

MATERIAL SAFETY DATA SHEET

MICRO-CLEAN DETERGENT

SECTION 1 - MATERIAL IDENTIFICATION AND INFORMATION

MANUFACTURER'S NAME: GENOMIC SOLUTIONS, INC.
ADDRESS: 4355 VARSITY DR.
ANN ARBOR, MI 48108
TELEPHONE NUMBER: (734) 975-4800
US EMERGENCY PHONE: (800) 535-5053
INTERNATIONAL EMERGENCY PHONE: 1(352) 323-3500 (Call Collect)

SUBSTANCE: MICRO-CLEAN DETERGENT

TRADE NAMES/SYNONYMS:

80-0076, MICRO-CLEAN DETERGENT 500 ML; 80-0179, MICRO-CLEAN DETERGENT 1 GALON;
70-2891, MICRO-CLEAN DETERGENT SOLUTION 2D ELECTROPHORESIS; MICRO-CLEANER LIQUID
LABORATORY.

CHEMICAL FAMILY: MIXTURE

CREATION DATE: 6/1/95
REVISED: 2/20/98

SECTION 2 - PHYSICAL / CHEMICAL CHARACTERISTICS

COMPONENT: MICRO-CLEAN DETERGENT
PERCENTAGE: 100.0
OTHER CONTAMINANTS: MAY CONTAIN TRACES OF ETHYLENE OXIDE

PHYSICAL AND CHEMICAL PROPERTIES

DESCRIPTION: Light yellow liquid with a slight ammonia odor
VISCOSITY: 8.2
FREEZING POINT: no data available
BOILING POINT: 218 F (103 C)
VAPOR PRESSURE: no data available
VAPOR DENSITY: no data available
SPECIFIC GRAVITY: 1.14 (H₂O=1)
WATER SOLUBILITY: Soluble
pH: 9.7
ODOR THRESHOLD: no data available
EVAPORATION RATE: no data available
SOLVENT SOLUBILITY:

SECTION 3 - FIRE AND EXPLOSION HAZARD DATA

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

EMERGENCY OVERVIEW:

Light yellow liquid with a slight ammonia odor. May be irritating to skin and eyes. Avoid contact with eyes, skin and clothing. Wash thoroughly after handling.

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POTENTIAL HEALTH EFFECTS

INHALATION:

Short Term Effects: No information is available.

Long Term Effects: No information available on significant adverse effects.

SKIN CONTACT:

Short Term Effects: May cause irritation.

Long Term Effects: No information available on significant adverse effects.

EYE CONTACT:

Short Term Effects: May cause irritation.

Long Term Effects: No information is available.

INGESTION:

Short Term Effects: May cause muscle spasm.

Long Term Effects: No information is available.

CARCINOGEN STATUS:

OSHA: N

NTP: N

IARC: N

FIRE FIGHTING MEASURES

FIRE AND EXPLOSION HAZARD:

Negligible fire hazard when exposed to heat or flame.

EXTINGUISHING MEDIA:

Dry chemical, carbon dioxide, water spray or regular foam (1993 Emergency Response Guidebook, RSPA P 5800.6).

For larger fires, use water spray, fog or regular foam (1993 Emergency Response Guidebook, RSPA P 5800.6).

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 (1993 Emergency Response Guidebook, RSPA P 5800.6, Guide Page 31).

Use agents suitable for type of surrounding fire. Avoid breathing hazardous vapors, keep upwind.

FLASH POINT: no data available

LOWER FLAMMABLE LIMIT: no data available

UPPER FLAMMABLE LIMIT: no data available

AUTOIGNITION: no data available

HAZARDOUS COMBUSTION PRODUCTS:

Thermal decomposition may release toxic and/or hazardous gases.

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SECTION 4 - REACTIVITY HAZARD DATA

STABILITY AND REACTIVITY

REACTIVITY: Stable under normal temperatures and pressures.

CONDITIONS TO AVOID: Avoid contact with heat, sparks, flames, or other sources of ignition. Vapors may be explosive. Avoid overheating of containers; containers may violently rupture in heat of fire. Avoid contamination of water sources.

Trace amounts of ethylene oxide, a carcinogen, may be present in this product. There is a potential for accumulation of ethylene oxide in the head space of containers or in enclosed areas where the product is stored, handled or used. Users should comply with 29 CFR 1910.1047.

INCOMPATIBILITIES:

MICRO-CLEAN DETERGENT:

ALUMINUM: May be etched.

ZINC: May be etched.

HAZARDOUS DECOMPOSITION: Thermal decomposition may release toxic and/or hazardous gases.

POLYMERIZATION: Hazardous polymerization has not been reported to occur under normal temperatures and pressures.

SECTION 5 - HEALTH HAZARD DATA

EMERGENCY FIRST AID

INHALATION:

First Aid - Remove from exposure area to fresh air immediately. Perform artificial respiration if necessary. Keep person warm and at rest. Treat symptomatically and supportively. Get medical attention immediately.

SKIN CONTACT:

First Aid - Remove contaminated clothing and shoes immediately. Wash with soap or mild detergent and large amounts of water until no evidence of chemical remains (at least 15-20 minutes). Get medical attention immediately.

EYE CONTACT:

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 (at least 15-20 minutes). Get medical attention immediately.

INGESTION:

First Aid - If vomiting occurs, keep head lower than hips to help prevent aspiration. Treat symptomatically and supportively. Get medical attention if needed.

NOTE TO PHYSICIAN

ANTIDOTE: no data available

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TOXICOLOGY INFORMATION

MICRO-CLEAN DETERGENT:

TOXICITY DATA:

>8 gm/kg oral-rat LD50 (Millipore MSDS)

CARCINOGEN STATUS: None.

ACUTE TOXICITY LEVEL: Slightly toxic by ingestion.

TARGET EFFECTS: No data available.

HEALTH EFFECTS

INHALATION:

MICRO-CLEAN DETERGENT:

Acute Exposure: No data available.

Chronic Exposure: Repeated or prolonged inhalation may cause slight nose and throat irritation.

SKIN CONTACT:

MICRO-CLEAN DETERGENT:

Acute Exposure: May cause irritation. When applied to rabbit skin caused moderate irritation.

Chronic Exposure: Repeated or prolonged contact may cause drying and chapping.

EYE CONTACT:

MICRO-CLEAN DETERGENT:

Acute Exposure: May cause irritation. Caused transient irritation in 4 of 8 rabbits tested, however did not affect the cornea.

Chronic Exposure: No data available.

INGESTION:

MICRO-CLEAN DETERGENT:

Acute Exposure: Ingestion of large amounts may cause cramps, muscle spasms, and hypocalcemic tetany.

Chronic Exposure: No data available.

SECTION 6 - CONTROL AND PROTECTIVE MEASURES

EXPOSURE LIMITS:

ETHYLENE OXIDE:

1 ppm OSHA TWA

5 ppm OSHA 15 minute excursion limit

0.5 ppm OSHA TWA action level

Not to exceed 0.1 ppm NIOSH recommended 8 hour TWA

1 ppm ACGIH TWA

ACGIH A2-Suspected Human Carcinogen

5 ppm NIOSH recommended 10 minute ceiling

Measurement method: Charcoal tube (petroleum-based); dimethylformamide; gas chromatography with electron capture detection; (NIOSH Vol. III # 1614).

1000 pounds SARA Section 302 Threshold Planning Quantity

1 pound SARA Section 304 Reportable Quantity

10 pounds CERCLA Section 103 Reportable Quantity

5000 pounds OSHA Process Safety Management Threshold Quantity

Subject to SARA Section 313 Annual Toxic Chemical Release Reporting

Subject to California Proposition 65 cancer and/or reproductive toxicity warning and release requirements (February 27, 1987)

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VENTILATION:

Provide local exhaust ventilation to meet published exposure limits. Ventilation equipment should be explosion-proof if explosive concentrations of dust, vapor or fume are present.

EYE PROTECTION:

Employee must wear splash-proof or dust-resistant safety goggles to prevent eye contact with this substance.

EMERGENCY WASH FACILITIES:

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.

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.

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 chemical cartridge respirator with organic vapor cartridge(s) and a full facepiece.

Any gas mask with organic vapor canister (chin-style or front- or back-mounted canister), with a full facepiece.

Any 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 a continuous-flow mode.

Any 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:

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.

SECTION 7 - PRECAUTIONS FOR SAFE HANDLING & USE/LEAK PROCEDURES

ACCIDENTAL RELEASE MEASURES

OCCUPATIONAL SPILL:

Shut off ignition sources. Stop leak if you can do it without risk. Use water spray to reduce vapors. For small spills, take up with sand or other absorbent material and place into containers for later disposal. For larger spills, dike

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far ahead of spill for later disposal. No smoking, flames or flares in hazard area. Keep unnecessary people away; isolate hazard area and restrict entry.

HANDLING AND STORAGE

Observe all federal, state and local regulations when storing this substance. Store away from incompatible substances.

DISPOSAL INFORMATION

Observe all federal, state and local regulations when disposing of this substance.

SECTION 8 - TRANSPORTATION AND REGULATORY INFORMATION

TRANSPORTATION INFORMATION:

No classification currently assigned

REGULATORY INFORMATION:

TSCA STATUS: Y

CERCLA SECTION 103 (40CFR302.4): Y

ETHYLENE OXIDE 10 pounds RQ

SARA SECTION 302 (40CFR355.30): Y

ETHYLENE OXIDE 1000 pounds TPQ

SARA SECTION 304 (40CFR355.40): Y

ETHYLENE OXIDE 1 pound RQ

SARA SECTION 313 (40CFR372..65): Y

ETHYLENE OXIDE

OSHA PROCESS SAFETY (29CFR1910.119): Y

ETHYLENE OXIDE 5000 pounds TQ

CALIFORNIA PROPOSITION 65:

ETHYLENE OXIDE

SARA HAZARD CATEGORIES, SARA SECTIONS 311/312 (40 CFR 370.21)

ACUTE HAZARD: N

CHRONIC HAZARD: N

FIRE HAZARD: N

REACTIVITY HAZARD: N

SUDDEN RELEASE HAZARD: N

While the information and recommendations set forth herein are believed to be accurate as of the date hereof,

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