



WUXIZYME MTA

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1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

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|-----|------------------|---|
| 1.1 | CHEMICAL PRODUCT | WUXIZYME MTA |
| 1.2 | PREPARED BY | ENVIRONMENTAL & REGULATORY AFFAIRS DEPARTMENT |
| 1.3 | PREPARATION DATE | 4/17/2003 |
| 1.4 | CHEMICAL FORMULA | N.AV |
| 1.5 | MOLECULAR WEIGHT | N.AV |
| 1.6 | CHEMICAL FAMILY | ENZYME PROTEIN |
| 1.7 | MATERIAL USE | REFER TO TECHNICAL LITERATURE |

2. COMPOSITION/INFORMATION ON INGREDIENTS

CAS #	CHEMICAL NAME	%	EINECS #
9000-90 -2	Medium temperature ALPHA-AMYLASE	100	3.2.1.1

- | | | |
|-----|----------------|-------------|
| 2.1 | HAZARD SYMBOLS | NONE LISTED |
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2.2 RISK PHRASES 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.
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CHEMICAL NAME	ACGIH	NIOSH	OSHA – FINAL
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			ELS
Medium temperature Alpha-amylase ALFA-AMYLASE	NONE LISTED	NONE LISTED	NONE LISTED

8.2 OSHA VACATED PELS

8.3 WUXIZYME MTA

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

n NO INFORMATION AVAILABLE CANADIAN TDG

n NO INFORMATION AVAILABLE.

14. REGULATORY INFORMATION

US FEDERAL

TSCA

n CAS# 9000-90-2 IS LISTED ON THE TSCA INVENTORY. HEALTH & SAFETY REPORTING LIST

n NONE OF THE CHEMICALS ARE ON THE HEALTH & SAFETY REPORTING LIST.

CHEMICAL TEST RULES

n NONE OF THE CHEMICALS IN THIS PRODUCT ARE UNDER A CHEMICAL TEST RULE.

SECTION 12B

n NONE OF THE CHEMICALS ARE LISTED UNDER TSCA SECTION 12B.

TSCA SIGNIFICANT NEW USE RULE

n NONE OF THE CHEMICALS IN THIS MATERIAL HAVE A SNUR UNDER TSCA.

SARA

CERCLA HAZARDOUS SUBSTANCES AND CORRESPONDING RQS n NONE OF THE CHEMICALS IN THIS MATERIAL HAVE AN RQ. SARA SECTION 302 EXTREMELY HAZARDOUS SUBSTANCES

n NONE OF THE CHEMICALS IN THIS PRODUCT HAVE A TPQ. SECTION 313

n NO CHEMICALS ARE REPORTABLE UNDER SECTION 313. CLEAN AIR ACT:

n THIS MATERIAL DOES NOT CONTAIN ANY HAZARDOUS AIR POLLUTANTS.

n THIS MATERIAL DOES NOT CONTAIN ANY CLASS 1 OZONE DEPLETORS.

n THIS MATERIAL DOES NOT CONTAIN ANY CLASS 2 OZONE DEPLETORS. CLEAN WATER ACT:

n NONE OF THE CHEMICALS IN THIS PRODUCT ARE LISTED AS HAZARDOUS SUBSTANCES UNDER THE CWA.

n NONE OF THE CHEMICALS IN THIS PRODUCT ARE LISTED AS PRIORITY POLLUTANTS UNDER THE CWA.

n NONE OF THE CHEMICALS IN THIS PRODUCT ARE LISTED AS TOXIC POLLUTANTS UNDER THE CWA.

OSHA:

n 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

n HAZARD SYMBOLS: NOT AVAILABLE.

n RISK PHRASES:

n SAFETY PHRASES:

i S 24/25 AVOID CONTACT WITH SKIN AND EYES. WGK (WATER DANGER/PROTECTION)

n CAS# 9000-90-2: 0

UNITED KINGDOM OCCUPATIONAL EXPOSURE LIMITS UNITED KINGDOM MAXIMUM EXPOSURE LIMITS CANADA

n NONE OF THE CHEMICALS IN THIS PRODUCT ARE LISTED ON THE DSL/NDL LIST.

n WHMIS: NOT AVAILABLE.

n CAS# 9000-90-2 IS NOT LISTED ON CANADA'S INGREDIENT DISCLOSURE LIST.

EXPOSURE LIMITS



ICI PAKISTAN LTD.

ICI Pakistan Limited
Chemical Business

15. OTHER INFORMATION

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

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