Immunochemistry Technologies, LLC
www.immunochemistry.com
9401 James Avenue South, Suite 155
Bloomington, MN 55431-2500
phone 1-800-829-3194, 952-888-8788
fax 952-888-8988

MATERIAL SAFETY DATA SHEET

Document: F11-6156-6156-A
Effective Date: 8/3/05
Supersedes: none

EMERGENCY # FOR NATIONAL RESPONSE CENTER (800) 424-8802

CHEMICAL IDENTIFICATION

Product Name: Ph-F, Cholinesterase Reagent

Catalog #:	5119 and 6156
Synonyms:	Physostigmine analog / eseroline / eserine / Ph-F stock / Ph-F solution
CAS # of Active Reagent:	None designated.
Chemical Name of Active Reagent:	Eserine-C6-fluorescein Conjugate (5-(5-pentylcarbamoyl-eseroline)thioureidyl fluorescein)
Molecular Weight of Active Reagent:	735.85
Chemical Formula of Active Reagent:	$C_{40}H_{41}N_5O_7S$

HAZARDS IDENTIFICATION

Not known.

CHARACTERISTICS

Ph-F Reagent is a brownish orange powder.

Boiling point °C:	No data available.
Vapor pressure (mm Hg):	No data available.
Vapor density:	No data available.
Solubility in water:	Very low.
Specific gravity:	Not applicable.
% Volatile by volume:	Not applicable.
Evaporation rate:	No data available.
pH:	Not applicable to a powder.

STORAGE AND STABILITY

Ph-F Reagent is stable for 36 months when stored at 2°C - 8°C and protected from light. When reconstituted to 255X, store Ph-F stock at or below -20°C for 6 months protected from light. When diluted to 51X, use Ph-F immediately. Ph-F reagent is light sensitive. It will not decompose in a hazardous manner. Hazardous polymerization will not occur.

HEALTH HAZARD

May enter the body through inhalation, ingestion, and skin and eye contact.

SAFETY CONTROL MEASURES

Gloves and standard laboratory protective clothing and eyewear are recommended. Safe laboratory practices should be followed.

EXPOSURE GUIDELINES

No exposure guidelines are available.

FIRST AID MEASURES

Avoid prolonged exposure. Remove contaminated clothing and shoes, and wash before reuse.

Skin:	Wash thoroughly with soap and water for at least 15 minutes. Launder contaminated clothing and shoes.
Eyes:	Immediately flush with water for 15 minutes.
Ingestion:	If conscious, give large amounts of water, seek medical advice.
Inhalation:	Remove to fresh air. If not breathing, administer CPR. If breathing is difficult, give oxygen, seek medical advice.

FIRE/EXPLOSION HAZARD

Ph-F Reagent is not a fire hazard nor an explosion hazard. Use any means suitable for extinguishing surrounding fire. It is not necessary to use any special firefighting procedures. Water spray, carbon dioxide, dry chemical powder or appropriate foam can all be used.

ACCIDENTAL RELEASE MEASURES

For release of large amounts of material, wear safety glasses and rubber gloves. Stop source of leak and isolate spill area. Collect material in an appropriate container and dispose with regular trash. Wash exposed surfaces with acetone or alcohol and rinse with copious amounts of soap and water. Dispose of all waste in accordance with all national, state, and local regulations.

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MATERIAL SAFETY DATA SHEET

Document: F11-535-6164-B
Effective Date: 8/3/05
Supersedes: none

EMERGENCY # FOR NATIONAL RESPONSE CENTER (800) 424-8802

SECTION 1.

CHEMICAL IDENTIFICATION

Product Name:	**10X Cellular Wash Buffer**
Catalog #:	535, 6164, 6165
Synonyms:	None.
CAS #:	Not applicable to mixtures.
Chemical Formula:	Not applicable to mixtures.

SECTION 2.
HAZARDS IDENTIFICATION

Contains sodium azide. Irritant to skin, eyes, and upper respiratory tract. Dilute solutions are less toxic. Overexposure may cause headache, dizziness, gastrointestinal irritation, blurred vision, nausea, vomiting, low blood pressure, slow heart rate, reduced body ph and temperature, convulsions, and unconsciousness. May be fatal if swallowed or absorbed through skin. Do not get in eyes, on skin, or on clothing.

Contains phosphate buffered saline. Irritant to eyes, skin, and respiratory system.

SECTION 3.
CHARACTERISTICS

10X Cellular Wash Buffer is a slightly yellow liquid with a very slight odor.

Boiling point °f:	No data available.
Vapor pressure (mm Hg):	No data available.
Vapor density:	No data available.
Solubility in water:	Soluble at room temperature.
Specific gravity:	Not applicable.
% Volatile by volume:	Not applicable.
Evaporation rate:	No data available.
pH:	6.8-7.0.

SECTION 4.
STORAGE AND STABILITY

10X Cellular Wash Buffer is stable for 18 months when stored at 2°C - 8°C under ordinary conditions of use and storage. Keep in a tightly closed container. Do not allow evaporation to dryness. Containers may be hazardous when empty since they contain product residues.

Because it contains sodium azide, 10X Cellular Wash Buffer may generate hazardous decomposition products such as hydrozoic acid fumes and oxides of phosphorus, sodium, and nitrogen. Hazardous polymerization will not occur. This product contains sodium azide, which can be incompatible with strong acids and oxidizers such as: benzoyl chloride; potassium hydroxide; bromine; carbon disulfide; chromyl chloride; copper; dibromalononitrile; dimethyl sulfate; lead; barium carbonate; sulfuric acid; and nitric acid.

SECTION 5.
HEALTH HAZARD DATA

May enter the body through inhalation, ingestion, eye, and skin contact.

SECTION 6.
SAFETY CONTROL MEASURES

Wear lab coat, gloves, chemical safety glasses, face shield, boots, coveralls, etc. as appropriate to avoid skin and eye contact. Maintain eye wash fountain and safety shower in work area. Gloves and standard laboratory protective clothing and eyewear are recommended. Safe laboratory practices should be followed. A system of general exhaust is recommended to keep employee exposures below airborne exposure limits. Local exhaust is preferred.

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Supersedes: none

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SECTION 7.
AIRBORNE EXPOSURE LIMITS

Hydrazoic acid, HN_3 , vapor is present where NaN_3 is handled.

NIOSH recommended exposure limit (rel) for sodium azide, NaN_3:
0.1ppm as HN_3 (Ceiling) skin.
0.3 mg/m^3 as NaN_3 (Ceiling) skin.

ACGIH threshold limit value (TLV) for sodium azide, NaN_3:
0.11 ppm as HN_3 (Ceiling) A4, not classifiable as a human carcinogen.
0.29 mg/m^3 as NaN_3 (Ceiling), A4, not classifiable as a human carcinogen.

SECTION 8.
FIRST AID MEASURES

Get immediate medical assistance for all cases of overexposure. Avoid prolonged exposure. Remove contaminated clothing and shoes, and wash before reuse.

Skin:	Wash skin thoroughly with soap and water for at least 15 minutes. Remove contaminated clothing and shoes, and wash before reuse.
Eyes:	Flush with water for at least 15 minutes.
Ingestion:	If conscious, give large amounts of water. Induce vomiting. Seek medical attention immediately.
Inhalation:	Remove to fresh air. If not breathing, administer CPR. If breathing is difficult, give oxygen.

SECTION 9.
FIRE/EXPLOSION HAZARD DATA

10X Cellular Wash Buffer is not a fire hazard nor an explosion hazard. Use any means suitable for extinguishing surrounding fire. Water spray, carbon dioxide, dry chemical powder or appropriate foam can all be used. Firefighters should wear proper protective equipment and NIOSH-approved self-contained breathing apparatus.

SECTION 10. ACCIDENTAL RELEASE MEASURES

For release of large amounts of material, wear respirator, chemical safety glasses, rubber boots, and rubber gloves. Stop source of leak and isolate spill area. Ventilate area. Collect liquid in an appropriate container or absorb with an inert material (such as vermiculite, dry sand, charcoal) and place in chemical waste container. Us regulations (CERCLA) require reporting spills and releases to soil, water, and air in excess of reportable quantities. Toll free number to US coast guard national response center is (800) 424-8802.

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MATERIAL SAFETY DATA SHEET

Document: F11-01-078-02-B
Effective Date: 10/10/02
Supercedes: F11-01-078-02-A

EMERGENCY # FOR NATIONAL RESPONSE CENTER (800) 424-8802

SECTION 1.

CHEMICAL IDENTIFICATION

Product Name:	**Fixative**
Catalog #:	500036, 536, 600036, and 636
Synonyms:	Apoptosis Fixative / FAM-FMK Fixative
CAS #:	Not applicable to mixtures.
Chemical Formula:	Not applicable to mixtures.

SECTION 2.
HAZARDS IDENTIFICATION

Contains formaldehyde. Potential cancer hazard. Repeated or prolonged exposure increases the risk. Formaldehyde exposure has been linked to cancers of the lungs, vasopharynx, oropharynx, and nasal passages. Eye contact may cause permanent damage. Flammable liquid and vapor.

Contains methanol. May be fatal or cause blindness if swallowed. Cannot be made non-poisonous. Harmful if inhaled or absorbed through skin. Strong sensitizer. May cause allergic reaction.

Contains PBS. Irritant to eyes, skin, and respiratory system. Do not get in eyes, on skin, or on clothing.

SECTION 3.
CHARACTERISTICS

Fixative is a clear, colorless solution with a moderately pungent odor.

Boiling point °f:	No data available.
Vapor pressure (mm Hg):	No data available.
Vapor density:	No data available.
Solubility in water:	Soluble at room temperature.
Specific gravity:	Not applicable.
% Volatile by volume:	Not applicable.
Evaporation rate:	No data available.
pH:	7.3-7.7

SECTION 4.
STORAGE AND STABILITY

Fixative is stable for 18 months when stored at RT under ordinary conditions of use and storage. Avoid heat, sparks, open flame. Product is somewhat volatile. Keep in a tightly closed container. Protect against physical damage. Separate from oxidizing and alkaline material. Store apart from any source of ignition. Containers may be hazardous when empty since they contain product residues. Do not breathe vapor or mist.

It may generate hazardous decomposition products such as formic acid. Hazardous polymerization will not occur. This product is incompatible with strong acids, oxidizers, isocyanates, strong alkalines, phenol, anhydrides, oxides and inorganic acids. Contact with HCl may cause formation of the potent carcinogen, bischloromethyl ether.

SECTION 5.
HEALTH HAZARD DATA

May enter the body through inhalation, ingestion, eye, and skin contact.

SECTION 6.
SAFETY CONTROL MEASURES

Personal protective equipment, such as lab coat, safety glasses with side shields, gloves should be worn at all times while handling this product. Use of this product should be restricted to a fume hood or equivalent ventilation conditions. Maintain eye wash fountain and safety shower in work area. Safe laboratory practices should be followed. Always wash thoroughly after handling. Never take internally. Do not breathe vapor or mist.

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MATERIAL SAFETY DATA SHEET

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Prepared 2/13/01

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SECTION 7.
EXPOSURE GUIDELINES:

AGENCY	component	TWA, STEL, OR CL	UNITS	VALUE
OSHA(PEL)	Methanol	TWA	PPM	200
OSHA (PEL)	Methanol	TWA	Mg/M^3	260
OSHA(PEL)	Methanol	STEL	PPM	250
OSHA(PEL)	Methanol	STEL	Mg/M^3	325
OSHA(PEL)	Formaldehyde	TWA	PPM	0.75
OSHA(PEL)	Formaldehyde	STEL	PPM	2
ACGIH(TLV)	Methanol	TWA	PPM	200
ACGIH(TLV)	Methanol	TWA	Mg/M^3	252
ACGIH(TLV)	Methanol	STEL	PPM	250
ACGIH(TLV)	Methanol	STEL	Mg/M^3	328
ACGIH(TLV	Formaldehyde	STEL	PPM	0.3
ACGIH(TLV)	Formaldehyde	STEL	Mg/M^3	0.37
ACGIH(TLV)	Formaldehyde	CL	PPM	0.3

SECTION 8.
FIRST AID MEASURES

Get immediate medical assistance for all cases of overexposure. Avoid prolonged exposure. Remove contaminated clothing and shoes, and wash before reuse.

Skin: Wash thoroughly with plenty of soap and water for at least 15 minutes. Remove contaminated clothing and shoes. Launder contaminated clothing. Throw away contaminated shoes.
Eyes: Immediately flush with plenty of water for at least 15 minutes.
Ingestion: If conscious, give large amounts of water, milk, or activated charcoal. Seek medical attention immediately.
Inhalation: Remove to fresh air. If not breathing, administer CPR. If breathing is difficult, give oxygen.

SECTION 9.
FIRE/EXPLOSION HAZARD

Fixative is considered a moderate fire hazard and a moderate explosion hazard. Formaldehyde reacts with nitrogen dioxide, nitromethane, perchloric acid and aniline, or peroxyformic acid to yield explosive compounds. Use dry chemical, “alcohol foam”, carbon dioxide to extinguish fires. Firefighters should wear proper protective equipment and NIOSH-approved self-contained breathing apparatus.

SECTION 10. ACCIDENTAL
RELEASE MEASURES

For large spills, evacuate area of all unnecessary employees. Wear appropriate personal protective equipment including: neoprene (or equivalent) gloves, safety glasses with side shields, and lab coat . Eliminate any ignition sources until the area is determined to be free from explosion or fire hazards. Contain the spill and dispose of in compliance with federal, state, and local regulations. Us regulations (CERCLA) require reporting spills and releases to soil, water, and air in excess of reportable quantities. Toll free number to US coast guard national response center is (800) 424-8802.

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MATERIAL SAFETY DATA SHEET

Document: F11-01-084-02-B
Effective Date: 10/10/02
Supercedes: F11-01-084-02-A

EMERGENCY # FOR NATIONAL RESPONSE CENTER (800) 424-8802

CHEMICAL IDENTIFICATION

Product Name: **Hoechst Stain at 200 ug/mL**

Catalog #:	500056, 556, 600039, and 639
Synonyms:	Hoechst 33342, trihydrochloride, trihydrate
CAS # of Active Reagent:	23491-52-3
Chemical Name of Active Reagent:	Phenol, 4-[5-(4-methyl-1-piperazinyl)[2,5'-bi-1H-benzimidazol]-2'-yl]-trihydrochloride
Molecular Weight of Active Reagent:	615.99
Chemical Formula of Active Reagent:	$C_{27}H_{37}Cl_3N_6O_4$

HAZARDS IDENTIFICATION

Contains Hoechst 33342 stain reagent at 200 ug/ml in DI H_2O. Hoechst 33342 exhibits mutagenic properties as demonstrated by DNA damage to hamster lung cells and mouse fibroblast cells at 1 uM/L and 5 uM/L concentrations respectively. This reagent also effected DNA inhibition in hamster lung cells at 1 uM/L. Hoechst 33342 is not currently listed as a carcinogen by NTP, IARC or OSHA but should be treated as such. Symptoms of exposure are undefined but this staining reagent should always be handled using protective gloves, clothing, and eyewear.

CHARACTERISTICS

Hoechst is a clear light green, odorless solution.

Boiling point °C:	100
Vapor pressure (mm Hg):	No data available.
Vapor density:	No data available.
Solubility in water:	Soluble at room temperature.
Specific gravity:	Not applicable.
% Volatile by volume:	Not applicable.
Evaporation rate:	No data available.
pH:	3.9 – 4.4

STORAGE AND STABILITY

Hoechst 33342 stain, as supplied by ICT, is stable for 18 months at 2–8ºC when stored in amber vials and protected from light. Always store protected from light, and keep in a tightly closed vial. Vials may be hazardous when empty since they contain product residues. Do not breathe vapor or mist.

HEALTH HAZARD

Hoechst 33342 may enter the body through inhalation, ingestion, and skin and eye contact.

SAFETY CONTROL MEASURES

Personal protective equipment, such as lab coat, safety glasses with side shields, gloves should be worn at all times while handling this product. Maintain eye wash fountain and safety shower in work area. Safe laboratory practices should be followed. Always wash thoroughly after handling. Never take internally. Do not breathe vapor or mist.

EXPOSURE GUIDELINES

No exposure guidelines are available.

FIRST AID MEASURES

Hoechst 33342 could be a potential carcinogen; avoid any contact with skin, eyes, or take internally. Carefully remove and dispose of protective gloves after use. Remove contaminated clothing and shoes, and wash before reuse.

Skin:	Wash thoroughly with plenty of soap and water for at least 15 minutes. Remove contaminated clothing and shoes. Launder contaminated clothing. Throw away contaminated shoes.
Eyes:	Immediately flush with plenty of water for at least 15 minutes.
Ingestion:	If solution is swallowed, seek medical advice.
Inhalation:	Remove to fresh air, seek medical advice.

FIRE/EXPLOSION HAZARD

The 200 ug/ml solution of Hoechst 33342 stain is not a potential fire or explosion hazard.

ACCIDENTAL RELEASE MEASURES

For simple counter top spills, use protective gloves and clothing when promptly cleaning up spills. Spilled solutions may be adsorbed into paper toweling and disposed of according to local waste management ordinances. The water-soluble characteristics of this reagent allow the area to be cleaned up using soap and water. For large spills, evacuate area of all unnecessary employees. Wear appropriate personal protective equipment including: neoprene (or equivalent) gloves, safety glasses with side shields, and lab coat. Contain the spill and dispose of in compliance with federal, state, and local regulations. US regulations (CERCLA) require reporting spills and releases to soil, water, and air in excess of reportable quantities. Toll free number to US coast guard national response center is (800) 424-8802.

Propidium Iodide at 250 ug/mL

Chemical Identification

Catalog #: 557, 638
Synonyms: PI
CAS # of Active Reagent: 25535-16-4
Chemical Name of Active Reagent: Phenanthridinium, 3,8-diamino-5-[3-(diethylmethylammonio) propyl]-6-phenyl,-diiodide
Molecular Weight of Active Reagent: 668.4
Chemical Formula of Active Reagent: $C_{27}H_{34}I_2N_4$

Hazards Identification

Contains propidium iodide (PI) staining reagent at 250 µg/ml in DI H20. PI exhibits mutagenic properties as demonstrated in Salmonella typhimurium using 200 ug/plate and at 25 µM/L with Saccharomyces cerevisiae. PI is not currently listed as a carcinogen by NTP, IARC or OSHA but should be treated as such. Symptoms of exposure are undefined but this staining reagent should always be handled using protective gloves, clothing, and eyewear. It was determined to have a LD50 level of 16 mg/kg when administered subcutaneously in mice.

Characteristics

PI stain is a clear, light pink, odorless solution.

Boiling point, C: 100
Vapor pressure (mm Hg): No data available.
Vapor density: No data available.
Solubility in water: Soluble at room temperature.
Specific gravity: Not applicable.
% volatile by volume: Not applicable.
Evaporation rate: No data available.
pH: 4.5 - 6.0

Storage and Stability

Propidium iodide stain, as supplied by ICT, is stable for 18 months at 2 - 8°C when stored in amber vials and protected from light. Always store protected from light in a tightly closed vial. Vials may be hazardous when empty since they contain product residues. Do not breathe vapor or mist.

Health Hazard

Propidium iodide may enter the body through inhalation, ingestion, and skin and eye contact.

Safety Control Measures

Personal protective equipment, such as lab coat, safety glasses with side shields, gloves should be worn at all times while handling this product. Maintain eye wash fountain and safety shower in work area. Safe laboratory practices should be followed. Always wash thoroughly after handling. Never take internally. Do not breathe vapor or mist.

Exposure Guidelines

No exposure guidelines are available.

First Aid Measures

Propidium iodide could be a potential carcinogen; avoid any contact with skin, eyes, or take internally. Carefully remove and dispose of gloves after use. Remove contaminated clothing and shoes; wash before reuse.

Skin: Wash thoroughly with plenty of soap and water for at least 15 minutes. Remove contaminated clothing and shoes. Launder contaminated clothing. Throw away contaminated shoes.
Eyes: Immediately flush with plenty of water for at least 15 minutes.
Ingestion: If solution is swallowed, seek medical advice.
Inhalation: Remove to fresh air, seek medical advice.

Fire/Explosion Hazard

The 250 µg/ml solution of propidium iodide stain is not a potential fire or explosion hazard.

Accidental Release Measures

For simple counter top spills, use protective gloves and clothing when promptly cleaning up spills. Spilled solutions may be adsorbed into paper toweling and disposed of according to local waste management ordinances. The water-soluble characteristics of this reagent allow the area to be cleaned up using soap and water. For large spills, evacuate area of all unnecessary employees. Wear appropriate personal protective equipment including: neoprene (or equivalent) gloves, safety glasses with side shields, and lab coat. Contain the spill and dispose of in compliance with federal, state, and local regulations. US regulations (CERCLA) require reporting spills and releases to soil, water, and air in excess of reportable quantities. Toll free number to US Coast Guard National Response Center is (800) 424-8802.

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