MATERIAL SAFETY DATA SHEET (MSDS)

EFFECTIVE DATE: SEPTEMBER 1989
SUPERCEDES DATE: NOVEMBER 8, 1985

PREPARED IN ACCORDANCE WITH OSHA HAZARD COMMUNICATION RULE 29CFR PART 1910.

PRODUCT IDENTITY:

PRODUCT NAME: SEPRA CLEAR II
PRODUCT NUMBER(S): 51283

INGREDIENTS WITH KNOWN HEALTH HAZARDS (COMPRISING 1% OR MORE; 0.1% IF A POTENTIAL CARCINOGEN):

<table>
<thead>
<tr>
<th>CHEMICAL (COMMON) NAME:</th>
<th>CAS NO.:</th>
<th>EFFECTIVE DATE:</th>
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<tr>
<td>N-METHYL-2-PYRROLIDONE</td>
<td>1. 872-50-4</td>
<td>1. JULY 1989</td>
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(METHYLPYRROLIDONE)

INGREDIENTS WITH KNOWN PHYSICAL HAZARDS:

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(METHYLPYRROLIDONE)

COMPLETE MSDS INFORMATION FOR EACH COMPONENT LISTED ABOVE IS ATTACHED.
ALTHOUGH COMPLETE INFORMATION IS NOT KNOWN ABOUT THE PRODUCT MIXTURE THE
FOLLOWING PRECAUTIONS ARE ADVISED, IN ADDITION TO THE ATTACHED COMPONENT INFORMATION.

WARNING: AVOID CONTACT WITH SKIN AND EYES. MAY BE IRRITATING TO EYES. FLUSH AREA OF CONTACT WITH COPIOUS AMOUNTS OF WATER. CALL PHYSICIAN IF TAKEN INTERNALLY.

GELMAN SCIENCES INC.
600 SOUTH WAGNER ROAD
ANN ARBOR, MI 48106
FAX: 313-761-1208
(313) 665-0651

/1737Q(1)

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MATERIAL SAFETY DATA SHEET

EFFECTIVE DATE: JULY 1989
SUPERCEDES: NOV. 8, 1985

LISTED IN US EPA UNDER TSCA 1976

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SECTION I - PRODUCT IDENTIFICATION

CHEMICAL NAME: N-METHYL-2-PYRROLIDONE CAS NO.: 872-50-4
(METHYL PYRROLIDONE)

KEY: N/F = NONE FOUND
SECTION II - EMERGENCY & FIRST AID

FIRST AID

INHALATION: MOVE TO FRESH AIR. IF BREATHING IS DIFFICULT ADMINISTER OXYGEN. IF BREATHING HAS STOPPED, GIVE ARTIFICIAL RESPIRATION. SEEK MEDICAL ATTENTION.

INGESTION: IMMEDIATELY DRINK 2 GLASSES OF WATER AND INDUCE VOMITING. NEVER GIVE ANYTHING BY MOUTH TO AN UNCONSCIOUS PERSON. SEEK MEDICAL ATTENTION.

SKIN CONTACT: IMMEDIATELY FLUSH WITH WATER FOR AT LEAST 15 MIN. REMOVE CONTAMINATED CLOTHING. LAUNDER CONTAMINATED CLOTHING BEFORE REUSE.

EYE CONTACT: FLUSH WITH LARGE AMOUNTS OF WATER, SEEK MEDICAL ATTENTION.

PRIMARY ROUTE OF ENTRY: CONTACT WITH SKIN; INHALATION

SYMPTOMS OF OVEREXPOSURE: N/F

MEDICAL CONDITIONS GENERALLY AGGRAVATED BY EXPOSURE: N/F

ADDITIONAL INFORMATION: N/F

SECTION III - TOXICOLOGY & HEALTH INFORMATION

EXPOSURE LIMITS

THRESHOLD LIMIT VALUE: NOT ESTABLISHED. LD50 ORAL (RAT) = 3.5 ML/KG

PERMISSIBLE EXPOSURE LIMIT: N/F

LISTED AS A POTENTIAL CARCINOGEN/SOURCE: N/F

SECTION IV - PHYSICAL DATA

BOILING POINT: 396 F

VAPOR PRESSURE (MM/HG): 0.50

VAPOR DENSITY (AIR = 1): HEAVIER THAN AIR

SOLUBILITY: COMPLETELY SOLUBLE IN WATER.

MELTING POINT: N/F
SPECIFIC GRAVITY (WATER = 1): 1.030-1.034
PERCENT VOLATILE BY VOLUME (%): 100.0
EVAPORATION RATE: (N-BUTYL ACETATE = 1) 0.6
APPEARANCE/ODOR: COLORLESS LIQUID/MILD AMINE ODOR

SECTION V - FIRE & EXPLOSION DATA

FLASH POINT/METHOD USE: 199 F (92.8 C)
FLAMMABLE LIMITS: N/F UEL: 9.5% LEL: 1.3%
EXTINGUISHING MEDIA: ALCOHOL FOAM; CARBON DIOXIDE; DRY CHEMICAL
SPECIAL FIRE FIGHTING PROCEDURES: SELF CONTAINED BREATHING APPARATUS WITH A
FUEL FACEPIECE OPERATED IN THE POSITIVE PRESSURE DEMAND MODE WHEN FIGHTING
FIRES.
FIRE & EXPLOSION HAZARD: VAPORS ARE HEAVIER THAN AIR AND MAY TRAVEL ALONG
THE GROUND OR BE MOVED BY VENTILATION AND IGNITED BY HEAT, PILOT LIGHTS
OR OTHER FLAMES AND IGNITION SOURCES AT LOCATIONS DISTANT FROM MATERIAL
HANDLING POINT. NEVER USE WELDING OR CUTTING TORCH ON OR NEAR DRUMS (EVEN
EMPTY). IT CAN IGNITE EXPLOSIVELY.

SECTION VI - REACTIVITY DATA

STABILITY: CONDITION TO AVOID: MOISTURE-COMPUND IS
STABLE X UNSTABLE HYGROSCOPIC
HAZARDOUS POLYMERIZATION: CONDITION TO AVOID: N/F
MAY OCCUR WILL NOT OCCUR X
HAZARDOUS DECOMPOSITION PRODUCTS: MAY FORM TOXIC MATERIALS, CARBON DIOXIDE,
CARBON MONOXIDE, NITROGEN COMPOUNDS AND VARIOUS HYDROCARBONS.
INCOMPATIBILITY (MATERIALS TO AVOID): STRONG ALKALIES AND MINERAL ACIDS.
SECTION VII - SPECIAL PROTECTION INFORMATION

RESPIRATORY PROTECTION: N/F
EYE PROTECTION: GOGGLES
PROTECTIVE GLOVES: NEOPRENE
VENTILATION (PLEASE REFER TO THE ACGIH DOCUMENT, "INDUSTRIAL VENTILATION, A MANUAL OF RECOMMENDED PRACTICES," FOR DETAILS): LOCAL OR MECHANICAL (GENERAL)
OTHER PROTECTIVE EQUIPMENT: IMPERVIOUS CLOTHING & BOOTS.

SECTION VIII - SPECIAL PRECAUTIONS

STORAGE & HANDLING PRECAUTIONS: N/F

SECTION IX - SPILL, LEAK & DISPOSAL PROCEDURES

STEPS TO BE TAKEN IN CASE MATERIAL IS SPILLED OR RELEASED: ABSORB SPILL ON SAND, VERMICULITE OR PAPER TOWELING. SCOOP INTO A CARTON AND REMOVE TO CHEMICAL INCINERATOR EQUIPPED WITH AFTER BURNER.
WASTE DISPOSAL METHOD (ALL FEDERAL, STATE AND LOCAL LAWS TAKE PRECEDENCE):
DESTROY BY LIQUID INCINERATION WITH OFF-GAS SCRUBBER.