

Material Safety Data Sheet
Bovine Thrombin 200/500**Section 1 - Chemical Product and Company Identification****MSDS Name:**

Bovine Thrombin 200/500

Catalog Numbers:

100601, 100606, 176297, 200601, 200606, 206689, 23176297, 23306291, 23306291DEM, 250601, 250606, 300606, 306291, CMS176297, CMS306291, PH100601

Synonyms:

Fibrinogen Reagent (Bovine) .

Company Identification:Fisher Diagnostics
Fisher Scientific Company LLC
8365 Valley Pike
Middletown, VA 22645-0307**Company Phone Number:**

(800) 528-0494

Emergency Phone Number:

(800) 528-0494

CHEMTREC Phone Number:

800-424-9300

CHEMTREC (International):

703-527-3887

Section 2 - Composition, Information on Ingredients

CAS#	Chemical Name:	Percent	EINECS/ ELINCS
77-86-1	Tris (hydroxymethyl) aminomethane	1.49%	201-064-4
Not available	BSA Fraction V	0.9%	Not available
7647-14-5	Sodium chloride	0.89%	231-598-3
9002-04-4	Bovine Thrombin	0.8-1.2%	232-648-7
10043-52-4	Calcium chloride	0.144 %	233-140-8

Material Safety Data Sheet
Bovine Thrombin 200/500**Section 3 - Hazards Identification****EMERGENCY OVERVIEW**

Appearance: clear, colorless liquid

Caution! Each unit of source material used in the preparation of this product has been tested by an FDA licensed method and found non-reactive for HBsAg and negative for antibodies to HIV and HCV. However, no known test method can offer complete assurance that products derived from human blood will not transmit hepatitis, AIDS, or other infectious diseases. This product, like all materials of human origin, should be handled as potentially infectious biological material. Causes eye irritation. May be absorbed through intact skin. May cause skin irritation. May cause respiratory and digestive tract irritation.

Target Organs: none.

Potential Health Effects**Eye:**

Causes eye irritation. Contact may cause transient eye irritation.

Skin:

Low hazard for usual industrial handling. May be absorbed through the skin.

Ingestion:

Ingestion of large amounts may cause gastrointestinal irritation. Low hazard for usual industrial handling.

Inhalation:

May cause respiratory tract irritation.

Chronic:

No information found.

Section 4 - First Aid Measures**Eyes:**

Immediately flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical aid.

Skin:

Flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Get medical aid if irritation develops or persists.

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.

Inhalation:

Remove from exposure and move 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 supportively.

Material Safety Data Sheet

Bovine Thrombin 200/500

Section 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.

Extinguishing Media:

For small fires, use water spray, dry chemical, carbon dioxide or chemical foam.

Autoignition Temperature:

Not applicable.

Explosion Limits:

Lower: Not available. Upper: Not available.

Flash Point:

Not applicable.

NFPA Rating:

(estimated) Health: 1; Flammability: 0; Reactivity: 0

Section 6 - Accidental Release Measures

General Information:

Use proper personal protective equipment as indicated in Section 8.

Spills/Leaks:

Absorb spill with inert material (e.g. vermiculite, sand or earth), then place in suitable container. Clean up spills immediately, observing precautions in the Protective Equipment section.

Section 7 - Handling and Storage

Handling:

Wash thoroughly after handling. Wash thoroughly after handling. Remove contaminated clothing and wash before reuse. Use with adequate ventilation. Avoid contact with skin and eyes. Avoid ingestion and inhalation.

Storage:

Store in a cool place in the original container and protect from sunlight. Keep container closed when not in use.

Section 8 - Exposure Controls, Personal Protection

Engineering Controls:

Good general ventilation should be sufficient to control airborne levels.

Exposure Limits

Chemical Name:	ACGIH	NIOSH	OSHA
Tris (hydroxymethyl) aminomethane	None of the components are on this list.	None of the components are on this list.	None of the components are on this list.
Sodium chloride	None of the components are on this list.	None of the components are on this list.	None of the components are on this list.
Bovine Thrombin	None of the components are on this list.	None of the components are on this list.	None of the components are on this list.

**Material Safety Data Sheet****Bovine Thrombin 200/500****Calcium chloride**None of the components
are on this list.None of the components
are on this list.None of the components
are on this list.**OSHA Vacated PELs****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 protective gloves to prevent skin exposure.

Clothing:

Wear appropriate protective clothing to prevent skin exposure.

Respirators:

Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced.

Section 9 - Physical and Chemical Properties**Physical State:** Liquid**Color:** clear, colorless**Odor:** Odorless.**pH:** No information found**Vapor Pressure:** No information found**Vapor Density:** No information found**Evaporation Rate:** No information found**Viscosity:** No information found**Boiling Point:** Not available.**Freezing/Melting Point:** No information found**Decomposition Temperature:** No information found**Solubility in water:** Soluble in water.**Specific Gravity/Density:** No information found**Molecular Formula:** Not applicable.**Molecular Weight:** No information found**Section 10 - Stability and Reactivity****Chemical Stability:**

Stable under normal temperatures and pressures.

Conditions to Avoid:

Incompatible materials.

Incompatibilities with Other Materials

Strong oxidants.

Hazardous Decomposition Products

No data available.

Material Safety Data Sheet
Bovine Thrombin 200/500**Hazardous Polymerization**

Has not been reported

Section 11 - Toxicological Information**RTECS:**

CAS# 77-86-1: TY2900000.
CAS# 7647-14-5: VZ4725000.
CAS# 9002-04-4: XO8950000.
CAS# 10043-52-4: EV9800000.

LD50/LC50:

CAS# 77-86-1:
Oral, rat: LD50 = 5900 mg/kg.
CAS# 7647-14-5:
Draize test, rabbit, eye: 100 mg Mild
Draize test, rabbit, eye: 100 mg/24H Moderate
Draize test, rabbit, eye: 10 mg Moderate
Draize test, rabbit, skin: 50 mg/24H Mild
Draize test, rabbit, skin: 500 mg/24H Mild
Inhalation, rat: LC50 = >42 gm/m3/1H
Oral, mouse: LD50 = 4 gm/kg
Oral, rat: LD50 = 3000 mg/kg
Skin, rabbit: LD50 = >10 gm/kg.
CAS# 9002-04-4:
No information found
CAS# 10043-52-4:
Oral, mouse: LD50 = 1940 mg/kg
Oral, rabbit: LD50 = 1384 mg/kg
Oral, rat: LD50 = 1 gm/kg.

Carcinogenicity:

CAS# 77-86-1: Not listed as a carcinogen by ACGIH, IARC, NIOSH, NTP, OSHA, or CA Prop 65.
CAS# 7647-14-5: Not listed as a carcinogen by ACGIH, IARC, NIOSH, NTP, OSHA, or CA Prop 65.
CAS# 9002-04-4: Not listed as a carcinogen by ACGIH, IARC, NIOSH, NTP, OSHA, or CA Prop 65.
CAS# 10043-52-4: Not listed as a carcinogen by ACGIH, IARC, NIOSH, NTP, OSHA, or CA Prop 65.

Epidemiology:

No information found

Teratogenicity:

No information found

Reproductive:

No information found

Mutagenicity:

No information found

Neurotoxicity:

No information found

Other:

See actual entry in RTECS for complete information.

Material Safety Data Sheet
Bovine Thrombin 200/500**Section 12 - Ecological Information**

No information found

Section 13 - Disposal Considerations

Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. US EPA guidelines for the classification determination are listed in 40 CFR Part 261.3. Additionally, waste generators must consult state and local hazardous waste regulations to ensure complete and accurate classification.

RCRA P Series Wastes

None of the components are on this list.

RCRA U Series Wastes

None of the components are on this list.

Section 14 - Transport Information**US DOT****Canadian TDG**

Proper Shipping Name: No information found

No information found

Hazard Class:

UN Number:

Packing Group:

Section 15 - Regulatory Information**US Federal****TSCA**

CAS# 77-86-1 is listed on the TSCA Inventory.
CAS# 7647-14-5 is listed on the TSCA Inventory.
CAS# 9002-04-4 is listed on the TSCA Inventory.
CAS# 10043-52-4 is listed on the TSCA Inventory.

Health and Safety Reporting List

None of the components are on this list.

Chemical Test Rules

None of the components are on this list.

TSCA Section 12b

None of the components are on this list.

TSCA Significant New Use Rule (SNUR)

None of the components are on this list.

CERCLA Hazardous Substances and corresponding RQs

None of the components are on this list.

SARA Section 302 Extremely Hazardous Substances

None of the components are on this list.

Material Safety Data Sheet
Bovine Thrombin 200/500**SARA Hazard Categories**

CAS# 77-86-1: acute.

CAS# 7647-14-5: acute.

CAS# 10043-52-4: acute, chronic, reactive.

CERCLA/SARA Section 313

None of the components are on this list.

Clean Air Act - Hazardous Air Pollutants (HAPs)

None of the components are on this list.

Clean Air Act - Class 1 Ozone Depletors

None of the components are on this list.

Clean Air Act - Class 2 Ozone Depletors

None of the components are on this list.

Clean Water Act - Hazardous Substances

None of the components are on this list.

Clean Water Act - Priority Pollutants

None of the components are on this list.

Clean Water Act - Toxic Pollutants

None of the components are on this list.

OSHA - Highly Hazardous

None of the components are on this list.

US State**State Right to Know****California Regulations**

CAS# 77-86-1: No information found

CAS# Not available: No information found

CAS# 7647-14-5: No information found

CAS# 9002-04-4: No information found

CAS# 10043-52-4: No information found

European/International Regulations**European Labelling in Accordance with EC Directives:**

Hazard Symbols:

Risk Phrases:

Safety Phrases:

WGK (Water Danger/Protection)

CAS# 77-86-1: 1

CAS# Not available: No information found

CAS# 7647-14-5: 0

CAS# 9002-04-4: 1

CAS# 10043-52-4: 0

United Kingdom Occupational Exposure Limits

No information found

Canadian DSL/NDSL

CAS# 77-86-1 is listed on Canada's DSL List.

CAS# 7647-14-5 is listed on Canada's DSL List.

Material Safety Data Sheet
Bovine Thrombin 200/500

CAS# 10043-52-4 is listed on Canada's DSL List.

Canadian WHMIS Classifications

No information found

Canadian Ingredient Disclosure List

CAS# 77-86-1 is not listed on Canada's Ingredient Disclosure List.

CAS# Not available is not listed on Canada's Ingredient Disclosure List.

CAS# 7647-14-5 is not listed on Canada's Ingredient Disclosure List.

CAS# 9002-04-4 is not listed on Canada's Ingredient Disclosure List.

CAS# 10043-52-4 is not listed on Canada's Ingredient Disclosure List.

Exposure Limits**Section 16 - Other Information**

Color information has been

MSDS Creation Date: September 2, 1997

Revision Date: March 22, 2006

The information above is believed to be accurate and represents the best information currently available to us. However, we make no warranty of merchantability or any other warranty, express or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes. In no event shall the company be liable for any claims, losses, or damages of any third party or for lost profits or any special, indirect, incidental, consequential, or exemplary damages howsoever arising, even if the company has been advised of the possibility of such damages.

Material Safety Data Sheet
Coagulation Control Plasma Level 1**Section 1 - Chemical Product and Company Identification****MSDS Name:**

Coagulation Control Plasma Level 1

Catalog Numbers:

100595, 100602, 100605, 176198, 200473, 200595, 200602, 23038027, 250473, 250595, 250602

Synonyms:

Fibrinogen Reference Plasma; Thrombostrate Level III.

Company Identification:Fisher Diagnostics
Fisher Scientific Company LLC
8365 Valley Pike
Middletown, VA 22645-0307**Company Phone Number:**

(800) 528-0494

Emergency Phone Number:

(800) 528-0494

CHEMTREC Phone Number:

800-424-9300

CHEMTREC (International):

703-527-3887

Section 2 - Composition, Information on Ingredients

CAS#	Chemical Name:	Percent	EINECS/ ELINCS		
Not available	Coagulation Control Plasma Level 1	Balance	Not available		
7365-45-9	HEPES	0.6%	230-907-9		
1310-73-2	Sodium hydroxide	0.08%	215-185-5	C	35
7447-41-8	Lithium chloride	0.04%	231-212-3		
9011-04-5	Polybrene	0.001%	Not available		

Material Safety Data Sheet
Coagulation Control Plasma Level 1**Section 3 - Hazards Identification****EMERGENCY OVERVIEW**

Appearance: white solid

Caution! Each unit of source material used in the preparation of this product has been tested by an FDA licensed method and found non-reactive for HBsAg and negative for antibodies to HIV and HCV. However, no known test method can offer complete assurance that products derived from human blood will not transmit hepatitis, AIDS, or other infectious diseases. This product, like all materials of human origin, should be handled as potentially infectious biological material. May cause irritation. May cause central nervous system effects.

Target Organs: none.

Potential Health Effects**Eye:**

May cause eye irritation.

Skin:

Prolonged and/or repeated contact may cause irritation and/or dermatitis. Product tests non-reactive for HBsAg and negative for antibodies to HIV and HCV. However, material should be handled as potentially infectious.

Ingestion:

May cause irritation of the digestive tract.

Inhalation:

Prolonged exposure may result in dizziness and general weakness.

Chronic:

No information found.

Section 4 - First Aid Measures**Eyes:**

Flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical aid immediately.

Skin:

Get medical aid. Flush skin with plenty of soap and water.

Ingestion:

If victim is conscious and alert, give 2-4 cupfuls of milk or water. Get medical aid.

Inhalation:

Get medical aid immediately. Remove from exposure and move to fresh air immediately. If not breathing, give artificial respiration. If breathing is difficult, give oxygen.

Notes to Physician:

Treat symptomatically and supportively.

**Material Safety Data Sheet**
Coagulation Control Plasma Level 1**Section 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.

Extinguishing Media:

For small fires, use water spray, dry chemical, carbon dioxide or chemical foam.

Autoignition Temperature:

Not applicable.

Explosion Limits:

Lower: Not available. Upper: Not available.

Flash Point:

Not applicable.

NFPA Rating:

(estimated) Health: 1; Flammability: 0; Reactivity: 0

Section 6 - Accidental Release Measures**General Information:**

Use proper personal protective equipment as indicated in Section 8.

Spills/Leaks:

In case of spill, sweep up solid or absorb liquid with inert material, then place into a biohazard container. Wear protective equipment.

Section 7 - Handling and Storage**Handling:**

Wash thoroughly after handling. Use with adequate ventilation. Avoid contact with skin and eyes. Avoid ingestion and inhalation.

Storage:

Store in a cool place in the original container and protect from sunlight.

Section 8 - Exposure Controls, Personal Protection**Engineering Controls:**

Good general ventilation should be sufficient to control airborne levels.

Exposure Limits

Chemical Name:	ACGIH	NIOSH	OSHA
HEPES	None of the components are on this list.	None of the components are on this list.	None of the components are on this list.
Sodium hydroxide	2 mg/m3 Ceiling	10 mg/m3 IDLH 2 mg/m3 Ceiling	2 mg/m3 TWA
Lithium chloride	None of the components are on this list.	None of the components are on this list.	None of the components are on this list.

**Material Safety Data Sheet**
Coagulation Control Plasma Level 1**Polybrene**None of the components
are on this list.None of the components
are on this list.None of the components
are on this list.**OSHA Vacated PELs****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 protective gloves to prevent skin exposure.

Clothing:

Wear appropriate protective clothing to prevent skin exposure.

Respirators:

Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced.

Section 9 - Physical and Chemical Properties**Physical State:** Solid**Color:** white**Odor:** Odorless.**pH:** No information found**Vapor Pressure:** No information found**Vapor Density:** No information found**Evaporation Rate:** No information found**Viscosity:** No information found**Boiling Point:** Not available.**Freezing/Melting Point:** No information found**Decomposition Temperature:** No information found**Solubility in water:** Not available.**Specific Gravity/Density:** No information found**Molecular Formula:** Not applicable.**Molecular Weight:** No information found**Section 10 - Stability and Reactivity****Chemical Stability:**

Stable under normal temperatures and pressures.

Conditions to Avoid:

None reported.

Incompatibilities with Other Materials

None reported.

Hazardous Decomposition Products

None.

Material Safety Data Sheet
Coagulation Control Plasma Level 1**Hazardous Polymerization**

Has not been reported

Section 11 - Toxicological Information**RTECS:**

CAS# 7365-45-9: TL6809000.

CAS# 1310-73-2: WB4900000.

CAS# 7447-41-8: OJ5950000.

CAS# 9011-04-5: MO1400000.

LD50/LC50:

CAS# 7365-45-9:

No information foundCAS# 1310-73-2:

Draize test, rabbit, eye: 400 ug Mild

Draize test, rabbit, eye: 1% Severe

Draize test, rabbit, eye: 50 ug/24H Severe

Draize test, rabbit, eye: 1 mg/24H Severe

Draize test, rabbit, skin: 500 mg/24H Severe.

CAS# 7447-41-8:

Draize test, rabbit, eye: 100 mg/24H Moderate

Draize test, rabbit, skin: 500 mg/24H Severe

Oral, mouse: LD50 = 1165 mg/kg

Oral, mouse: LD50 = 1165 mg/kg

Oral, rabbit: LD50 = 800 mg/kg

Oral, rabbit: LD50 = 775 mg/kg

Oral, rat: LD50 = 526 mg/kg

Oral, rat: LD50 = 1530 mg/kg

Skin, rabbit: LD50 = 1629 mg/kg

Skin, rat: LD50 = 1488 mg/kg.

CAS# 9011-04-5:

No information found

Carcinogenicity:

CAS# 7365-45-9: Not listed as a carcinogen by ACGIH, IARC, NIOSH, NTP, OSHA, or CA Prop 65.

CAS# 1310-73-2: Not listed as a carcinogen by ACGIH, IARC, NIOSH, NTP, OSHA, or CA Prop 65.

CAS# 7447-41-8: Not listed as a carcinogen by ACGIH, IARC, NIOSH, NTP, OSHA, or CA Prop 65.

CAS# 9011-04-5: Not listed as a carcinogen by ACGIH, IARC, NIOSH, NTP, OSHA, or CA Prop 65.

Epidemiology:

No information found

Teratogenicity:

No information found

Reproductive:

No information found

Mutagenicity:

No information found

Neurotoxicity:

No information found

Other:

See actual entry in RTECS for complete information.

**Material Safety Data Sheet**
Coagulation Control Plasma Level 1**Section 12 - Ecological Information**

No information found

Section 13 - Disposal Considerations

Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. US EPA guidelines for the classification determination are listed in 40 CFR Part 261.3. Additionally, waste generators must consult state and local hazardous waste regulations to ensure complete and accurate classification.

RCRA P Series Wastes

None of the components are on this list.

RCRA U Series Wastes

None of the components are on this list.

Section 14 - Transport Information**US DOT****Canadian TDG**

Proper Shipping Name: No information found

No information found

Hazard Class:

UN Number:

Packing Group:

Section 15 - Regulatory Information**US Federal****TSCA**

CAS# 7365-45-9 is listed on the TSCA Inventory.
CAS# 1310-73-2 is listed on the TSCA Inventory.
CAS# 7447-41-8 is listed on the TSCA Inventory.
CAS# 9011-04-5 is not listed on the TSCA Inventory. It is for research and development use only.

Health and Safety Reporting List

None of the components are on this list.

Chemical Test Rules

None of the components are on this list.

TSCA Section 12b

None of the components are on this list.

TSCA Significant New Use Rule (SNUR)

None of the components are on this list.

CERCLA Hazardous Substances and corresponding RQs

CAS# 1310-73-2: 1000 lb final RQ; 454 kg final RQ

SARA Section 302 Extremely Hazardous Substances

None of the components are on this list.



Material Safety Data Sheet

Coagulation Control Plasma Level 1

SARA Hazard Categories

CAS# 7365-45-9: acute.

CAS# 1310-73-2: acute, reactive.

CAS# 7447-41-8: acute, chronic.

CERCLA/SARA Section 313

None of the components are on this list.

Clean Air Act - Hazardous Air Pollutants (HAPs)

None of the components are on this list.

Clean Air Act - Class 1 Ozone Depletors

None of the components are on this list.

Clean Air Act - Class 2 Ozone Depletors

None of the components are on this list.

Clean Water Act - Hazardous Substances

CAS# 1310-73-2 is listed as a Hazardous Substance under the CWA.

Clean Water Act - Priority Pollutants

None of the components are on this list.

Clean Water Act - Toxic Pollutants

None of the components are on this list.

OSHA - Highly Hazardous

None of the components are on this list.

US State**State Right to Know**

Sodium hydroxide can be found on the following state Right-to-Know lists: California, New Jersey, Pennsylvania, Minnesota, Massachusetts.

California Regulations

CAS# Not available: No information found

CAS# 7365-45-9: No information found

CAS# 1310-73-2: No information found

CAS# 7447-41-8: No information found

CAS# 9011-04-5: No information found

European/International Regulations**European Labelling in Accordance with EC Directives:**

Hazard Symbols:

Risk Phrases:

Safety Phrases:

WGK (Water Danger/Protection)

CAS# Not available: No information found

CAS# 7365-45-9: No information found

CAS# 1310-73-2: 1

CAS# 7447-41-8: 1

CAS# 9011-04-5: 2

United Kingdom Occupational Exposure Limits

No information found

Material Safety Data Sheet
Coagulation Control Plasma Level 1**Canadian DSL/NDSL**

CAS# 7365-45-9 is listed on Canada's DSL List.
CAS# 1310-73-2 is listed on Canada's DSL List.
CAS# 7447-41-8 is listed on Canada's DSL List.

Canadian WHMIS Classifications

This product does not have a WHMIS classification.

Canadian Ingredient Disclosure List

CAS# Not available is not listed on Canada's Ingredient Disclosure List.
CAS# 7365-45-9 is not listed on Canada's Ingredient Disclosure List.
CAS# 1310-73-2 is listed on Canada's Ingredient Disclosure List.
CAS# 7447-41-8 is not listed on Canada's Ingredient Disclosure List.
CAS# 9011-04-5 is not listed on Canada's Ingredient Disclosure List.

Exposure Limits

CAS# 1310-73-2: OEL-AUSTRALIA:TWA 2 mg/m3
OEL-BELGIUM:STEL 2 mg/m3
OEL-DENMARK:TWA 2 mg/m3
OEL-FINLAND:TWA 2 mg/m3
OEL-FRANCE:TWA 2 mg/m3
OEL-GERMANY:TWA 2 mg/m3
OEL-JAPAN:STEL 2 mg/m3
OEL-THE NETHERLANDS:TWA 2 mg/m3
OEL-THE PHILIPPINES:TWA 2 mg/m3
OEL-SWEDEN:TWA 2 mg/m3
OEL-SWITZERLAND:TWA 2 mg/m3;STEL 4 mg/m3
OEL-THAILAND:TWA 2 mg/m3
OEL-TURKEY:TWA 2 mg/m3
OEL-UNITED KINGDOM:TWA 2 mg/m3;STEL 2 mg/m3
OEL IN BULGARIA, COLOMBIA, JORDAN, KOREA check ACGIH TLV
OEL IN NEW ZEALAND, SINGAPORE, VIETNAM check ACGI TLV

Section 16 - Other Information

Color information has been
MSDS Creation Date: September 2, 1997
Revision Date: March 16, 2007

The information above is believed to be accurate and represents the best information currently available to us. However, we make no warranty of merchantability or any other warranty, express or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes. In no event shall the company be liable for any claims, losses, or damages of any third party or for lost profits or any special, indirect, incidental, consequential, or exemplary damages howsoever arising, even if the company has been advised of the possibility of such damages.

**Material Safety Data Sheet**
Imidazole Buffered Saline**Section 1 - Chemical Product and Company Identification****MSDS Name:**

Imidazole Buffered Saline

Catalog Numbers:

100647, 200647, 23257970, 250647, 257964

Synonyms:

None.

Company Identification:Fisher Diagnostics
Fisher Scientific Company LLC
8365 Valley Pike
Middletown, VA 22645-0307**Company Phone Number:**

(800) 528-0494

Emergency Phone Number:

(800) 528-0494

CHEMTREC Phone Number:

800-424-9300

CHEMTREC (International):

703-527-3887

Section 2 - Composition, Information on Ingredients

CAS#	Chemical Name:	Percent	EINECS/ ELINCS		
7732-18-5	Water	Balance	231-791-2		
7647-14-5	Sodium chloride	0.6 %	231-598-3		
6923-01-9	Imidazole	0.34 %	Not available		
26628-22-8	Sodium azide	0.33 %	247-852-1		
68-04-2	Trisodium citrate anhydrous	0.15	200-675-3		
7647-01-0	Hydrogen chloride	0.14 %	231-595-7	C	34 37

Section 3 - Hazards Identification**EMERGENCY OVERVIEW***Appearance: clear, colorless liquid**Caution! May cause eye, skin, and respiratory tract irritation.**Target Organs: none.*

Material Safety Data Sheet
Imidazole Buffered Saline**Potential Health Effects****Eye:**

May cause eye irritation.

Skin:

May cause skin irritation.

Ingestion:

May cause gastrointestinal irritation with nausea, vomiting and diarrhea.

Inhalation:

May cause respiratory tract irritation.

Chronic:

No information found.

Section 4 - First Aid Measures**Eyes:**

Immediately flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical aid immediately.

Skin:

Flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Get medical aid if irritation develops or persists.

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.

Inhalation:

Remove from exposure and move 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 supportively.

Section 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.

Extinguishing Media:

For small fires, use dry chemical, carbon dioxide, water spray or alcohol-resistant foam.

Autoignition Temperature:

Not applicable.

Explosion Limits:

Lower: Not available. Upper: Not available.

Flash Point:

Not applicable.

NFPA Rating:

Not published.

Material Safety Data Sheet

Imidazole Buffered Saline

Section 6 - Accidental Release Measures

General Information:

Use proper personal protective equipment as indicated in Section 8.

Spills/Leaks:

Absorb spill with inert material (e.g. vermiculite, sand or earth), then place in suitable container. Clean up spills immediately, observing precautions in the Protective Equipment section.

Section 7 - Handling and Storage

Handling:

Wash thoroughly after handling. Wash thoroughly after handling. Remove contaminated clothing and wash before reuse. Use with adequate ventilation. Do not get in eyes, on skin, or on clothing. Do not ingest or inhale.

Storage:

Store in a cool place in the original container and protect from sunlight. Keep container closed when not in use.

Section 8 - Exposure Controls, Personal Protection

Engineering Controls:

Use adequate ventilation to keep airborne concentrations low.

Exposure Limits

Chemical Name:	ACGIH	NIOSH	OSHA
Water	None of the components are on this list.	None of the components are on this list.	None of the components are on this list.
Sodium chloride	None of the components are on this list.	None of the components are on this list.	None of the components are on this list.
Imidazole	None of the components are on this list.	None of the components are on this list.	None of the components are on this list.
Sodium azide	0.29 mg/m3 Ceiling (as NaN ₃); 0.11 ppm Ceiling (vapor, as hydrazoic acid)	0.1 ppm Ceiling (as HN ₃); 0.3 mg/m3 Ceiling (as NaN ₃)	None of the components are on this list.
Trisodium citrate anhydrous	None of the components are on this list.	None of the components are on this list.	None of the components are on this list.
Hydrogen chloride	2 ppm Ceiling	50 ppm IDLH 5 ppm Ceiling; 7 mg/m3 Ceiling	5 ppm Ceiling; 7 mg/m3 Ceiling

OSHA Vacated PELs

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 protective gloves to prevent skin exposure.

Clothing:

Wear appropriate protective clothing to prevent skin exposure.

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Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced.

Section 9 - Physical and Chemical Properties**Physical State:** Liquid**Color:** clear, colorless**Odor:** None reported.**pH:** No information found**Vapor Pressure:** No information found**Vapor Density:** No information found**Evaporation Rate:** No information found**Viscosity:** No information found**Boiling Point:** Not available.**Freezing/Melting Point:** No information found**Decomposition Temperature:** No information found**Solubility in water:** Not available.**Specific Gravity/Density:** No information found**Molecular Formula:** Mixture**Molecular Weight:** No information found**Section 10 - Stability and Reactivity****Chemical Stability:**

Stable under normal temperatures and pressures.

Conditions to Avoid:

Incompatible materials.

Incompatibilities with Other Materials

Strong oxidants.

Hazardous Decomposition Products

Hydrogen chloride.

Hazardous Polymerization

Has not been reported

Section 11 - Toxicological Information**RTECS:**

CAS# 7732-18-5: ZC0110000.

CAS# 7647-14-5: VZ4725000.

CAS# 6923-01-9 unlisted.

CAS# 26628-22-8: VY8050000.

CAS# 68-04-2: GE8300000.

CAS# 7647-01-0: MW4025000; MW4031000.

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CAS# 7732-18-5:

Oral, rat: LD50 = >90 mL/kg.

CAS# 7647-14-5:

Draize test, rabbit, eye: 100 mg Mild

Draize test, rabbit, eye: 100 mg/24H Moderate

Draize test, rabbit, eye: 10 mg Moderate

Draize test, rabbit, skin: 50 mg/24H Mild

Draize test, rabbit, skin: 500 mg/24H Mild

Inhalation, rat: LC50 = >42 gm/m³/1H

Oral, mouse: LD50 = 4 gm/kg

Oral, rat: LD50 = 3000 mg/kg

Skin, rabbit: LD50 = >10 gm/kg.

CAS# 6923-01-9:

No information foundCAS# 26628-22-8:

Inhalation, mouse: LC50 = 32400 ug/m³Inhalation, rat: LC50 = 37 mg/m³

Oral, mouse: LD50 = 27 mg/kg

Oral, rat: LD50 = 27 mg/kg

Skin, rabbit: LD50 = 20 mg/kg

Skin, rat: LD50 = 50 mg/kg.

CAS# 68-04-2:

No information foundCAS# 7647-01-0:

Inhalation, mouse: LC50 = 1108 ppm/1H

Inhalation, mouse: LC50 = 20487 mg/m³/5MInhalation, mouse: LC50 = 3940 mg/m³/30MInhalation, mouse: LC50 = 8300 mg/m³/30M

Inhalation, rat: LC50 = 3124 ppm/1H

Inhalation, rat: LC50 = 60938 mg/m³/5MInhalation, rat: LC50 = 7004 mg/m³/30MInhalation, rat: LC50 = 45000 mg/m³/5MInhalation, rat: LC50 = 8300 mg/m³/30M

Oral, rabbit: LD50 = 900 mg/kg.

Carcinogenicity:

CAS# 7732-18-5: Not listed as a carcinogen by ACGIH, IARC, NIOSH, NTP, OSHA, or CA Prop 65.

CAS# 7647-14-5: Not listed as a carcinogen by ACGIH, IARC, NIOSH, NTP, OSHA, or CA Prop 65.

CAS# 6923-01-9: Not listed as a carcinogen by ACGIH, IARC, NIOSH, NTP, OSHA, or CA Prop 65.

CAS# 26628-22-8: Not listed as a carcinogen by ACGIH, IARC, NIOSH, NTP, OSHA, or CA Prop 65.

CAS# 68-04-2: Not listed as a carcinogen by ACGIH, IARC, NIOSH, NTP, OSHA, or CA Prop 65.

CAS# 7647-01-0

IARC: Group 3 (not classifiable)

Epidemiology:

No information found

Teratogenicity:

No information found

Reproductive:

No information found

Mutagenicity:

No information found

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No information found

Other:

See actual entry in RTECS for complete information.

Section 12 - Ecological Information

No information found

Section 13 - Disposal Considerations

Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. US EPA guidelines for the classification determination are listed in 40 CFR Part 261.3. Additionally, waste generators must consult state and local hazardous waste regulations to ensure complete and accurate classification.

RCRA P Series Wastes

CAS# 26628-22-8: waste number P105.

RCRA U Series Wastes

None of the components are on this list.

Section 14 - Transport Information**US DOT****Canadian TDG****Proper Shipping Name:** No information found

No information found

Hazard Class:**UN Number:****Packing Group:****Section 15 - Regulatory Information****US Federal****TSCA**

CAS# 7732-18-5 is listed on the TSCA Inventory.
CAS# 7647-14-5 is listed on the TSCA Inventory.
CAS# 6923-01-9 is not listed on the TSCA Inventory. It is for research and development use only.
CAS# 26628-22-8 is listed on the TSCA Inventory.
CAS# 68-04-2 is listed on the TSCA Inventory.
CAS# 7647-01-0 is listed on the TSCA Inventory.

Health and Safety Reporting List

None of the components are on this list.

Chemical Test Rules

None of the components are on this list.

TSCA Section 12b

None of the components are on this list.

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None of the components are on this list.

CERCLA Hazardous Substances and corresponding RQs

CAS# 26628-22-8: 1000 lb final RQ; 454 kg final RQ

CAS# 7647-01-0: 5000 lb final RQ; 2270 kg final RQ

SARA Section 302 Extremely Hazardous Substances

CAS# 26628-22-8: 500 lb TPQ (This material is a reactive solid. The TPQ does not default to 10000 pounds for non-powder, non-molten, non-solvent form)

CAS# 7647-01-0: 500 lb TPQ (gas only)

SARA Hazard Categories

CAS# 7647-14-5: acute.

CAS# 26628-22-8: acute, chronic, reactive.

CAS# 7647-01-0: acute.

CERCLA/SARA Section 313

Sodium azide is not at a high enough concentration to be reportable under Section 313.

Hydrogen chloride is not at a high enough concentration to be reportable under Section 313.

Clean Air Act - Hazardous Air Pollutants (HAPs)

CAS# 7647-01-0 is listed as a hazardous air pollutant (HAP).

Clean Air Act - Class 1 Ozone Depletors

None of the components are on this list.

Clean Air Act - Class 2 Ozone Depletors

None of the components are on this list.

Clean Water Act - Hazardous Substances

CAS# 7647-01-0 is listed as a Hazardous Substance under the CWA.

Clean Water Act - Priority Pollutants

None of the components are on this list.

Clean Water Act - Toxic Pollutants

None of the components are on this list.

OSHA - Highly Hazardous

CAS# 7647-01-0 is considered highly hazardous by OSHA.

US State**State Right to Know**

Sodium azide can be found on the following state Right-to-Know lists: California, New Jersey, Pennsylvania, Minnesota, Massachusetts.

Hydrogen chloride can be found on the following state Right-to-Know lists: California, New Jersey, Pennsylvania, Minnesota, Massachusetts.

California Regulations

CAS# 7732-18-5: No information found

CAS# 7647-14-5: No information found

CAS# 6923-01-9: No information found

CAS# 26628-22-8: No information found

CAS# 68-04-2: No information found

CAS# 7647-01-0: No information found

European/International Regulations

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Hazard Symbols:

Risk Phrases:

Safety Phrases:

WGK (Water Danger/Protection)

CAS# 7732-18-5: No information found

CAS# 7647-14-5: 0

CAS# 6923-01-9: No information found

CAS# 26628-22-8: 2

CAS# 68-04-2: 0

CAS# 7647-01-0: 1

United Kingdom Occupational Exposure Limits

No information found

Canadian DSL/NDSL

CAS# 7732-18-5 is listed on Canada's DSL List.

CAS# 7647-14-5 is listed on Canada's DSL List.

CAS# 26628-22-8 is listed on Canada's DSL List.

CAS# 68-04-2 is listed on Canada's DSL List.

CAS# 7647-01-0 is listed on Canada's DSL List.

Canadian WHMIS Classifications

No information found

Canadian Ingredient Disclosure List

CAS# 7732-18-5 is not listed on Canada's Ingredient Disclosure List.

CAS# 7647-14-5 is not listed on Canada's Ingredient Disclosure List.

CAS# 6923-01-9 is not listed on Canada's Ingredient Disclosure List.

CAS# 26628-22-8 is listed on Canada's Ingredient Disclosure List.

CAS# 68-04-2 is not listed on Canada's Ingredient Disclosure List.

CAS# 7647-01-0 is listed on Canada's Ingredient Disclosure List.

Exposure Limits

CAS# 26628-22-8: OEL-AUSTRALIA:TWA 0.1 ppm (0.3 mg/m3)

OEL-BELGIUM:STEL 0.11 ppm (0.3 mg/m3)

OEL-DENMARK:TWA 0.3 mg/m3

OEL-FINLAND:TWA 0.1 ppm (0.3 mg/m3);STEL 0.3 ppm (0.9 mg/m3)

OEL-FRANCE:STEL 0.1 ppm (0.3 mg/m3)

OEL-GERMANY:TWA 0.07 ppm (0.2 mg/m3)

OEL-THE NETHERLANDS:TWA 0.1 ppm (0.3 mg/m3)

OEL-SWITZERLAND:TWA 0.07 ppm (0.2 mg/m3)

OEL-UNITED KINGDOM:TWA 0.1 ppm (0.3 mg/m3);STEL

OEL IN BULGARIA, COLOMBIA, JORDAN, KOREA check ACGIH TLV

OEL IN NEW ZEALAND, SINGAPORE, VIETNAM check ACGI TLV

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CAS# 7647-01-0: OEL-AUSTRALIA:TWA 5 ppm (7 mg/m³)
OEL-AUSTRIA:TWA 5 ppm (7 mg/m³)
OEL-BELGIUM:STEL 5 ppm (7.7 mg/m³)
OEL-DENMARK:STEL 5 ppm (7 mg/m³)
OEL-FINLAND:STEL 5 ppm (7 mg/m³);Skin
OEL-FRANCE:STEL 5 ppm (7.5 mg/m³)
OEL-GERMANY:TWA 5 ppm (7 mg/m³)
OEL-HUNGARY:STEL 5 mg/m³
OEL-JAPAN:STEL 5 ppm (7.5 mg/m³)
OEL-THE NETHERLANDS:TWA 5 ppm (7 mg/m³)
OEL-THE PHILIPPINES:TWA 5 ppm (7 mg/m³)
OEL-POLAND:TWA 5 mg/m³
OEL-RUSSIA:STEL 5 ppm (5 mg/m³)
OEL-SWEDEN:STEL 5 ppm (8 mg/m³)
OEL-SWITZERLAND:TWA 5 ppm (7.5 mg/m³);STEL 10 ppm (15 mg/m³)
OEL-THAILAND:TWA 5 ppm (7 mg/m³)
OEL-TURKEY:TWA 5 ppm (7 mg/m³)
OEL-UNITED KINGDOM:TWA 5 ppm (7 mg/m³);STEL 5 ppm (7 mg/m³)
OEL IN BULGARIA, COLOMBIA, JORDAN, KOREA check ACGIH TLV
OEL IN NEW ZEALAND, SINGAPORE, VIETNAM check ACGI TLV

Section 16 - Other Information

Color information has been
MSDS Creation Date: September 2, 1997
Revision Date: March 22, 2006

The information above is believed to be accurate and represents the best information currently available to us. However, we make no warranty of merchantability or any other warranty, express or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes. In no event shall the company be liable for any claims, losses, or damages of any third party or for lost profits or any special, indirect, incidental, consequential, or exemplary damages howsoever arising, even if the company has been advised of the possibility of such damages.