

MATERIAL SAFETY DATA SHEET

PRODUCT NAME: METHENAMINE FOR TIMED BURNING
CHEMICAL NAME: HEXAMETHYLENETETRAMINE (HEXAMINE)
HMIS CODES: H F R P 3 1 1 C

SECTION I-MANUFACTURER IDENTIFICATION=====

MANUFACTURER'S NAME: VESTA PHARMACEUTICALS, INC
ADDRESS: 8768 E. 33RD STREET, INDIANAPOLIS, IN 46226
EMERGENCY PHONE: 317-895-9000 INFORMATION PHONE: 317-895-9000
DATE PREPARED: 3/8/02 NAME OF PREPARER: DR. GEORGE KITE

SECTION II-HAZARDOUS INGREDIENTS/SARA III INFORMATION=====

<u>HAZARDOUS COMPONENTS</u>	<u>CAS NUMBER</u>	<u>OSHA PEL</u>	<u>ACGIH TLV</u>	<u>OCCUP. EXP. LIM.</u>	<u>OTHER</u>	<u>VAP. PRESS.</u>	<u>WT. %</u>
Methenamine	100-97-0	15 mg/ccm	10 mg/cubic meter*		N/A	N/A	100%

*No toxic chemical(s) subject to the reporting requirements of section 313 of Title II and of 40 CFR 372 are present.

SECTION III-PHYSICAL/CHEMICAL CHARACTERISTICS=====

BOILING RANGE: 280 C (SUBLIMES) SPECIFIC GRAVITY (H₂O=1): 1.27 @ 25 C
MOLECULAR WEIGHT: 140.2 APPEARANCE AND ODOR: HIGH-MELTING,
MELTING POINT: 263 C WHITE, FREE FLOWING, GRANULAR SOLID
PH INFORMATION: 8-8.5 WITH STRONG AMINE ODOR.
SOLUBILITY IN WATER: 46% @ 25 C

SECTION IV-FIRE AND EXPLOSION HAZARD DATA=====

FLASH POINT: (CLOSED CUP): 250 C (482 F)
FLAMMABLE LIMITS IN AIR BY VOLUME: LOWER: N/A, UPPER: N/A
EXTINGUISHING MEDIA: FOAM, CO₂, DRY CHEMICAL FOAM AND WATER SPRAY

UNUSUAL FIRE AND EXPLOSION HAZARDS: CONCENTRATED DUST MAY FORM A CLOUD AND FORM AN EXPLOSION HAZARD. WEAR SELF-CONTAINED BREATHING APPARATUS (SCBA) AND FULL TURN-OUT GEAR TO FIGHT FIRES.

SECTION V-REACTIVITY DATA=====

STABILITY: STABLE

INCOMPATABILITY (MATERIALS TO AVOID): HEXAMINE WILL HYDROLYZE IN THE PRESENCE OF ACIDS OR ACIDIC ENVIRONMENTS, UNDER THE CONDITIONS OF 150-300 C AND THE PRESENCE OF WATER AND FREE AMMONIA AND FORMALDEHYDE MAY BE LIBERATED. THIS PRODUCT IS ALSO INCOMPATIBLE WITH STRONG OXIDIZING AGENTS.

MSDS

HAZARDOUS DECOMPOSITION OR BYPRODUCTS: HYDROGEN CYANIDE AT TEMPERATURE >800 C AS WELL AS CARBON MONOXIDE, AMMONIA, CARBON DIOXIDE, FORMALDEHYDE AND NITROGEN OXIDES.

HAZARDOUS POLYMERIZATION: WILL NOT OCCUR

SECTION VI-HEALTH HAZARD DATA=====

INHALATION HEALTH RISKS AND SYMPTOMS OF EXPOSURE: HAZARD OF ENTRY THROUGH SKIN, EYES, INHALATION AND INGESTION. DUST MAY CAUSE IRRITATION OF THE NOSE, MUCOUS MEMBRANES AND UPPER RESPIRATORY TRACT.

SKIN AND EYE CONTACT HEALTH RISKS AND SYMPTOMS OF EXPOSURE: SKIN IRRITANT AND SENSITIZER. MAY CAUSE ALLERGIC SKIN REACTION.

SKIN ABSORPTION HEALTH RISKS AND SYMPTOMS OF EXPOSURE: PROLONGED SKIN EXPOSURE MAY CAUSE DERMATITIS.

INGESTION HEALTH RISKS AND SYMPTOMS OF EXPOSURE:

TOXICITY RATINGS:

INTRAVENOUS-RAT LD50	9200 MG/KG
SUBCUTANEOUS-MOUSE LDLO	450 MG/KG
ORAL-MOUSE LDLO	512 MG/KG

HEALTH HAZARDS (ACUTE AND CHRONIC): HEXAMINE IS A KNOWN SKIN IRRITANT AND SENSITIZER. PROLONGED SKIN CONTACT MAY PRODUCE A RASH TO THE AFFECTED AREA (IN PARTICULAR THE WRISTS, ANKLES, BELTLINE, AND COLLAR AREA OF THE NECK) SIMILAR IN APPEARANCE TO POISON IVY. HEXAMINE MAY DECOMPOSE TO FORMALDEHYDE IN THE PRESENCE OF PERSPIRATION (SLIGHTLY ACIDIC Ph 4-6.5). THE FORMALDEHYDE IS TRAPPED IN THE SKIN PORES AND IS THEN OXIDIZED TO FORMIC ACID WHICH IS BELIEVED TO CAUSE THE SKIN RASH.

CARCINOGENICITY: NTP?-NO, IARC MONOGRAPHS?-NO, OSHA REGULATED?-NO

MEDICAL CONDITIONS GENERALLY AGGRAVATED BY EXPOSURE: RESPIRATORY PROBLEMS, ALLERGENIC OR SENSITIVE SKIN.

EMERGENCY AND FIRST AID PROCEDURES:

INHALATION: REMOVE TO FRESH AIR. IF NOT BREATHING, GIVE CPR.

EYES: FLUSH WITH WATER FOR 15 MINUTES, SEEK MEDICAL ATTENTION.

SKIN: WASH WITH SOAP AND WATER, REMOVE CONTAMINATED CLOTHING.

INGESTION: INDUCE VOMITING BY GIVING VICTIM (2) GLASSES OF WATER AND PRESSING TWO FINGERS DOWN THE VICTIMS THROAT.

MSDS

SECTION VII-PRECAUTIONS FOR SAFE HANDLING AND USE=====

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED: ADD INDUSTRIAL ABSORBENT. SWEEP OR SCOOP UP WITH NON-SPARK EQUIPMENT. KEEP AWAY FROM FLAMES. DO NOT ALLOW TO ENTER STREAMS OR SEWERS.

WASTE DISPOSAL METHOD: CONTACT AUTHORIZED WASTE DISPOSAL COMPANY FOR INCENERATION OR SOLIDIFICATION AND LANDFILLING. RINSE EMPTY DRUMS TO INSURE NO COMBUSTIBLE MATERIAL REMAINS. DO NOT RPRESSURIZE, CUT, WELD, DRILL, GRIND ANR EXPOSE EMPTY CONTAINERS TO HEAT. “EMPTY” DRUMS SHOULD BE COMPLETELY DRAINED, BUNGED AND RETURNED TO A DRUM RECONDITIONER.

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING: STORE IN COOL, WELL-VENTILATED AREA AWAY FROM OPEN FLAMES OR SOURCES OF IGNITION. USE NON-SPARKING EQUIPMENT AND EXPLOSION-PROOF MOTORS.

OTHER PRECAUTIONS: AVOID PROLONGED SKIN CONTACT. AVOID BREATHING DUSTS.

SECTION VIII-CONTROL MEASURES=====

RESPIRATORY PROTECTION: NOT NORMALY REQUIRED. USE CHEMICAL RESPIRATOR IF FINE DUSTS ARE GENERATED.

VENTILATION: EXPLOSION-PROOF RECOMMENDED. LOCAL EXAUST RECOMMENDED.

PROTECTIVE CLOVES: RECOMMENDED CHEMICAL RESISTANT.

EYE PROTECTION: RECOMMENDED SPLASH GOGGLES.

OTHER PROTECTIVE CLOTHING OR EQUIPMENT: OPTIONAL APRON WHERE SPLASHING OCCURS.

WORK/HYGIENIC PRACTICES: SAFETY SHOWERS AND EYE WASH STATIONS SHOULD BE PROVIDED IN THE WORKPLACE.

SECTION IX-DISCLAIMER=====

DISCLAIMER: TO THE BEST OF OUR KNOWLEDGE, THE INFORMATION CONTAINED HEREIN IS ACCURATE, OBTAINED FROM SOURCES BELIEVED BY VESTA PHARMACEUTICALS TO BE ACCURATE.