WUXIZYME MTAA

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1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

1.1 CHEMICAL PRODUCT

WUXIZYME MTAA

1.2 PREPARED BY

ENVIRONMENTAL & REGULATORY AFFAIRS DEPARTMENT

1.3 PREPARATION DATE

4/17/2003

1.4 CHEMICAL FORMULA

N.A.V

1.5 MOLECULAR WEIGHT

N.A.V

1.6 CHEMICAL FAMILY

ENZYME PROTEIN

1.7 MATERIAL USE

REFER TO TECHNICAL LITERATURE

2. COMPOSITION/INFORMATION ON INGREDIENTS

<table>
<thead>
<tr>
<th>CAS #</th>
<th>CHEMICAL NAME</th>
<th>%</th>
<th>EINECS #</th>
</tr>
</thead>
<tbody>
<tr>
<td>9000-90-2</td>
<td>Medium temperature ALPHA-AMYLASE</td>
<td>100</td>
<td>3.2.1.1</td>
</tr>
</tbody>
</table>

2.1 HAZARD SYMBOLS

NONE LISTED
3. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

APPEARANCE: NOT AVAILABLE. CAUTION! MAY CAUSE SKIN IRRITATION. MAY CAUSE EYE IRRITATION.
THE TOXICOLOGICAL PROPERTIES OF THIS MATERIAL HAVE NOT BEEN FULLY INVESTIGATED.

TARGET ORGANS: NONE.

POTENTIAL HEALTH EFFECTS

EYE MAY CAUSE EYE IRRITATION

SKIN MAY CAUSE SKIN IRRITATION

INGESTION THE TOXICOLOGICAL PROPERTIES OF THIS SUBSTANCE HAS NOT BEEN FULLY INVESTIGATED. THIS IS A HUMAN SOURCE

INHALATION THE TOXICOLOGICAL PROPERTIES OF THIS SUBSTANCE HAS NOT BEEN FULLY INVESTIGATED.

CHRONIC NO INFORMATION FOUND.

4. FIRST AID MEASURES

4.1 EYES FLUSH EYES WITH PLENTY OF WATER FOR AT LEAST 15 MINUTES, OCCASIONALLY LIFTING THE UPPER AND LOWER EYELIDS. GET MEDICAL AID.

4.2 SKIN GET MEDICAL AID. FLUSH SKIN WITH PLENTY OF SOAP AND WATER FOR AT LEAST 15 MINUTES WHILE REMOVING CONTAMINATED CLOTHING AND SHOES.

4.3 INGESTION IF VICTIM IS CONSCIOUS AND ALERT, GIVE 2-4 CUPFULS OF MILK OR WATER. NEVER GIVE ANYTHING BY MOUTH TO AN UNCONSCIOUS PERSON. GET MEDICAL AID.

4.4 INHALATION REMOVE FROM EXPOSURE TO FRESH AIR IMMEDIATELY. IF NOT BREATHING, GIVE ARTIFICIAL RESPIRATION. IF BREATHING IS DIFFICULT, GIVE OXYGEN. GET MEDICAL AID.

NOTES TO PHYSICIAN: TREAT SYMPTOMATICALLY AND
5. FIRE FIGHTING MEASURES

**GENERAL INFORMATION**
AS IN ANY FIRE, WEAR A SELF-CONTAINED BREATHING APPARATUS IN PRESSURE-DEMAND, MSHA/NIOSH (APPROVED OR EQUIVALENT), AND FULL PROTECTIVE GEAR.

5.1 EXTINGUISHING MEDIA
FOR SMALL FIRES, USE WATER SPRAY, DRY CHEMICAL, CARBON DIOXIDE OR CHEMICAL FOAM.

5.2 AUTOIGNITION TEMPERATURES
NOT AVAILABLE

5.3 FLASH POINT
NOT AVAILABLE

5.4 EXPLOSION LIMITS, LOWER
NOT AVAILABLE

5.5 EXPLOSION LIMITS, UPPER
NOT AVAILABLE

5.6 NFPA RATING
(ESTIMATED)

5.7 HEALTH:
1; FLAMMABILITY: 0; INSTABILITY: 0

6. ACCIDENTAL RELEASE MEASURES

6.1 GENERAL INFORMATION
USE PROPER PERSONAL PROTECTIVE EQUIPMENT AS INDICATED IN SECTION 8

6.2 SPILLS/LEAKS
VACUUM OR SWEEP UP MATERIAL AND PLACE INTO A SUITABLE DISPOSAL CONTAINER. AVOID GENERATING DUSTY CONDITIONS

7. HANDLING AND STORAGE

7.1 HANDLING
USE WITH ADEQUATE VENTILATION. AVOID CONTACT WITH SKIN AND EYES. AVOID INGESTION AND INHALATION.

7.2 STORAGE
STORE IN A COOL, DRY PLACE.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 ENGINEERING CONTROLS
USE ADEQUATE VENTILATION TO KEEP AIRBORNE CONCENTRATIONS LOW.

<table>
<thead>
<tr>
<th>CHEMICAL NAME</th>
<th>ACGIH</th>
<th>NIOSH</th>
<th>OSHA – FINAL</th>
</tr>
</thead>
</table>

ICI PAKISTAN LTD.
8.2 OSHA VACATED PELS

8.3 WUXIZYME MTAA

NO OSHA VACATED PELS ARE LISTED FOR THIS CHEMICAL.

PERSONAL PROTECTIVE EQUIPMENT

EYES

WEAR APPROPRIATE PROTECTIVE EYEGLASSES OR CHEMICAL SAFETY GOGGLES AS DESCRIBED BY OSHA'S EYE AND FACE PROTECTION REGULATIONS IN 29 CFR 1910.133 OR EUROPEAN STANDARD EN166.

SKIN

WEAR APPROPRIATE GLOVES TO PREVENT SKIN EXPOSURE.

CLOTHING

WEAR APPROPRIATE PROTECTIVE CLOTHING TO PREVENT SKIN EXPOSURE.

EYE PROTECTION

TIGHTLY FITTING SAFETY GOGGLES (CAGE GOGGLES) (E.G. EN166) AND FACE SHIELD

RESPIRATORS

FOLLOW THE OSHA RESPIRATOR REGULATIONS FOUND IN 29 CFR 1910.134 OR EUROPEAN STANDARD EN 149. ALWAYS USE A NIOSH OR EUROPEAN STANDARD EN 149 APPROVED RESPIRATOR WHEN NECESSARY.

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 PHYSICAL STATE

LIQUID

9.2 COLOR

BROWN

9.3 ODOR

NO PECULIAR ODOR

9.4 PH

NOT AVAILABLE

9.5 VAPOR PRESSURE

NOT APPLICABLE

9.6 VAPOR DENSITY

NOT APPLICABLE

9.7 EVAPORATION RATE

NOT APPLICABLE

9.8 VISCOSITY

NOT APPLICABLE

9.9 BOILING POINT

NOT APPLICABLE

9.10 FREEZING/MELTING POINT

NOT APPLICABLE
9.11 DECOMPOSITION TEMPERATURE  NOT APPLICABLE
9.12 SOLUBILITY IN WATER   SOLUBLE IN ANY RATE
9.13 SPECIFIC GRAVITY/DENSITY  1.2G/ML
9.14 MOLECULAR FORMULA   PROTEIN
9.15 MOLECULAR WEIGHT   NOT APPLICABLE

10. STABILITY AND REACTIVITY
10.1 CHEMICAL STABILITY STABLE UNDER NORMAL TEMPERATURES AND PRESSURES
10.2 CONDITIONS TO AVOID NONE REPORTED
10.3 INCOMPATIBILITIES WITH OTHER MATERIALS NONE REPORTED
10.4 HAZARDOUS DECOMPOSITION PRODUCTS NONE
10.5 HAZARDOUS POLYMERIZATION HAS NOT BEEN REPORTED

11. TOXICOLOGICAL INFORMATION
RTECS#: 
n CAS# 9000-90-2: BU7432500
LD50/ LC50:
n CAS# 9000-90-2: ORAL, MOUSE: LD50 = >15 GM/KG; ORAL, RAT: LD50 = >7500 MG/KG. CARCINOGENICITY: WUXIZYME HTAA - NOT LISTED BY ACGIH, IARC, NIOSH, NTP, OR OSHA. EPIDEMIOLOGY: NO DATA AVAILABLE. TERATOGENICITY: NO DATA AVAILABLE. REPRODUCTIVE EFFECTS: NO DATA AVAILABLE. NEUROTOXICITY: NO DATA AVAILABLE. MUTAGENICITY: NO DATA AVAILABLE. OTHER STUDIES: NO DATA AVAILABLE.

12. DISPOSAL CONSIDERATIONS
CHEMICAL WASTE GENERATORS MUST DETERMINE WHETHER ADISCARDED CHEMICAL IS CLASSIFIED AS A HAZARDOUS WASTE. US EPA GUIDELINES FOR THE CLASSIFICATION DETERMINATION ARE LISTED IN 40 CFR PARTS 261.3. ADDITIONALLY, WASTE GENERATORS MUST CONSULT STATE AND LOCAL HAZARDOUS WASTE REGULATIONS TO ENSURE COMPLETE AND ACCURATE CLASSIFICATION. RCRA P-SERIES: NONE LISTED. RCRA U-SERIES: NONE LISTED.
13. TRANSPORT INFORMATION

US DOT
- NO INFORMATION AVAILABLE
Canadian TDG
- NO INFORMATION AVAILABLE.

14. REGULATORY INFORMATION

US FEDERAL
TSCA
- CAS# 9000-90-2 IS LISTED ON THE TSCA INVENTORY. HEALTH & SAFETY REPORTING LIST
- NONE OF THE CHEMICALS ARE ON THE HEALTH & SAFETY REPORTING LIST.
Chemical Test Rules
- NONE OF THE CHEMICALS IN THIS PRODUCT ARE UNDER A CHEMICAL TEST RULE.
Section 12B
- NONE OF THE CHEMICALS ARE LISTED UNDER TSCA SECTION 12B.
TSCA Significant New Use Rule
- NONE OF THE CHEMICALS IN THIS MATERIAL HAVE A SNUR UNDER TSCA.
SARA
CERCLA Hazardous Substances and Corresponding RQS
- NONE OF THE CHEMICALS IN THIS MATERIAL HAVE AN RQ, SARA SECTION 302 EXTREMELY HAZARDOUS SUBSTANCES
- NONE OF THE CHEMICALS IN THIS PRODUCT HAVE A TPQ, SECTION 313
- NO CHEMICALS ARE REPORTABLE UNDER SECTION 313. CLEAN AIR ACT:
- THIS MATERIAL DOES NOT CONTAIN ANY HAZARDOUS AIR POLLUTANTS.
- THIS MATERIAL DOES NOT CONTAIN ANY CLASS 1 OZONE DEPLETORS.
- THIS MATERIAL DOES NOT CONTAIN ANY CLASS 2 OZONE DEPLETORS. CLEAN WATER ACT:
- NONE OF THE CHEMICALS IN THIS PRODUCT ARE LISTED AS HAZARDOUS SUBSTANCES UNDER THE CWA.
- NONE OF THE CHEMICALS IN THIS PRODUCT ARE LISTED AS PRIORITY POLLUTANTS UNDER THE CWA.
- NONE OF THE CHEMICALS IN THIS PRODUCT ARE LISTED AS TOXIC POLLUTANTS UNDER THE CWA.
OSHA:
- NONE OF THE CHEMICALS IN THIS PRODUCT ARE CONSIDERED HIGHLY HAZARDOUS BY OSHA.
STATE
WUXIZYME HTAA IS NOT PRESENT ON STATE LISTS FROM CA, PA, MN, MA, FL, OR NJ.
California No Significant Risk Level: None of the chemicals in this product are listed.
European/International Regulations
European Labeling in Accordance with EC Directives
- Hazard Symbols: Not Available.
- Risk Phrases:
- Safety Phrases:
| S 24/25 | AVOID CONTACT WITH SKIN AND EYES. WGK (WATER DANGER/PROTECTION) |
| CAS# 9000-90-2: 0 |
United Kingdom Occupational Exposure Limits United Kingdom Maximum Exposure Limits Canada
- None of the chemicals in this product are listed on the DSL/NDSL list.
WHMIS: Not Available.
CAS# 9000-90-2 IS NOT LISTED ON CANADA’S INGREDIENT DISCLOSURE LIST.
Exposure Limits
15. OTHER INFORMATION

MSDS CREATION DATE: 12/10/1998,
REVISION #3 DATE: FEB 2016

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