATION OF DUST MAY CAUSE COUGHING.  
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:

GLYCINE:  
ACUTE EXPOSURE- MAY CAUSE IRRITATION. SKIN ABSORPTION MAY OCCUR.  
CHRONIC EXPOSURE- PROLONGED OR REPEATED CONTACT MAY CAUSE IRRITATION.

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:

GLYCINE:  
ACUTE EXPOSURE- CONTACT MAY CAUSE REDNESS AND IRRITATION.  
CHRONIC EXPOSURE- NO DATA AVAILABLE.

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:

GLYCINE:  
ACUTE EXPOSURE- INGESTION OF LARGE QUANTITIES MAY CAUSE NAUSEA.  
CHRONIC EXPOSURE- WHEN FED TO CHICKS, LARGE AMOUNTS OF GLYCINE HAVE BEEN  
FOUND TO CAUSE A PECULIAR ENLARGEMENT OF THE EYEBALLS.

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

ANTIDOTE:

NO SPECIFIC ANTIDOTE. TREAT SYMPTOMATICALLY AND SUPPORTIVELY.

REACTIVITY

REACTIVITY:

STABLE UNDER NORMAL TEMPERATURES AND PRESSURES.

INCOMPATIBILITIES:

GLYCINE:  
ALKALIES (STRONG): INCOMPATIBLE.  
OXIDIZERS (STRONG): FIRE AND EXPLOSION DATE.

DECOMPOSITION:

THERMAL DECOMPOSITION PRODUCTS MAY INCLUDE CORROSIVE FUMES OF AMMONIA, AND  
TOXIC OXIDES OF NITROGEN AND CARBON.

POLYMERIZATION:

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

STORAGE AND DISPOSAL

OBSERVE ALL FEDERAL, STATE AND LOCAL REGULATIONS WHEN STORING OR DISPOSING  
OF THIS SUBSTANCE.

\*\*STORAGE\*\*

STORE AWAY FROM INCOMPATIBLE SUBSTANCES.

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CONDITIONS TO AVOID

MAY BURN BUT DOES NOT IGNITE READILY. AVOID CONTACT WITH STRONG OXIDIZERS,  
EXCESSIVE HEAT, SPARKS, OR OPEN FLAME.

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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 SPILLED MATERIAL INTO SEWER. KEEP UNNECESSARY PEOPLE AWAY.

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PROTECTIVE EQUIPMENT

VENTILATION:  
PROVIDE LOCAL EXHAUST VENTILATION. VENTILATION EQUIPMENT MUST BE EXPLOSION PROOF.

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

ANY DUST AND MIST RESPIRATOR.

ANY AIR-PURIFYING RESPIRATOR WITH A HIGH-EFFICIENCY PARTICULATE FILTER.

ANY POWERED AIR-PURIFYING RESPIRATOR WITH A DUST AND MIST FILTER.

ANY POWERED AIR-PURIFYING RESPIRATOR WITH A HIGH-EFFICIENCY PARTICULATE FILTER.

ANY TYPE 'C' SUPPLIED-AIR RESPIRATOR OPERATED IN THE PRESSURE-DEMAND OR OTHER POSITIVE PRESSURE OR CONTINUOUS-FLOW MODE.

ANY SELF-CONTAINED BREATHING APPARATUS.

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

ANY SELF-CONTAINED BREATHING APPARATUS THAT HAS A FULL FACEPIECE AND IS OPERATED IN A PRESSURE-DEMAND OR OTHER POSITIVE-PRESSURE MODE.

ANY SUPPLIED-AIR RESPIRATOR THAT HAS A FULL FACEPIECE AND IS OPERATED IN A 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.

EYE PROTECTION:  
EMPLOYEE MUST WEAR SPLASH-PROOF OR DUST-RESISTANT SAFETY GOGGLES TO PREVENT EYE CONTACT WITH THIS SUBSTANCE.

EMERGENCY EYE WASH: WHERE THERE IS ANY POSSIBILITY THAT AN EMPLOYEE'S EYES MAY BE EXPOSED TO THIS SUBSTANCE, THE EMPLOYER SHOULD PROVIDE AN EYE WASH FOUNTAIN WITHIN THE IMMEDIATE WORK AREA FOR EMERGENCY USE.

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