

Material Safety Data Sheet

Product: PH103-4 Buffer Solution 4.01 pH

Date of Preparation: 5/03

Section 1 - Chemical Product and Company Identification

Product/Chemical Name: PH103-4 Buffer Solution 4.01 pH

Chemical Formula: Analytical Testing Reagent for Laboratory or Field Use

Emergency Response No.: (800) 255-3924 (Chemtel)

Manufacturer: Extech Instruments Corporation

285 Bear Hill Road

Waltham, MA. 02451-1064

Section 2 - Composition/Information on Ingredients

Ingredient Name	CAS Number	% wt or % vol	OSHA PEL	ACGIH TLV	Other
			TWA STEL	TWA STEL	
Potassium Hydrogen Phthalate	877247	0-3	None Est.	None Est.	

Non-Hazardous Ingredients 97-100

TOTAL 100

Section 3 - Hazards Identification

+ + + + Emergency Overview + + + +

HMIS

H= 1

F= 0

R= 0

PPE C

+Sec.8

Potential Health Effects

Primary Entry Routes: Eye and Skin Contact.

Acute Effects: Irritation to eyes and skin.

Inhalation: High mist concentrations can cause irritation of eyes, nose, throat and lungs.

Eye: Irritation and/or burning sensation to eyes.

Skin: Prolonged or repeated contact may cause skin irritation.

Ingestion: Material is possibly harmful if swallowed.

Carcinogenicity: IARC, NTP, and OSHA do not list this product or its components as a carcinogen.

Medical Conditions Aggravated by Long-term Exposure: No specific information provided on compounds at date of issue.

Chronic Effects: No studies have been conducted for this product

Section 4 - First Aid Measures

Inhalation: Remove to fresh air. Call a physician if any difficulties persist.

Eye Contact: Flush eyes with a large amount of water for 15 minutes. Seek medical attention immediately if any irritation persists.

After first aid, get appropriate in-plant, paramedic or community medical support.

Skin Contact: Wash affected areas thoroughly with soap and water for at least 15 minutes. Seek medical attention if any irritation persists.

Ingestion: If swallowed, give 2 glasses of water to drink. DO NOT induce vomiting. After first aid, seek appropriate in-plant, paramedic, or community medical support. Never give anything by mouth to an unconscious person.

After first aid, get appropriate in-plant, paramedic, or community medical support.

Product: PH103-4 Buffer Solution 4.01 pH

Section 5 - Fire-Fighting Measures

Flash Point: Non-Flammable

Flash Point Method: Not applicable

Burning Rate: Not applicable

Auto-ignition Temperature: Does not burn.

LEL: NIA

UEL: NIA

Flammability Classification: Non Flammable

Extinguishing Media: Water fog, Alcohol foam, Carbon Dioxide, Dry Chemical

Unusual Fire or Explosion Hazards: None known other than material can splatter above 100°C/212°F.

Hazardous Combustion Products: Unknown but carbon monoxide may be released on burning.

Fire-Fighting Instructions: Do not release runoff from fire control methods to sewers or waterways.

Fire-Fighting Equipment: Because fire may produce toxic thermal decomposition products, wear a self-contained breathing apparatus (SCBA) with a full face piece operated in pressure-demand or positive-pressure mode.

Section 6 - Accidental Release Measures

Spill/Leak Procedures:

Small Spills: Absorb spill with paper towel or similar absorbent; or flush to sewer or ground with large amounts of water.

Large Spills:

Containment: For large spills, dike far ahead of liquid spill for later disposal. Do not release into sewers or waterways. Absorb

spill with vermiculite, oil dry or similar non-reactant absorbent.

Cleanup: Accumulate the absorbed materials and dispose of according to federal, state and local regulations.

Regulatory Requirements: Follow applicable OSHA regulations (29 CFR 1910.120)

Section 7 - Handling and Storage

Handling Precautions: Use the recommended safety controls and personal protective equipment as outlined. Fully review all data before handling of the material itself. Avoid contact with skin or eyes. Avoid breathing dust or mist. Keep from contact with clothing and other combustible materials. Observe good personal hygiene and housekeeping practices.

Storage Requirements: Do not store this material near any strong acids, bases, oxidizers, flammables or any other type of reactive material. Do not expose the material to temperature extremes.

Regulatory Requirements: Store materials according to all local, state and federal guidelines that are established for non-regulated chemical products.

Section 8 - Exposure Controls/Personal Protection

Engineering Controls:

Ventilation: Provide general or local exhaust ventilation systems to maintain airborne concentrations below OSHA PELs (Sec. 2). Local exhaust ventilation is preferred because it prevents contaminant dispersion into the work area by controlling it at its source.

Administrative Controls:

Respiratory Protection: Seek professional advice prior to respirator selection and use. Follow OSHA respirator regulations (29 CFR 1910.134) and, if necessary, wear a MSHA/NIOSH-approved respirator. Select respirator based on its suitability to provide adequate worker protection for given working conditions, level of airborne contamination, and presence of sufficient oxygen. For emergency or non-routine operations (cleaning spills, reactor vessel, or storage tanks), wear an SCBA. *Warning! Air-purifying respirators do not protect workers in oxygen-deficient atmospheres.* If respirators are used, OSHA requires a written respiratory protection program that includes at least: medical certification, training, fit testing, periodic environmental monitoring, maintenance, inspection, cleaning, and convenient, sanitary storage areas.

Protective Clothing/Equipment: Wear chemically protective gloves, boots, aprons, and gauntlets to prevent prolonged or repeated skin contact. Wear protective eyeglasses or chemical safety goggles, per OSHA eye-and-face-protection regulations (29 CFR 1910.133). Contact lenses are not eye protective devices. Appropriate eye protection must be worn instead of, or in conjunction with contact lenses.

Safety Stations: Make emergency eyewash stations, safety/quick-drench showers, and washing facilities available in work area.

Contaminated Equipment: Separate contaminated work clothes from street clothes. Launder before reuse. Remove this material from your shoes and clean personal protective equipment.

Comments: Never eat, drink, or smoke in work areas. Practice good personal hygiene after using this material, especially before eating, drinking, smoking, using the toilet, or applying cosmetics.

Product: PH103-4 Buffer Solution 4.01 pH

Section 9- Physical and Chemical Properties

Physical State: Liquid
Appearance and Odor: Clear or Red Liquid/Slight odor
Vapor Pressure: Same as water
Vapor Density (Air=1): Same as water
Specific Gravity (H₂O=1, at 4°C): 1.00
pH: 4.01

Water Solubility: Complete
Other Solubilities: Not Determined
Boiling Point: 212 F
Freezing/Melting Point: N.I.A.
% Volatile: 100
Evaporation Rate: 1.00

Section 10 - Stability and Reactivity

Stability: This product is stable at room temperature in closed containers under normal storage and handling conditions. However, avoid temperature extremes.

Polymerization: Hazardous polymerization will not occur.

Chemical Incompatibilities: Avoid contact with Strong Acids, Strong Alkalies, Oxidizers or any other type of reactive material.

Conditions to Avoid: Excessive temperature, contact with any type of reactive chemicals

Hazardous Decomposition Products: There are no known hazardous decomposition products for this material unless the material is burned in which case undetermined evolution of toxic gases may occur.

Section 11 - Toxicological Information

Eye Effects: Irritation to eyes and possible burning if materials are not immediately rinsed from the eyes.

Acute Inhalation Effects: Might produce irritation to respiratory system

Skin Effects: Irritation to skin

Acute Oral Effects: Not tested for this blend

Chronic Effects: No chronic effects are known to be attributable for this product.

Carcinogenicity: No carcinogenic effects are known to be applicable for the formulation components of this product.

Mutagenicity: No mutagenic effects are known to be applicable for the formulation components of this product.

Teratogenicity: No studies have been performed.

****See NIOSH, RTECS, for additional toxicity data.**

Section 12 - Ecological Information

Eco-toxicity: No specific data is available on this product. However, for the chemical components which make up this product, there may be specific data available and in the public domain. Consult the data available for each individual raw material component.

Environmental Fate: No studies have been conducted for this specific product.

Environmental Degradation: Not tested for this product blend

Soil Absorption/Mobility: Not tested for this product blend

Section 13 - Disposal Considerations

Disposal: Contact your supplier or a licensed contractor for detailed recommendations. Follow applicable federal, state and local regulations.

Disposal Regulatory Requirements:

Container Cleaning and Disposal: Triple rinse the empty containers with water before disposal to reconditioner or land fill or garbage.

Section 14 - Transport Information

DOT Transportation Data (49 CFR 172.101):

Shipping Name: Non Regulated Materials
Hazard Class:
ID No.:
Label Code: B
Emergency Response Guide No: None Listed
Shipping Notations:

Packaging Authorizations
a) Exceptions:

Quantity Limitations
a) Passenger, Aircraft or Railcar:
b) Cargo Aircraft Only:

Product: PH103-4 Buffer Solution 4.01 pH

Section 15 - Regulatory Information

EPA Regulations:

RCRA Hazardous Waste Number: Product blend is not listed (40 CFR 261.33)

RCRA Hazardous Waste Classification (40 CFR 261.): Product blend is not classified.

CERCLA Hazardous Substance (40 CFR 302.4) Product blend is unlisted specific per RCRA, Sec. 3001; CWA, Sec. 311 (b)(4);

CWA, Sec. 307 (a), CAA, Sec. 112

CERCLA Reportable Quantity (RQ): Not listed

SARA 313 Codes:

SARA Toxic Chemical: See CERCLA

Sara 302/304 Extremely Hazardous Substance

SARA EHS (Extremely Hazardous Substance): Not listed

Threshold Planning Quantity (TPQ): Not listed.

OSHA Regulations:

Air Contaminant (20 CFR 1910.1000, Table Z-1, Z-1-A): Not listed.

OSHA Specifically Regulated Substance (29 CFR 1910.): Not listed

State Regulations: As a product blend, the materials are generally not listed. Check with your local state regulatory board for more detailed information regarding the specific components of this product.

Section 16 - Other Information

Prepared By: G. Garcia, Technical Director

Revision Notes:

USER'S RESPONSIBILITY

The information and recommendations contained herein cannot cover all possible situations which the user may experience during processing. Each aspect of your operation should be examined to determine if, or where, additional precautions may be necessary. All health and safety information contained in this bulletin should be provided to your employees or customers. It is your responsibility to use this information to develop appropriate work practice guidelines and employee instructional programs for your operation.

DISCLAIMER OF LIABILITY

As the conditions or methods of use are beyond our control, we do not assume any responsibility and expressly disclaim any liability for any use of this material. Information contained herein is believed to be true and accurate but all statements or suggestions are made without warranty, expressed or implied, regarding accuracy of the information, the hazards connected with the use of the material or the results to be obtained from the use thereof. Compliance with all applicable federal, state and local laws and regulations remains the responsibility of the user.

Material Safety Data Sheet

Product: PH103-7 Buffer Solution 7.00 pH

Date of Preparation: 5/03

Section 1 - Chemical Product and Company Identification

Product/Chemical Name: PH103-7 Buffer Solution 7.00 pH

Chemical Formula: Analytical Testing Reagent for Laboratory or Field Use

Emergency Telephone: (800) 255-3924 (ChemTel)

Manufacturer: Extech Instruments Corporation

285 Bear Hill Road

Waldham, MA. 02451-1064

Section 2 - Composition/Information on Ingredients

Ingredient Name	CAS Number	% wt or % vol	OSHA PEL	ACGIH TLV	Other
			TWA STEL	TWA STEL	
Potassium Phosphate Monobasic	7778770	0-3	None Est.		
Non-Hazardous		0-97			
Total		100			

Section 3 - Hazards Identification

+ + + + Emergency Overview + + + +

HMIS	
H=	1
F=	0
R=	0
PPE	C
+Sec.8	

Potential Health Effects

Primary Entry Routes: Eye and Skin Contact.

Acute Effects: Irritation to eyes and skin.

Inhalation: High mist concentrations can cause irritation of eyes, nose, throat and lungs.

Eye: Irritation and/or burning sensation to eyes.

Skin: Prolonged or repeated contact may cause skin irritation.

Ingestion: Material is possibly harmful if swallowed.

Carcinogenicity: IARC, NTP, and OSHA do not list this product or its components as a carcinogen.

Medical Conditions Aggravated by Long-Term Exposure: No specific information provided on compounds at date of issue.

Chronic Effects: No studies have been conducted for this product

Section 4 - First Aid Measures

Inhalation: Remove to fresh air. Call a physician if any difficulties persist.

Eye Contact: Flush eyes with a large amount of water for 15 minutes. Seek medical attention immediately if any irritation persists. After first aid, get appropriate in-plant, paramedic or community medical support.

Skin Contact: Wash affected areas thoroughly with soap and water for at least 15 minutes. Seek medical attention if any irritation persists.

Ingestion: If swallowed, give 2 glasses of water to drink. DO NOT induce vomiting. After first aid, seek appropriate in-plant, paramedic, or community medical support. Never give anything by mouth to an unconscious person.

After first aid, get appropriate in-plant, paramedic, or community medical support.

Product: PH103-7 Buffer Solution 7.00 pH

Section 5 - Fire-Fighting Measures

Flash Point: Non-Flammable

Flash Point Method: Not applicable

Burning Rate: Not applicable

Autoignition Temperature: Does not burn.

LEL:

UEL:

Flammability Classification: Non Flammable

Extinguishing Media: Water fog, Alcohol foam, Carbon Dioxide, Dry Chemical

Unusual Fire or Explosion Hazards: None known other than material can splatter above 100°C/212°F.

Hazardous Combustion Products: Unknown but carbon monoxide may be released on burning.

Fire-Fighting Instructions: Do not release runoff from fire control methods to sewers or waterways.

Fire-Fighting Equipment: Because fire may produce toxic thermal decomposition products, wear a self-contained breathing apparatus (SCBA) with a full face piece operated in pressure-demand or positive-pressure mode.

Section 6 - Accidental Release Measures

Spill/Leak Procedures:

Small Spills: Absorb spill with paper towel or similar absorbent; or flush to sewer or ground with large amounts of water.

Large Spills:

Containment: For large spills, dike far ahead of liquid spill for later disposal. Do not release into sewers or waterways. Absorb spill with vermiculite, oil dry or similar non-reactant absorbent.

Cleanup: Accumulate the absorbed materials and dispose of according to federal, state and local regulations.

Regulatory Requirements: Follow applicable OSHA regulations (29 CFR 1910.120)

Section 7 - Handling and Storage

Handling Precautions: Use the recommended safety controls and personal protective equipment as outlined. Fully review all data before handling of the material itself. Avoid contact with skin or eyes. Avoid breathing dust or mist. Keep from contact with clothing and other combustible materials. Observe good personal hygiene and housekeeping practices.

Storage Requirements: Do not store this material near any strong acids, bases, oxidizers, flammables or any other type of reactive material. Do not expose the material to temperature extremes.

Regulatory Requirements: Store materials according to all local, state and federal guidelines which are established for non-regulated chemical products.

Section 8 - Exposure Controls/Personal Protection

Engineering Controls:

Ventilation: Provide general or local exhaust ventilation systems to maintain airborne concentrations below OSHA PELs (Sec. 2). Local exhaust ventilation is preferred because it prevents contaminant dispersion into the work area by controlling it at its source.

Administrative Controls:

Respiratory Protection: Seek professional advice prior to respirator selection and use. Follow OSHA respirator regulations (29 CFR 1910.134) and, if necessary, wear a MSHA/NIOSH-approved respirator. Select respirator based on its suitability to provide adequate worker protection for given working conditions, level of airborne contamination, and presence of sufficient oxygen. For emergency or nonroutine operations (cleaning spills, reactor vessel, or storage tanks), wear an SCBA. *Warning! Air-purifying respirators do not protect workers in oxygen-deficient atmospheres.* If respirators are used, OSHA requires a written respiratory protection program that includes at least: medical certification, training, fit-testing, periodic environmental monitoring, maintenance, inspection, cleaning, and convenient, sanitary storage areas.

Protective Clothing/Equipment: Wear chemically protective gloves, boots, aprons, and gauntlets to prevent prolonged or repeated skin contact. Wear protective eyeglasses or chemical safety goggles, per OSHA eye-and face-protection regulations (29 CFR 1910.133). Contact lenses are not eye protective devices. Appropriate eye protection must be worn instead of, or in conjunction with contact lenses.

Safety Stations: Make emergency eyewash stations, safety/quick-drench showers, and washing facilities available in work area.

Contaminated Equipment: Separate contaminated work clothes from street clothes. Launder before reuse. Remove this material from your shoes and clean personal protective equipment.

Comments: Never eat, drink, or smoke in work areas. Practice good personal hygiene after using this material, especially before eating, drinking, smoking, using the toilet, or applying cosmetics.

Product: PH103-7 Buffer Solution 7.00 pH

Section - Physical and Chemical Properties

Physical State: Liquid**Appearance and Odor:** Green Liquid, Slight Odor**Vapor Pressure:** N.I.A.**Vapor Density (Air=1):** N.I.A.**Specific Gravity (H₂O=1, at 4°C):** 1.00**pH:** 7.00**Water Solubility:** Complete**Other Solubilities:** Not Determined**Boiling Point:** 212F**Freezing/Melting Point:** N.A.**% Volatile:** 100**Evaporation Rate:** 1.00

Section 10 - Stability and Reactivity

Stability: This product is stable at room temperature in closed containers under normal storage and handling conditions. However, avoid temperature extremes.

Polymerization: Hazardous polymerization will not occur.

Chemical Incompatibilities: Avoid contact with Strong Acids, Strong Alkalies, Oxidizers or any other type of reactive material.

Conditions to Avoid: Excessive temperatures, contact with any type of reactive chemicals

Hazardous Decomposition Products: There are no known hazardous decomposition products for this material unless the material is burned in which case undetermined evolution of toxic gases may occur.

Section 11 - Toxicological Information

Eye Effects: Irritation to eyes and possible burning if materials are not immediately rinsed from the eyes.

Acute Inhalation Effects: Might produce irritation to respiratory system

Skin Effects: Irritation to skin

Acute Oral Effects: Not tested for this blend

Chronic Effects: No chronic effects are known to be attributable for this product.

Carcinogenicity: No carcinogenic effects are known to be applicable for the formulation components of this product.

Mutagenicity: No mutagenic effects are known to be applicable for the formulation components of this product.

Teratogenicity: No studies have been performed.

**See NIOSH, RTECS, for additional toxicity data.

Section 12 - Ecological Information

Ecotoxicity: No specific data is available on this product. However, for the chemical components which make up this product, there may be specific data available and in the public domain. Consult the data available for each individual raw material component.

Environmental Fate: No studies have been conducted for this specific product.

Environmental Degradation: Not tested for this product blend

Soil Absorption/Mobility: Not tested for this product blend

Section 13 - Disposal Considerations

Disposal: Contact your supplier or a licensed contractor for detailed recommendations. Follow applicable federal, state and local regulations.

Disposal Regulatory Requirements:

Container Cleaning and Disposal: Triple rinse the empty containers with water before disposal to reconditioner or land fill or garbage.

Section 14 - Transport Information

DOT Transportation Data (49 CFR 172.101):**Shipping Name:** Non-Regulated Materials**Hazard Class:****ID No.:****Label Code:** B**HMIS Label Code:** 100C**Emergency Response No:** None Listed**Shipping Notations:****Packaging Authorizations****a) Exceptions:****Quantity Limitations****a) Passenger, Aircraft or Railcar:****b) Cargo Aircraft Only:**

Section 15 - Regulatory Information

EPA Regulations:

RCRA Hazardous Waste Number: Product blend is not listed (40 CFR 261.33)

RCRA Hazardous Waste Classification (40 CFR 261.): Product blend is not classified.

CERCLA Hazardous Substance (40 CFR 302.4) Product blend is unlisted specific per RCRA, Sec. 3001; CWA, Sec. 311 (b)(4);

CWA, Sec. 307 (a), CAA, Sec. 112

CERCLA Reportable Quantity (RQ), lb(kg)

Not listed

SARA 313 Codes:

SARA Toxic Chemical (40CFR 372.65): See CERCLA

Sara 302/304 Extremely Hazardous Substance (40CFR 355)

SARA EHS (Extremely Hazardous Substance) (40 CFR 355): Not listed

Threshold Planning Quantity (TPQ): Not Listed

OSHA Regulations:

Air Contaminant (20 CFR 1910.1000, Table Z-1, Z-1-A): See section 2

OSHA Specifically Regulated Substance (29 CFR 1910.): See section 2

State Regulations: As a product blend the materials are generally not listed. Check with your local state regulatory board for more detailed information regarding the specific components of this product.

Section 16 - Other Information

Prepared By: G. Garcia, Technical Director

Revision Notes:

USER'S RESPONSIBILITY

The information and recommendations contained herein cannot cover all possible situations which the user may experience during processing. Each aspect of your operation should be examined to determine if, or where, additional precautions may be necessary. All health and safety information contained in this bulletin should be provided to your employees or customers. It is your responsibility to use this information to develop appropriate work practice guidelines and employee instructional programs for your operation.

DISCLAIMER OF LIABILITY

As the conditions or methods of use are beyond our control, we do not assume any responsibility and expressly disclaim any liability for any use of this material. Information contained herein is believed to be true and accurate but all statements or suggestions are made without warranty, expressed or implied, regarding accuracy of the information, the hazards connected with the use of the material or the results to be obtained from the use thereof. Compliance with all applicable federal, state and local laws and regulations remains the responsibility of the user.

Material Safety Data Sheet

Product: PH103-10 Buffer Solution 10.00 pH

Date of Preparation: 5/03

Section 1 - Chemical Product and Company Identification

Product/Chemical Name: PH103-10 Buffer Solution 10.00 pH

Chemical Formula: Analytical Testing Reagent for Laboratory or Field Use

Emergency Telephone: (800) 255-3924 (ChemTel)

Manufacturer: Exttech Instrument Corporation

285 Bear Hill Road

Wood Dale, IL 60191 Waltham, MA. 02451-1064

Section 2 - Composition/Information on Ingredients

Ingredient Name	CAS Number	% wt or % vol	OSHA PEL	ACGIH TLV	Other
			TWA STEL	TWA STEL	
Boric Acid	10043353	0-3	None Est.		
Potassium Chloride	7447407	0-3	None Est.		

Non Hazardous Ingredients:94-100

TOTAL 100%

Section 3 - Hazards Identification

+ + + + Emergency Overview + + + +

HMIS	
H=	1
F=	0
R=	0
PPE	C
+Sec.8	

Potential Health Effects

Primary Entry Routes: Eye and Skin Contact.

Acute Effects: Irritation to eyes and skin.

Inhalation: High mist concentrations can cause irritation of eyes, nose, throat and lungs.

Eye: Irritation and/or burning sensation to eyes.

Skin: Prolonged or repeated contact may cause skin irritation.

Ingestion: Material is possibly harmful if swallowed.

Carcinogenicity: IARC, NTP, and OSHA do not list this product or its components as a carcinogen.

Medical Conditions Aggravated by Long-Term Exposure: No specific information provided on compounds at date of issue.

Chronic Effects: No studies have been conducted for this product

Section 4 - First Aid Measures

Inhalation: Remove to fresh air. Call a physician if any difficulties persist.

Eye Contact: Flush eyes with a large amount of water for 15 minutes. Seek medical attention immediately if any irritation persists. After first aid, get appropriate in-plant, paramedic or community medical support.

Skin Contact: Wash affected areas thoroughly with soap and water for at least 15 minutes. Seek medical attention if any irritation persists.

Ingestion: If swallowed, give 2 glasses of water to drink. DO NOT induce vomiting. After first aid, seek appropriate in-plant, paramedic, or community medical support. Never give anything by mouth to an unconscious person.

After first aid, get appropriate in-plant, paramedic, or community medical support.

Product: PH103-10 Buffer Solution 10.00 pH

Section 5 - Fire-Fighting Measures

Flash Point: Non-Flammable

Flash Point Method: Not applicable

Burning Rate: Not applicable

Autoignition Temperature: Does not burn.

LEL:

UEL:

Flammability Classification: Non Flammable

Extinguishing Media: Water fog, Alcohol foam, Carbon Dioxide, Dry Chemical

Unusual Fire or Explosion Hazards: None known other than material can splatter above 100°C/212°F.

Hazardous Combustion Products: Unknown but carbon monoxide may be released on burning.

Fire-Fighting Instructions: Do not release runoff from fire control methods to sewers or waterways.

Fire-Fighting Equipment: Because fire may produce toxic thermal decomposition products, wear a self-contained breathing apparatus (SCBA) with a full face piece operated in pressure-demand or positive-pressure mode.

Section 6 - Accidental Release Measures

Spill/Leak Procedures:

Small Spills: Absorb spill with paper towel or similar absorbent; or flush to sewer or ground with large amounts of water.

Large Spills:

Containment: For large spills, dike far ahead of liquid spill for later disposal. Do not release into sewers or waterways. Absorb spill with vermiculite, oil dry or similar non-reactant absorbent.

Cleanup: Accumulate the absorbed materials and dispose of according to federal, state and local regulations.

Regulatory Requirements: Follow applicable OSHA regulations (29 CFR 1910.120)

Section 7 - Handling and Storage

Handling Precautions: Use the recommended safety controls and personal protective equipment as outlined. Fully review all data before handling of the material itself. Avoid contact with skin or eyes. Avoid breathing dust or mist. Keep from contact with clothing and other combustible materials. Observe good personal hygiene and housekeeping practices.

Storage Requirements: Do not store this material near any strong acids, bases, oxidizers, flammables or any other type of reactive material. Do not expose the material to temperature extremes.

Regulatory Requirements: Store materials according to all local, state and federal guidelines which are established for non-regulated chemical products.

Section 8 - Exposure Controls/Personal Protection

Engineering Controls:

Ventilation: Provide general or local exhaust ventilation systems to maintain airborne concentrations below OSHA PELs (Sec. 2). Local exhaust ventilation is preferred because it prevents contaminant dispersion into the work area by controlling it at its source.

Administrative Controls:

Respiratory Protection: Seek professional advice prior to respirator selection and use. Follow OSHA respirator regulations (29 CFR 1910.134) and, if necessary, wear a MSHA/NIOSH-approved respirator. Select respirator based on its suitability to provide adequate worker protection for given working conditions, level of airborne contamination, and presence of sufficient oxygen. For emergency or nonroutine operations (cleaning spills, reactor vessel, or storage tanks), wear an SCBA. *Warning! Air-purifying respirators do not protect workers in oxygen-deficient atmospheres.* If respirators are used, OSHA requires a written respiratory protection program that includes at least: medical certification, training, fit-testing, periodic environmental monitoring, maintenance, inspection, cleaning, and convenient, sanitary storage areas.

Protective Clothing/Equipment: Wear chemically protective gloves, boots, aprons, and gauntlets to prevent prolonged or repeated skin contact. Wear protective eyeglasses or chemical safety goggles, per OSHA eye-and face-protection regulations (29 CFR 1910.133). Contact lenses are not eye protective devices. Appropriate eye protection must be worn instead of, or in conjunction with contact lenses.

Safety Stations: Make emergency eyewash stations, safety/quick-drench showers, and washing facilities available in work area.

Contaminated Equipment: Separate contaminated work clothes from street clothes. Launder before reuse. Remove this material from your shoes and clean personal protective equipment.

Comments: Never eat, drink, or smoke in work areas. Practice good personal hygiene after using this material, especially before eating, drinking, smoking, using the toilet, or applying cosmetics.

Product: PH103-10 Buffer Solution pH 10.00

Section - Physical and Chemical Properties

Physical State: Liquid
Appearance and Odor: Clear or Blue liquid, Slight odor
Vapor Pressure: N.I.A.
Vapor Density (Air=1): N.I.A.
Specific Gravity (H₂O=1, at 4°C): 1.00
pH: 10.00

Water Solubility: Complete
Solubilities: Not Determined
Boiling Point: 212F
Freezing/Melting Point: N.A.
% Volatile: 100+/-
Evaporation Rate: ---

Section 10 - Stability and Reactivity

Stability: This product is stable at room temperature in closed containers under normal storage and handling conditions. However, avoid temperature extremes.

Polymerization: Hazardous polymerization will not occur.

Chemical Incompatibilities: Avoid contact with Strong Acids, Strong Alkalies, Oxidizers or any other type of reactive material.

Conditions to Avoid: Excessive temperatures, contact with any type of reactive chemicals

Hazardous Decomposition Products: There are no known hazardous decomposition products for this material unless the material is burned in which case undetermined evolution of toxic gases may occur.

Section 11 - Toxicological Information

Eye Effects: Irritation to eyes and possible burning if materials are not immediately rinsed from the eyes.

Acute Inhalation Effects: Might produce irritation to respiratory system

Skin Effects: Irritation to skin

Acute Oral Effects: Not tested for this blend

Chronic Effects: No chronic effects are known to be attributable for this product.

Carcinogenicity: No carcinogenic effects are known to be applicable for the formulation components of this product.

Mutagenicity: No mutagenic effects are known to be applicable for the formulation components of this product.

Teratogenicity: No studies have been performed.

****See NIOSH, RTECS, for additional toxicity data.**

Section 12 - Ecological Information

Ecotoxicity: No specific data is available on this product. However, for the chemical components which make up this product, there may be specific data available and in the public domain. Consult the data available for each individual raw material component.

Environmental Fate: No studies have been conducted for this specific product.

Environmental Degradation: Not tested for this product blend

Soil Absorption/Mobility: Not tested for this product blend

Section 13 - Disposal Considerations

Disposal: Contact your supplier or a licensed contractor for detailed recommendations. Follow applicable federal, state and local regulations.

Disposal Regulatory Requirements:

Container Cleaning and Disposal: Triple rinse the empty containers with water before disposal to reconditioner or land fill or garbage.

Section 14 - Transport Information

DOT Transportation Data (49 CFR 172.101):

Shipping Name: Non Regulated Materials

Packaging Authorizations

Quantity Limitations

Hazard Class:

Label Code: B

a) Exceptions:

a) Passenger, Aircraft or Railcar:

ID No.:

b) Cargo Aircraft Only:

Emergency Response No: None Listed

Shipping Notations:

Product: PH103-10 Buffer Solution 10.00 pH

Section 15 - Regulatory Information

EPA Regulations:

RCRA Hazardous Waste Number: Product blend is not listed (40 CFR 261.33)

RCRA Hazardous Waste Classification (40 CFR 261.): Product blend is not classified.

CERCLA Hazardous Substance (40 CFR 302.4) Product blend is unlisted specific per RCRA, Sec. 3001; CWA, Sec. 311 (b)(4);

CWA, Sec. 307 (a), CAA, Sec. 112

CERCLA Reportable Quantity (RQ), lb(kg)

Not listed

SARA 313 Codes:

SARA Toxic Chemical (40CFR 372.65): Not listed

Sara 302/304 Extremely Hazardous Substance (40CFR 355)

SARA EHS (Extremely Hazardous Substance) (40 CFR 355): Not listed

Threshold Planning Quantity (TPQ): Not Listed

OSHA Regulations:

Air Contaminant (20 CFR 1910.1000, Table Z-1, Z-1-A): See Section 2.

OSHA Specifically Regulated Substance (29 CFR 1910.): See Section 2

State Regulations: As a product blend the materials are generally not listed. Check with your local state regulatory board for more detailed information regarding the specific components of this product.

Section 16 - Other Information

Prepared By: G. Garcia, Technical Director

Revision Notes:

USER'S RESPONSIBILITY

The information and recommendations contained herein cannot cover all possible situations which the user may experience during processing. Each aspect of your operation should be examined to determine if, or where, additional precautions may be necessary. All health and safety information contained in this bulletin should be provided to your employees or customers. It is your responsibility to use this information to develop appropriate work practice guidelines and employee instructional programs for your operation.

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Material Safety Data Sheet

Product: PH103- Rinse Solution

Date of Preparation: 5/03

Section 1 - Chemical Product and Company Identification

Product/Chemical Name: PH103-Rinse Solution

Chemical Formula: Analytical Testing Reagent for Laboratory or Field Use

Emergency Telephone: (800) 255-3924 (ChemTel)

Manufacturer: Extech Instruments Corporation

285 Bear Hill Road

Wood Dale, IL 60191 Waltham, MA. 02451-1064

Section 2 - Composition/Information on Ingredients

Ingredient Name	CAS Number	% wt or % vol	OSHA PEL	ACGIH TLV	Other
			TWA STEL	TWA STEL	
Dihydrogen Oxide	7732185	100	None Est.		

Non-Hazardous

Total 100

Section 3 - Hazards Identification

+ + + + Emergency Overview + + + +

HMIS

H= 1

F= 0

R= 0

PPE C

+Sec.8

Potential Health Effects

Primary Entry Routes: Eye and Skin Contact.

Acute Effects: Irritation to eyes and skin.

Inhalation: High mist concentrations can cause irritation of eyes, nose, throat and lungs.

Eye: Irritation and/or burning sensation to eyes.

Skin: Prolonged or repeated contact may cause skin irritation.

Ingestion: Material is possibly harmful if swallowed.

Carcinogenicity: IARC, NTP, and OSHA do not list this product or its components as a carcinogen.

Medical Conditions Aggravated by Long-Term Exposure: No specific information provided on compounds at date of issue.

Chronic Effects: No studies have been conducted for this product

Section 4 - First Aid Measures

Inhalation: Remove to fresh air. Call a physician if any difficulties persist.

Eye Contact: Flush eyes with a large amount of water for 15 minutes. Seek medical attention immediately if any irritation persists. After first aid, get appropriate in-plant, paramedic or community medical support.

Skin Contact: Wash affected areas thoroughly with soap and water for at least 15 minutes. Seek medical attention if any irritation persists.

Ingestion: If swallowed, give 2 glasses of water to drink. DO NOT induce vomiting. After first aid, seek appropriate in-plant, paramedic, or community medical support. Never give anything by mouth to an unconscious person.

After first aid, get appropriate in-plant, paramedic, or community medical support.

Product: PH103-Rinse Solution

Section 5 - Fire-Fighting Measures

Flash Point: Non-Flammable

Flash Point Method: Not applicable

Burning Rate: Not applicable

Autoignition Temperature: Does not burn.

LEL:

UEL:

Flammability Classification: Non Flammable

Extinguishing Media: Water fog, Alcohol foam, Carbon Dioxide, Dry Chemical

Unusual Fire or Explosion Hazards: None known other than material can splatter above 100°C/212°F.

Hazardous Combustion Products: Unknown but carbon monoxide may be released on burning.

Fire-Fighting Instructions: Do not release runoff from fire control methods to sewers or waterways.

Fire-Fighting Equipment: Because fire may produce toxic thermal decomposition products, wear a self-contained breathing apparatus (SCBA) with a full face piece operated in pressure-demand or positive-pressure mode.

Section 6 - Accidental Release Measures

Spill/Leak Procedures:

Small Spills: Absorb spill with paper towel or similar absorbent; or flush to sewer or ground with large amounts of water.

Large Spills:

Containment: For large spills, dike far ahead of liquid spill for later disposal. Do not release into sewers or waterways. Absorb spill with vermiculite, oil dry or similar non-reactant absorbent.

Cleanup: Accumulate the absorbed materials and dispose of according to federal, state and local regulations.

Regulatory Requirements: Follow applicable OSHA regulations (29 CFR 1910.120)

Section 7 - Handling and Storage

Handling Precautions: Use the recommended safety controls and personal protective equipment as outlined. Fully review all data before handling of the material itself. Avoid contact with skin or eyes. Avoid breathing dust or mist. Keep from contact with clothing and other combustible materials. Observe good personal hygiene and housekeeping practices.

Storage Requirements: Do not store this material near any strong acids, bases, oxidizers, flammables or any other type of reactive material. Do not expose the material to temperature extremes.

Regulatory Requirements: Store materials according to all local, state and federal guidelines which are established for non-regulated chemical products.

Section 8 - Exposure Controls/Personal Protection

Engineering Controls:

Ventilation: Provide general or local exhaust ventilation systems to maintain airborne concentrations below OSHA PELs (Sec. 2). Local exhaust ventilation is preferred because it prevents contaminant dispersion into the work area by controlling it at its source.

Administrative Controls:

Respiratory Protection: Seek professional advice prior to respirator selection and use. Follow OSHA respirator regulations (29 CFR 1910.134) and, if necessary, wear a MSHA/NIOSH-approved respirator. Select respirator based on its suitability to provide adequate worker protection for given working conditions, level of airborne contamination, and presence of sufficient oxygen. For emergency or nonroutine operations (cleaning spills, reactor vessel, or storage tanks), wear an SCBA. *Warning! Air-purifying respirators do not protect workers in oxygen-deficient atmospheres.* If respirators are used, OSHA requires a written respiratory protection program that includes at least: medical certification, training, fit-testing, periodic environmental monitoring, maintenance, inspection, cleaning, and convenient, sanitary storage areas.

Protective Clothing/Equipment: Wear chemically protective gloves, boots, aprons, and gauntlets to prevent prolonged or repeated skin contact. Wear protective eyeglasses or chemical safety goggles, per OSHA eye-and face-protection regulations (29 CFR 1910.133). Contact lenses are not eye protective devices. Appropriate eye protection must be worn instead of, or in conjunction with contact lenses.

Safety Stations: Make emergency eyewash stations, safety/quick-drench showers, and washing facilities available in work area.

Contaminated Equipment: Separate contaminated work clothes from street clothes. Launder before reuse. Remove this material from your shoes and clean personal protective equipment.

Comments: Never eat, drink, or smoke in work areas. Practice good personal hygiene after using this material, especially before eating, drinking, smoking, using the toilet, or applying cosmetics.

Product: PH103-Rinse Solution**Section - Physical and Chemical Properties**

Physical State: Liquid
 Appearance and Odor: Clear Liquid, Slight Odor
 Vapor Pressure: N.I.A.
 Vapor Density (Air=1): N.I.A.
 Specific Gravity (H₂O=1, at 4°C): 1.00
 pH: 6-8

Water Solubility: Complete
 Other Solubilities: Not Determined
 Boiling Point: 212F
 Freezing/Melting Point: N.A.
 % Volatile: 100
 Evaporation Rate: 1.00

Section 10 - Stability and Reactivity

Stability: This product is stable at room temperature in closed containers under normal storage and handling conditions. However, avoid temperature extremes.

Polymerization: Hazardous polymerization will not occur.

Chemical Incompatibilities: Avoid contact with Strong Acids, Strong Alkalies, Oxidizers or any other type of reactive material.

Conditions to Avoid: Excessive temperatures, contact with any type of reactive chemicals

Hazardous Decomposition Products: There are no known hazardous decomposition products for this material unless the material is burned in which case undetermined evolution of toxic gases may occur.

Section 11 - Toxicological Information

Eye Effects: Irritation to eyes and possible burning if materials are not immediately rinsed from the eyes.

Acute Inhalation Effects: Might produce irritation to respiratory system

Skin Effects: Irritation to skin

Acute Oral Effects: Not tested for this blend

Chronic Effects: No chronic effects are known to be attributable for this product.

Carcinogenicity: No carcinogenic effects are known to be applicable for the formulation components of this product.

Mutagenicity: No mutagenic effects are known to be applicable for the formulation components of this product.

Teratogenicity: No studies have been performed.

**See NIOSH, RTECS, for additional toxicity data.

Section 12 - Ecological Information

Ecotoxicity: No specific data is available on this product. However, for the chemical components which make up this product, there may be specific data available and in the public domain. Consult the data available for each individual raw material component.

Environmental Fate: No studies have been conducted for this specific product.

Environmental Degradation: Not tested for this product blend

Soil Absorption/Mobility: Not tested for this product blend

Section 13 - Disposal Considerations

Disposal: Contact your supplier or a licensed contractor for detailed recommendations. Follow applicable federal, state and local regulations.

Disposal Regulatory Requirements:

Container Cleaning and Disposal: Triple rinse the empty containers with water before disposal to reconditioner or land fill or garbage.

Section 14 - Transport Information**DOT Transportation Data (49 CFR 172.101):**

Shipping Name: Non-Regulated Materials

Packaging Authorizations

Quantity Limitations

Hazard Class:

a) Exceptions:

a) Passenger, Aircraft or Railcar:

ID No.:

b) Cargo Aircraft Only:

Label Code: B

HMIS Label Code: 100C

Emergency Response No: None Listed

Shipping Notations:

Section 15 - Regulatory Information

EPA Regulations:

RCRA Hazardous Waste Number: Product blend is not listed (40 CFR 261.33)

RCRA Hazardous Waste Classification (40 CFR 261.): Product blend is not classified.

CERCLA Hazardous Substance (40 CFR 302.4) Product blend is unlisted specific per RCRA, Sec. 3001; CWA, Sec. 311 (b)(4);

CWA, Sec. 307 (a), CAA, Sec. 112

CERCLA Reportable Quantity (RQ), lb(kg)

Not listed

SARA 313 Codes:

SARA Toxic Chemical (40CFR 372.65): See CERCLA

Sara 302/304 Extremely Hazardous Substance (40CFR 355)

SARA EHS (Extremely Hazardous Substance) (40 CFR 355): Not listed

Threshold Planning Quantity (TPQ): Not Listed

OSHA Regulations:

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