

## SECTION 1 – IDENTIFICATION

**Product Name:** See List Below (used on label)

**Chemical Family Name (In-plant Common Name):** Protein(s)/Enzyme(s), Complex Polypeptides/Nucleotides

**Product Use:** Life Science Research Applications

**Manufacturer/Supplier Name:** Worthington Biochemical Corporation

**Address:** 730 Vassar Ave, Lakewood, NJ 08701 USA

**Emergency Phone:** 1.732.94.1660

**For Information Call:** 1.732.942.1660

<u>Common Name/Trade Name(Used on label)</u>	<u>Source</u>	<u>CAS Number</u>	<u>EC Number</u>
Actin	(rabbit muscle)	[51005-14-2]	N/A
Adenosine Deaminase	(calf spleen)	[9026-93-1]	3.5.4.4
Agarase, beta	( <i>Pseudomonas atlantica</i> )	[37288-57-6]	3.2.1.81
Albumin	(bovine)	[9048-46-8]	N/A
Alcohol Dehydrogenase	(yeast)	[9031-72-5]	1.1.1.1
Aldolase	(rabbit muscle)	[9024-52-6]	4.1.2.13
D-Amino Acid Oxidase	(hog kidney)	[9000-88-8]	1.4.3.3
L-Amino Acid Oxidase	( <i>Crotalus adamanteus</i> venom)	[9000-89-9]	1.4.3.2
Amylase, alpha	(porcine pancreas)	[9000-85-5]	3.2.1.1
Amylase, beta	(sweet potato)	[9000-91-3]	3.2.1.2
Arginase	(bovine liver)	[9000-96-8]	3.5.3.1
L-Asparaginase	( <i>E. coli</i> )	[9015-68-3]	3.5.1.1
Aspartate Aminotransferase	(porcine heart)	[9000-97-9]	2.6.1.1
Avidin	(egg white)	[1405-69-2]	N/A
Carbonic Anhydrase	(bovine erythrocytes)	[9001-03-0]	4.2.1.1
Carboxypeptidase A	(bovine pancreas)	[11075-17-5]	3.4.17.1
Carboxypeptidase B	(bovine pancreas)	[9025-24-5]	3.4.17.2
Carboxypeptidase Y	(yeast)	[9046-67-7]	3.4.16.1
Casein	(bovine milk)	[9000-71-9]	N/A
Catalase	(bovine liver)	[9001-05-2]	1.11.1.6
Cell Isolation Optimization System	(see components)	N/A	N/A
Cellulase	( <i>T. viride/reesei</i> )	[9012-54-8]	3.2.1.4
Cholesterol Esterase	(porcine pancreas)	[9026-00-0]	3.1.1.13
Cholinesterase, Acetyl	( <i>E. electricus</i> )	[9000-81-1]	3.1.1.7
Cholinesterase, Butyryl	(horse serum)	[9001-08-5]	3.1.1.8
Chymopapain	(papaya latex)	[9001-09-6]	3.4.22.2
Chymotrypsin	(bovine pancreas)	[9004-07-3]	3.4.21.1
Chymotrypsinogen A	(bovine pancreas)	[9035-75-0]	N/A
Clostridiopeptidase A	( <i>Cl. histolyticum</i> )	[9001-12-1]	3.4.24.3
Clostripain	( <i>Cl. histolyticum</i> )	[9028-00-6]	3.4.22.8
Collagen	(bovine achilles tendon)	[9007-34-5]	N/A
Collagen	(soluble calf skin)	[9007-34-5]	N/A
Collagenase, All Types	( <i>Cl. histolyticum</i> )	[9001-12-1]	3.4.24.3
Concanavalin A	(Jack bean)	[11028-71-0]	N/A
Creatine Kinase	(rabbit muscle)	[9001-15-4]	2.7.3.2
Cytochrome C Oxidase	(bovine heart)	[9001-16-5]	1.9.3.1
Deoxyribonuclease I	(bovine pancreas)	[9003-98-9]	3.1.21.1
Deoxyribonuclease II	(porcine spleen)	[9025-64-3]	3.1.22.1
Deoxyribonucleic Acid	(calf thymus)	[9007-49-2]	N/A
Deoxyribonucleic Acid	( <i>Cl. perfringens</i> )	[9007-49-2]	N/A
Deoxyribonucleic Acid	( <i>E. coli</i> )	[9007-49-2]	N/A
Deoxyribonucleic Acid	(Salmon testes)	[9007-49-2]	N/A
Deoxyribonucleic Acid, Activated	(calf thymus)	[9007-49-2]	N/A
Deoxyribonucleic Acid-Celluloses	(calf thymus)	[9007-49-2]	N/A
Deoxyribonucleic Acid, Lambda	( <i>E. coli</i> )	[9007-49-2]	N/A
Deoxyribonucleic Acid, Lambda, BstE II	(Lambda DNA)	[9007-49-2]	N/A
Deoxyribonucleic Acid, Lambda, EcoR I	(Lambda DNA)	[9007-49-2]	N/A

<u>Common Name/Trade Name(Used on label)</u>	<u>Source</u>	<u>CAS Number</u>	<u>EC Number</u>
Deoxyribonucleic Acid, Lambda, Hind III	(Lambda DNA)	[9007-49-2]	N/A
Deoxyribonucleic Acid, Lambda, gt10	(Lambda DNA)	[9007-49-2]	N/A
Deoxyribonucleic Acid, Lambda, gt11	(Lambda DNA)	[9007-49-2]	N/A
Deoxyribonucleic Acid, Phage M-13	(KO7/ <i>E. coli</i> JV 30)	[9007-49-2]	N/A
Deoxyribonucleic Acid, T7	(Bacteriophage T7, <i>E. coli</i> )	[9007-49-2]	N/A
Dextranase	( <i>Penicillium sp.</i> )	[9025-70-1]	3.2.1.11
Diaphorase	( <i>Cl. kluyveri</i> )	[9001-68-7]	1.6.99.1
DNA Ligase, T4	( <i>E. coli</i> lysogenic NM989)	[9015-85-4]	6.5.1.1
DNA Polymerase	( <i>E. coli</i> CM5199)	[9012-90-2]	2.7.7.7
DNA Polymerase, Klenow	( <i>E. coli</i> CM5199)	[9012-90-2]	2.7.7.7
DNA Polymerase, Klenow, Exo-Free	( <i>E. coli</i> CJ 375)	[9012-90-2]	2.7.7.7
DNA Polymerase, T4	( <i>E. coli</i> T4 gene 43)	[9012-90-2]	2.7.7.7
DNA Polymerase, T4, Exo-Free	( <i>E. coli</i> T4 gene 43 modified)	[9012-90-2]	2.7.7.7
DNA Polymerase, T7	( <i>E. coli</i> T7 gene 5/thioredoxin)	[9012-90-2]	2.7.7.7
Elastase	(porcine pancreas)	[39445-21-1]	3.4.21.36
Elastin	(bovine ligamentum nuchae)	[9007-58-3]	N/A
Endonuclease V, T4	( <i>E. coli</i> gene denV)	N/A	N/A
<i>E•RASE</i> <sup>TM</sup> RNase A/T1 Blend	(see components)	N/A	N/A
Galactose Oxidase	( <i>D. dendroides</i> )	[9028-79-9]	1.1.3.4
Galactosyltransferase	( bovine milk)	[9031-68-9]	2.4.1.22
Galactosidase, beta	( <i>E. coli</i> )	[9031-11-2]	3.2.1.23
Glucose Oxidase	( <i>A. niger</i> )	[9001-37-0]	1.1.3.4
Glucose-6-Phosphate Dehydrogenase	( <i>L. mesenteroides</i> )	[9001-40-5]	1.1.1.49
Glucosidase, alpha	(almonds)	[9001-22-3]	3.2.1.21
Glucosidase, beta	(yeast)	[9001-42-7]	3.2.1.20
Glucuronidase	(bovine liver)	[9001-45-0]	3.2.1.31
Glutamate Decarboxylase	( <i>E. coli</i> )	[9024-58-2]	4.1.1.15
Glutamic Oxaloacetic Transaminase	(porcine heart)	[9000-97-9]	2.6.1.1
Glyceraldehyde-3-Phosphate Dehydrogenase	(rabbit muscle)	[9001-50-7]	1.2.1.12
Glycerol Dehydrogenase	( <i>E. aerogenes</i> )	[9028-14-2]	1.1.1.6
Glycerol Kinase	( <i>E. coli</i> )	[9030-66-4]	2.7.1.30
Hemoglobin	(bovine erythrocytes)	[9008-02-0]	N/A
Hepatocyte Isolation System	(see components)	N/A	N/A
Hexokinase	(yeast)	[9001-51-8]	2.7.1.1
Histones	(calf thymus)	[37244-51-2]	N/A
Hyaluronic Acid	(bovine vitreous humor)	[9004-61-9]	N/A
Hyaluronidase	(bovine testes)	[37326-33-3]	3.2.1.35
Hydroxysteroid Dehydrogenase	( <i>P. testosteronei</i> )	[9028-56-2/9015-81-0]	1.1.1.51
Lactalbumin, alpha	(bovine milk)	[9013-90-5]	N/A
L-Lactate Dehydrogenase	(baker's yeast)	[9001-60-9]	1.1.2.3
Lactate Dehydrogenase	(bovine heart)	[9001-60-9]	1.1.1.27
Lactate Dehydrogenase	(rabbit muscle)	[9001-60-9]	1.1.1.27
Lactoperoxidase	(bovine milk)	[9003-99-0]	1.11.1.8
Leucine Aminopeptidase	(porcine kidney)	[9001-61-0]	3.4.11.1
Lipase	(porcine pancreas)	[9001-62-1]	3.1.1.3
Luciferase	( <i>P. fischerii</i> )	[9014-00-0]	1.14.14.3
Lysozyme	(egg white)	[12650-88-3]	3.2.1.17
Malate Dehydrogenase	(porcine heart)	[9067-93-0]	1.1.1.37
Maltase	(yeast)	[9001-42-7]	3.2.1.20
Maltodextrin Phosphorylase	( <i>E. coli</i> )	N/A	N/A
<i>Micrococcus lysodeikticus</i> cells	( <i>M. lysodeikticus</i> )	N/A	N/A
MOPS Buffer	N/A	[1132-61-2]	N/A
Mucin	(bovine submaxillary gland)	[84195-52-8]	N/A
Myoglobin	(bovine muscle)	[11080-17-4]	N/A
NADase	( <i>N. crassa</i> )	[9032-65-9]	3.2.2.5
Neonatal Cardiomyocyte Isolation System	(see components)	N/A	N/A
Neuraminidase	( <i>Cl. perfringens</i> )	[9001-67-6]	3.2.1.18
Neutral Protease (Dispase®)	( <i>B. polymyxa</i> )	[42613-33-2]	3.4.24.28
Nick Translation Kit	(see components)	N/A	N/A

<u>Common Name/Trade Name(Used on label)</u>	<u>Source</u>	<u>CAS Number</u>	<u>EC Number</u>
Nitrate Reductase	( <i>E. coli</i> )	[9029-42-9]	1.9.6.1
Nuclease, Micrococcal (S7)	( <i>S. aureus</i> )	[9013-53-0]	3.1.31.1
Nuclease, SI	( <i>A. oryzae</i> )	[37288-25-8]	3.1.30.1
Nucleohistone	(calf thymus)	[37244-51-2]	N/A
Oligo (dT)-Cellulose	(oligo (dT))	N/A	N/A
Ovalbumin	(egg white)	[9006-59-1]	N/A
Papain	(papaya latex)	[9001-73-4]	3.4.22.2
Papain Dissociation System	(see components)	N/A	N/A
Papain, Mercuri-	(papaya latex)	[9001-73-4]	3.4.22.2
Pectinase	( <i>A. niger</i> )	[9033-35-6]	4.2.2.10
Pepsin	(porcine stomach)	[9001-75-6]	3.4.23.1
Pepsinogen	(porcine stomach)	[9001-75-6]	N/A
Peroxidase	(horseradish roots)	[9003-99-0]	1.11.1.7
Phage DNA, M13	(Phage M-13-KO7 <i>E. coli</i> JV30)	[9007-49-2]	N/A
Phosphatase, Acid	(wheat germ)	[9001-77-8]	3.1.3.2
Phosphatase, Alkaline	(calf intestine)	[9001-78-9]	3.1.3.1
Phosphatase, Alkaline	(chicken intestine)	[9001-78-9]	3.1.3.1
Phosphatase, Alkaline	( <i>E. coli</i> )	[9001-78-9]	3.1.3.1
Phosphodiesterase I	( <i>Crotalus adamanteus</i> venom)	[9025-82-5]	3.1.4.1
Phosphodiesterase II	(bovine spleen)	[9068-54-6]	3.1.4.18
Phosphoenolpyruvate Carboxylase	( <i>E. coli</i> )	[9067-77-0]	4.1.1.31
Phosphoglucosmutase	(rabbit muscle)	[9001-81-4]	5.4.2.2
Phospholipase A2	( <i>Crotalus adamanteus</i> venom)	[9001-84-7]	3.1.1.4
Phospholipase C	( <i>Cl. perfringens</i> )	[9001-86-9]	3.1.4.3
Plasma Amine Oxidase	(bovine plasma)	[9001-53-0]	1.4.3.21
Plasmid DNA, pBR322	( <i>E. coli</i> RLM430)	[9007-49-2]	N/A
Plasmid DNA, pT7-0 UD	( <i>E. coli</i> DH5-alpha)	[9007-49-2]	N/A
Plasmid DNA, pT7-1	( <i>E. coli</i> DH5-alpha)	[9007-49-2]	N/A
Plasmid DNA, pT7-2	( <i>E. coli</i> DH5-alpha)	[9007-49-2]	N/A
Plasmid DNA, pT7-7	( <i>E. coli</i> DH5-alpha)	[9007-49-2]	N/A
Plasmid DNA, pT7-SC	( <i>E. coli</i> DH5-alpha)	[9007-49-2]	N/A
Plasmid DNA, pT7-SCII	( <i>E. coli</i> DH5-alpha)	[9007-49-2]	N/A
Plasmid DNA, pTZ18U	( <i>E. coli</i> DH5-alpha)	[9007-49-2]	N/A
Plasmid DNA, pTZ19U	( <i>E. coli</i> DH5-alpha)	[9007-49-2]	N/A
Plasmid DNA, pUC 18	( <i>E. coli</i> DH5-alpha)	[9007-49-2]	N/A
Plasmid DNA, pUC 19	( <i>E. coli</i> DH5-alpha)	[9007-49-2]	N/A
Plasmid DNA, pUC 118	( <i>E. coli</i> DH5-alpha)	[9007-49-2]	N/A
Plasmid DNA, pUC 119	( <i>E. coli</i> DH5-alpha)	[9007-49-2]	N/A
Pokeweed Antiviral Protein	( <i>Phytolacca americana</i> (pokeweed))	[63231-57-2]	N/A
Polynucleotide Kinase, T4	( <i>E. coli</i> T4)	[37211-65-7]	2.7.1.78
Polyphenol Oxidase(Tyrosinase)	(mushroom)	[9002-10-2]	1.14.18.1
Protease, Neutral (Dispase®)	( <i>B. polymyxa</i> )	[9001-92-7]	3.4.24.28
Protease, V8	( <i>S. aureus</i> )	[66676-43-5]	3.4.21.19
Proteinase K	( <i>T. album</i> )	[39450-01-6]	3.4.21.14
Pyruvate Kinase	(rabbit muscle)	[9001-59-6]	2.7.1.40
Random Primers	N/A	N/A	N/A
Reverse Transcriptase, HIV, Recombinant	( <i>E. coli</i> plasmid pRC-RT)	[9068-38-6]	2.7.7.49
Ribonucleic Acid	(baker's yeast)	[63231-63-0]	N/A
Ribonucleic Acid, Core	(brewer's yeast)	[63231-63-0]	N/A
Ribonucleic Acid, QB Phage	(Phage QB)	[63231-63-0]	N/A
Ribonuclease A	(bovine pancreas)	[9001-99-4]	3.1.27.5
Ribonuclease B	(bovine pancreas)	[9001-99-4]	3.1.27.5
Ribonuclease T1	( <i>A. oryzae</i> )	[9026-12-4]	3.1.27.3
Ribonuclease T2	( <i>A. oryzae</i> )	[37278-25-4]	3.1.27.1
RNA Polymerase	( <i>E. coli</i> 4-13)	[9014-24-8]	2.7.7.6
RNA Polymerase, T7	( <i>E. coli</i> T7 gene)	[9014-24-8]	2.7.7.6
(Hydroxy) Steroid Dehydrogenase	( <i>P. testosteroni</i> )	[9028-56-2/9015-81-0]	1.1.1.51
Sodium Carbonate	N/A	[144-55-8]	N/A
STEMxyme® 1 & 2	( <i>Cl. histolyticum</i> / <i>B. polymyxa</i> )	[9001-12-1/42613-33-2]	3.4.24.3/3.4.24.28

<u>Common Name/Trade Name(Used on label)</u>	<u>Source</u>	<u>CAS Number</u>	<u>EC Number</u>
Superoxide Dismutase	(bovine erythrocytes)	[9054-89-1]	1.15.1.1
Thymidine Phosphorylase	( <i>E. coli</i> )	[9030-23-3]	2.4.2.4
Trypsin	(bovine pancreas)	[9002-07-7]	3.4.21.4
Trypsinogen	(bovine pancreas)	[9002-08-8]	N/A
Trypsin Inhibitor	(bovine pancreas)	[9035-81-8]	N/A
Trypsin Inhibitor	(lima bean)	[9035-81-8]	N/A
Trypsin Inhibitor	(ovomucoid)	[9035-81-8]	N/A
Trypsin Inhibitor	(soybean)	[9035-81-8]	N/A
Tyrosine Decarboxylase	( <i>Str. faecalis</i> )	[9002-09-9]	4.1.1.25
Urease	(Jack bean)	[9002-13-5]	3.5.1.5
Uricase	( <i>C. utilis</i> )	[9002-12-4]	1.7.3.3
Uricase	(porcine liver)	[9002-12-4]	1.7.3.3
Xanthine Oxidase	(bovine milk)	[9002-17-9]	1.2.3.2

## SECTION 2 - HAZARDS IDENTIFICATION

**OSHA Hazard Classification(s):** Skin and respiratory sensitizer, Irritant

**GHS Classification**

- Skin irritation (Category 2)
- Eye irritation (Category 2A)
- Respiratory sensitization (Category 1)
- Skin sensitization (Category 1)
- Specific target organ toxicity - single exposure (Category 3)

**Signal word:** Warning

**Hazard statement(s):**

- H315: Causes skin irritation.
- H317: May cause an allergic skin reaction.
- H319: Causes serious eye irritation.
- H334: May cause allergy or asthma symptoms or breathing difficulties if inhaled.
- H335: May cause respiratory irritation.

**Pictogram(s):**



**Precautionary statement(s)**

- P261: Avoid breathing dust/fume/gas/mist/vapors/spray.
- P280: Wear protective gloves.
- P305 + P351 + P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
- P342 + P311: If experiencing respiratory symptoms: Call a POISON CENTER or doctor/ physician.

**HMIS Classifications:**

- Health hazard:** 3
- Chronic Health Hazard:** Unknown, allergic reactions may develop in certain sensitive individuals.
- Flammability:** 0
- Physical hazards:** 0

**NFPA Ratings:**

- Health hazard:** 3
- Fire:** 0
- Reactivity Hazard:** 0

**Potential Health Effects:**

- Inhalation:** May be harmful if inhaled. Causes respiratory tract irritation.
- Skin:** May be harmful if absorbed through skin. May cause skin, eye or respiratory irritation upon contact.
- Eyes:** May cause eye irritation.

**Ingestion** May be harmful if swallowed

**Medical Conditions Generally Aggravated by Exposure:** Allergy-prone and asthmatic individuals should be particularly cautious with enzymes and other materials of biologic origin.

### SECTION 3 – COMPOSITION AND INFORMATION ON INGREDIENTS

<b>Chemical &amp; common name(s):</b>	Enzymes, Proteins
<b>Chemical Family Name (In-plant Common Name):</b>	Protein(s)/Enzyme(s), Complex Polypeptides/Nucleotides
<b>Ingredient Name(s):</b>	Refer to Section 1
<b>CAS Number(s):</b>	Refer to Section 1
<b>EC Number(s):</b>	Refer to Section 1
<b>Biologic Activity:</b>	Varies (%)

### SECTION 4 – FIRST AID MEASURES

**Emergency and First Aid Procedures:**

**General advice:** Enzymes/Proteins may cause allergic reactions in certain sensitive individuals.

Consult a physician. Show this safety data sheet to the doctor in attendance. Move out of contact area.

- 1. Inhalation:** Remove person from source then obtain necessary medical attention
- 2. Eyes:** Check for contact lenses and remove if present. Flush thoroughly with water while opening eyelids. If symptoms such as redness and irritation persist, obtain medical attention.
- 3. Skin:** Remove contaminated clothing. Wash material from skin with soap and water and rinse thoroughly with clean water. Obtain medical attention as needed or if irritation develops. Clean contaminated clothing before reuse.
- 4. Ingestion:** May be harmful if swallowed. Obtain medical attention as needed.

### SECTION 5 – FIRE-FIGHTING MEASURES

<b>Conditions of flammability:</b>	Not flammable or combustible.
<b>Suitable extinguishing media:</b>	Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.
<b>Special protective equipment for firefighters:</b>	Wear self contained breathing apparatus for fire fighting if necessary.
<b>Hazardous combustion products:</b>	Hazardous decomposition products formed under fire conditions. - Nature of decomposition products not known.
<b>Special Fire Fighting Procedures:</b>	None
<b>Unusual Fire and Explosion Hazards:</b>	None

### SECTION 6 – ACCIDENTAL RELEASE MEASURES

**Personal Precautions:** Wear appropriate personal protective equipment. Ensure adequate ventilation. Avoid breathing dust, vapors, mist or gas. Evacuate personnel to safe areas.

**Environmental Precautions:** Dispose of waste in accordance with all applicable Federal, State and local regulations. Refer to Section 13.

**Steps to be Taken in Case Material is Released or Spilled:** Wear approved respirator and protective gloves. Vacuum or collect powdered spill into appropriate waste container for disposal. Avoid physical contact and dust during removal. Use normal clean-up procedures for liquid spillage and wash thoroughly with water. Wash contaminated clothing before reuse.

**Waste Disposal Method:** Dispose of waste in accordance with all applicable Federal, State and local regulations. Refer to Section 13.

### SECTION 7 – HANDLING & STORAGE

**Handling:** Enzymes/Proteins may cause allergic reactions in certain sensitive individuals. Provide appropriate exhaust ventilation. Minimize dust and/or aerosol generation during use. Dry powders can build static electricity caused by excessive handling. Wear appropriate protective equipment as per Section 8.

**Storage:** Refer to specific product label for storage conditions. Lyophilized proteins will absorb moisture under high humidity and/or moisture conditions. Keep containers tightly closed when not in use and store in a cool, dry area according to label conditions. Long-term storage temperatures should not exceed 25°C for maximum stability.

## SECTION 8 – EXPOSURE CONTROLS & PERSONAL PROTECTION

<b>OSHA Permissible Exposure Limits (PELS):</b>	None
<b>ACGIH Threshold Limit Value:</b>	None
<b>I.A.R.C. Monographs:</b>	None
<b>National Toxicology Program:</b>	None
<b>Chemical Listed as Carcinogen or Potential Carcinogen:</b>	None
<b>Other Exposure Limit Use:</b>	Unknown

**Engineering (General):** Exhaust/Vent Fan      **Local Exhaust:** Advisable      **Special:** None

**Respiratory Protection (Specify Type):** A protective dust mask or approved respirator is advisable to avoid breathing particulates when a powdered form of the product is being handled.

**Skin and Body Protection:** Wear gloves and labcoat to prevent skin contact. Use proper glove removal technique (without touching their outer surface) to avoid skin contact with these products. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

**Eye Protection:** Either safety glasses or goggles should be worn.

**Other Protective Clothing or Equipment:** Sensitive individuals should wear dust masks/respirators, protective gloves, eye protection, lab coat, apron or other protective clothing to minimize contact.

## SECTION 9 – PHYSICAL & CHEMICAL PROPERTIES

<b>Appearance and Odor:</b>	Powders - White to tan, typical enzyme odor Liquids - White to brown, typical enzyme odor
<b>Odor Threshold:</b>	No Data Available
<b>Flammability:</b>	No Data Available
<b>Flash Point:</b>	No Data Available
<b>Lower/Upper Explosion Limits:</b>	No Data Available
<b>Auto/Ignition Temperature:</b>	No Data Available
<b>Decomposition Temperature:</b>	No Data Available
<b>Solubility in Water:</b>	Powders-Appreciable Liquids readily miscible in water
<b>Boiling Point/Range:</b>	No Data Available ; Denatures
<b>Specific Gravity/Density(H<sub>2</sub>O=1):</b>	Varies
<b>Vapor Density(Air=1):</b>	No Data Available
<b>Vapor Pressure (mmHg):</b>	No Data Available
<b>pH:</b>	No Data Available
<b>Freezing/Melting points:</b>	No Data Available
<b>Water Solubility:</b>	Varies; Generally Soluble
<b>Evaporation Rate:</b>	No Data Available
<b>Viscosity:</b>	Concentration Dependent
<b>Partition Coefficient (n-octanol/water):</b>	No Data Available

## SECTION 10 – STABILITY & REACTIVITY

<b>Reactivity:</b>	None Known
<b>Chemical Stability:</b>	Stable Under Recommended Storage Conditions
<b>Hazardous Decomposition Products:</b>	None Known
<b>Hazardous Polymerization:</b>	Will Not Occur
<b>Incompatibility (Materials to Avoid):</b>	None Known

## SECTION 11 – TOXICOLOGICAL INFORMATION

Refer to Section 4 for health effects information. To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated. Always follow Good Laboratory and Industrial Hygiene Practices and wear proper personal protective equipment when handling chemicals. May cause irritation and/or allergic reaction(s).

### Acute Toxicity

**Oral LD50:** No Data Available

**Inhalation LC50:** No Data Available

**Dermal LD50** No Data Available

**Other information on acute toxicity** No Data Available

**Skin corrosion/irritation** No Data Available

**Serious eye damage/eye irritation** No Data Available

**Respiratory or skin sensitization** May cause allergic respiratory and skin reactions

### Carcinogenicity

IARC/ACGIH/ NTP/OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen.

**Reproductive toxicity** No Data Available

**Teratogenicity** No Data Available

**Aspiration hazard:** No Data Available

**Synergistic effects:** No Data Available

**Specific target organ toxicity - single exposure (GHS):** May cause respiratory irritation.

**Specific target organ toxicity - repeated exposure (GHS):** May cause allergic reactions.

### Potential Health Effects:

**Inhalation:** May be harmful if inhaled. Causes respiratory tract irritation.

**Skin:** May be harmful if absorbed through skin. May cause skin, eye or respiratory irritation upon contact.

**Eyes:** May cause eye irritation.

**Ingestion** May be harmful if swallowed

**Medical Conditions Generally Aggravated by Exposure:** Allergy-prone and asthmatic individuals should be particularly cautious with enzymes and other materials of biologic origin.

## SECTION 12 – ECOLOGICAL INFORMATION

No data available. No environmental hazard is known.

## SECTION 13 – DISPOSAL CONSIDERATIONS

Dispose of waste in accordance with all applicable Federal, State and local regulations. Chemical residues are generally classified as special waste and, as such, the transportation, storage, treatment and disposal of this waste material must be conducted in compliance with all applicable Federal, State and local regulations. Rinse empty containers thoroughly before disposal and/or recycling.

## SECTION 14 – TRANSPORT INFORMATION

**DOT (US):** Not dangerous goods

**IMDG:** Not dangerous goods

**IATA:** Not dangerous goods

## SECTION 15 – REGULATORY INFORMATION

**US Federal Regulations:** Material(s) listed are exempt from the United States Environmental Protection Agency Toxic Substances Control Act (TSCA) inventory when supplied for research and development purposes or used under the supervision of a technically qualified individual as defined by 40CFR720.3. The health risks have not been fully determined.

**OSHA Hazards:** Skin and respiratory sensitizer, Irritant

**SARA 302 Components:** SARA 302: No chemicals in this material are subject to the reporting requirements of SARA

Title III, Section 302.

**SARA 313 Components:** SARA 313: This material does not contain any chemical components with known CAS numbers that exceed the threshold reporting levels established by SARA Title III, Section 313.

**SARA 311/312 Hazards:** Acute Health Hazard

**State Regulations:** Based upon available information, material(s) listed are not known to be regulated by any state or listed on the New Jersey Right To Know Hazardous Substance List.

**California Prop. 65 Components:** This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

**International Regulations:** EC: Harmful; R42/43, May cause sensitization by inhalation and skin contact.  
S36, Wear suitable protective clothing.

<b>SECTION 16 – OTHER INFORMATION</b>
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**Date Initially Prepared:** March, 1986

**Date Reviewed:** June, 2016.1

**Date Revised:** June, 2016.1

**Manufacturer Name:** Worthington Biochemical Corporation

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**Disclaimer**

The information contained in this SDS relates only to the material(s) designated and does not relate to use(s) in combination with any other material, process(es) and/or chemical reaction(s). Worthington Biochemical, Inc. provides this information in good faith, from sources believed to be accurate, however, assumes no liability for its accuracy or completeness.

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