

**PRODUCT: K-2005 K-2006  
R-0001**

**MATERIAL SAFETY DATA SHEET**

MANUFACTURER: TAYLOR TECHNOLOGIES, INC  
31 LOVETON CIRCLE  
SPARKS, MD 21152  
TELEPHONE: 410-472-4340

**1.PRODUCT IDENTIFICATION**

CATALOG NO.: R-0001  
PRODUCT NAME: DPD Reagent #1  
CHEMICAL FAMILY: Inorganic salt solution

**2.INGREDIENTS**

INGREDIENT	CAS NO.	%	NATURE OF HAZARD
Potassium phosphate	7778-77-0	<10	Irritant
Sodium phosphate	7558-79-4	<10	Irritant
Sodium hydroxide	1310-73-2	<1	Irritant alkali
Deionized water	7732-18-5	to 100	None

**3.PHYSICAL/CHEMICAL CHARACTERISTICS**

STATE: Liquid      APPEARANCE: Clear, colorless      ODOR: None  
BOILING PT (F): 212      pH: 10      SPECIFIC GRAVITY: 1.24  
VAPOR PRESSURE (mm Hg): 17      VAPOR DENSITY (AIR=1): .64  
PERCENT VOLATILE BY VOLUME: 68      SOLUBILITY IN WATER: Soluble

**4.FIRE, EXPLOSION HAZARD AND REACTIVITY DATA**

FLASH PT: NA      METHOD: NA  
FLAMMABLE LIMITS: LEL: NA      UEL: NA  
EXTINGUISHING MEDIA: Dry chemical, carbon dioxide, water spray or foam  
SPECIAL PROCEDURES: Wear self-contained (positive pressure if available)  
breathing apparatus and full-protective clothing  
FIRE/EXPLOSION HAZARDS AND HAZARDOUS DECOMPOSITION PRODUCTS:  
May emit toxic fumes of phosphorus oxides  
NFPA CODE: Health: 0      Flammability: 0      Reactivity: 0      Specific: NA  
CONDITIONS TO AVOID: Extreme heat, temperatures.

**5.HEALTH HAZARD DATA**

INGREDIENT: Sodium hydroxide  
TOXICITY: LD50(ori-rat): 140-340 mg/kg  
PEL: 2 mg/m3      TLV: 2 mg/m3  
STEL: NE

ROUTE(S) OF ENTRY: Inhalation      Ingestion X      Skin X

TARGET ORGAN(S): Eyes, skin

CARCINOGENICITY: NTP No      IARC No      OSHA No

HEALTH HAZARDS AND SYMPTOMS OF EXPOSURE:

EYES: Irritant

SKIN: Irritant

INGESTION: Irritant. May cause gastrointestinal irritation, nausea, and diarrhea.

INHALATION: NA

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE: Eye and skin conditions

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6.PRECAUTIONARY MEASURES PROTECTIVE EQUIPMENT: General purpose gloves, safety glasses, lab coat HANDLING: Avoid contact with eyes, skin, and clothing. Avoid breathing chemical. Wash thoroughly after handling.

STORAGE: Cool, dry area. Avoid direct sunlight.

7.EMERGENCY AND FIRST AID PROCEDURES EYE AND SKIN CONTACT: Immediately flush eyes with water for 15 minutes. Call physician. Wash skin thoroughly with soap and water. INGESTION: Give large amounts of water. Call physician. DO NOT INDUCE VOMITING.

INHALATION: NA

8.SPILL AND DISPOSAL PROCEDURES

SPILL OR RELEASE: Absorb with vermiculite or other inert material. Containerize for later disposal.

DISPOSAL: Incineration or other method to comply with all local, state, and federal regulations.

NA - Not applicable

ND = Not determined

NE = Not established

This Material Safety Data Sheet has been prepared in accordance with 29 CFR Part 1910.1200 and contains information believed to be accurate and complete at the date of preparation. However, no warranty is expressed or implied. Advice given under "Spill and Disposal Procedures" assumes compliance with federal, state, and local regulations regarding the disposal of hazardous waste.

DATE PREPARED: May 1996

R-0002

**MATERIAL SAFETY DATA SHEET**

MANUFACTURER: TAYLOR TECHNOLOGIES, INC  
31 LOVETON CIRCLE  
SPARKS, MD 21152  
TELEPHONE: 410-472-4340

1. PRODUCT IDENTIFICATION

CATALOG NO.: R-0002  
PRODUCT NAME: DPD Reagent #2  
CHEMICAL FAMILY: Acidic organic amine solution

2. INGREDIENTS

INGREDIENT	CAS NO.	%	NATURE OF HAZARD
N,N-Diethyl-p-phenylene-diamine sulfate	6283-63-2	<1	Irritant, toxic
organic acid (trade secret)	Confidential	<10	Irritant acid
Deionized water	7732-18-5	to 100	None

3. PHYSICAL/CHEMICAL CHARACTERISTICS

STATE: Liquid      APPEARANCE: Clear, colorless      ODOR: None  
BOILING PT (F): 212      pH: 1.3      SPECIFIC GRAVITY: 1.01  
VAPOR PRESSURE (mm Hg): 17      VAPOR DENSITY (AIR=1): .65  
PERCENT VOLATILE BY VOLUME: 99      SOLUBILITY IN WATER: Soluble

4. FIRE, EXPLOSION HAZARD AND REACTIVITY DATA

FLASH PT: NA      METHOD: NA  
FLAMMABLE LIMITS:      LEL: NA      UEL: NA  
EXTINGUISHING MEDIA: NA  
SPECIAL PROCEDURES: Wear self-contained (positive pressure if available)  
breathing apparatus and special protective clothing  
FIRE/EXPLOSION HAZARDS AND HAZARDOUS DECOMPOSITION PRODUCTS:  
May emit toxic fumes of carbon dioxide, carbon monoxide, nitrogen oxides,  
phosphine, phosphorus oxides, sulfur oxides. Contact with metals may produce hydrogen gas.  
NFPA CODE: Health: I Flammability: 0 Reactivity: 0      Specific: NA  
CONDITIONS TO AVOID: Extreme heat, temperatures. Contact with metals, oxidizers,  
strong caustic.

5. HEALTH HAZARD DATA

INGREDIENT: Organic acid  
TOXICITY: LD50(oral-rat): 2400 mg/kg      LD50(skin-rat): >7940 mg/kg  
PEL: NE      TLV: NE  
STEL: NE

INGREDIENT: N,N-Diethyl-p-phenylenediamine sulfate  
TOXICITY: LD50(unr-rat): 450 mg/kg  
PEL: NE      TLV: NE  
STEL: NE

5. HEALTH HAZARD DATA - continued

ROUTE(S) OF ENTRY: Inhalation      Ingestion X      Skin X  
TARGET ORGAN(S): Eyes, skin, gastrointestinal tract  
CARCINOGENICITY: NTP No IARC No      OSHA No  
HEALTH HAZARDS AND SYMPTOMS OF EXPOSURE:  
EYES: Irritant  
SKIN: Irritant. Contact may cause dermatitis.  
INGESTION: Irritant, toxic. May cause gastrointestinal irritation, nausea, cramps, diarrhea.  
INHALATION: NA  
MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE: Eye and skin conditions

6. PRECAUTIONARY MEASURES

PROTECTIVE EQUIPMENT: General purpose gloves, safety glasses, lab coat  
HANDLING: Avoid contact with eyes, skin, and clothing. Avoid breathing chemical. Wash thoroughly after handling.  
STORAGE: Cool, dry area. Avoid direct sunlight.

7. EMERGENCY AND FIRST AID PROCEDURES

EYE AND SKIN CONTACT: Immediately flush eyes with water for 15 minutes. Call physician. Wash skin thoroughly with soap and water.  
INGESTION: Give large amounts of water or large amounts of water with milk of magnesia. Call physician. DO NOT INDUCE VOMITING.  
INHALATION: NA

8. SPILL AND DISPOSAL PROCEDURES

SPILL OR RELEASE: Neutralize with soda ash. Absorb with vermiculite or other inert material. Containerize for later disposal.  
DISPOSAL: Incineration or other method to comply with all local, state, and federal regulations.

NA = Not applicable  
ND = Not determined  
NE = Not established

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R-0003

**MATERIAL SAFETY DATA SHEET**

MANUFACTURER: TAYLOR TECHNOLOGIES, INC  
31 LOVETON CIRCLE  
SPARKS, MD 21152  
TELEPHONE: 410-472-4340

1.PRODUCT IDENTIFICATION

CATALOG NO.: R-0003  
PRODUCT NAME: DPD Reagent #3  
CHEMICAL FAMILY: Inorganic salt solution

2.INGREDIENTS

INGREDIENT	CAS NO.	%	NATURE OF HAZARD
Potassium iodide	7681-11-0	<20	Irritant
Sodium carbonate	497-19-8	<1	Irritant alkali
Deionized water	7732-18-5	to 100	None

3.PHYSICAL/CHEMICAL CHARACTERISTICS

STATE: Liquid      APPEARANCE: Clear, colorless      ODOR: None  
BOILING PT (F): 212      pH: 10.5      SPECIFIC GRAVITY: 1.07  
VAPOR PRESSURE (mm Hg): 17      VAPOR DENSITY (AIR=1):.6  
PERCENT VOLATILE BY VOLUME: 80      SOLUBILITY IN WATER: Soluble

4.FIRE, EXPLOSION HAZARD AND REACTIVITY DATA

FLASH PT: NA      METHOD: NA  
FLAMMABLE LIMITS:      LEL: NA      UEL: NA  
EXTINGUISHING MEDIA: NA  
SPECIAL PROCEDURES: Wear self-contained (positive pressure if available)  
breathing apparatus and full-protective clothing  
FIRE/EXPLOSION HAZARDS AND HAZARDOUS DECOMPOSITION PRODUCTS:  
May emit toxic fumes of iodine.  
NFPA CODE: Health: 0      Flammability: 0      Reactivity: 0      Specific: NA  
CONDITIONS TO AVOID: Extreme heat, temperatures. Contact with oxidizers, acids.

5.HEALTH HAZARD DATA

INGREDIENT: Potassium iodide  
TOXICITY: LD50(ori-mus): 1862 mg/kg  
PEL: NE      TLV: NE  
STEL: NE

ROUTE(S) OF ENTRY: Inhalation      Ingestion X      Skin X  
TARGET ORGAN(S): Eyes, skin  
CARCINOGENICITY: NTP No      IARC No      OSHA No

HEALTH HAZARDS AND SYMPTOMS OF EXPOSURE:

EYES: Irritant  
SKIN: Irritant. Contact may cause dermatitis.  
INGESTION: Irritant. May cause gastrointestinal irritation.  
INHALATION: NA  
MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE: Eye and skin conditions

**6.PRECAUTIONARY MEASURES**

**PROTECTIVE EQUIPMENT:** General purpose gloves, safety glasses, lab coat

**HANDLING:** Avoid contact with eyes, skin, and clothing. Avoid breathing chemical. Wash thoroughly after handling.

**STORAGE:** Cool, dry area. Avoid direct sunlight.

**7.EMERGENCY AND FIRST AID PROCEDURES**

**EYE AND SKIN CONTACT:** Immediately flush eyes with water for 15 minutes. Call physician.

Wash skin thoroughly with soap and water.

**INGESTION:** Give large amounts of water. Call physician. Induce vomiting under direction of physician.

**INHALATION:** NA

**8.SPILL AND DISPOSAL PROCEDURES**

**SPILL OR RELEASE:** Absorb with vermiculite or other inert material.

Containerize for later disposal.

**DISPOSAL:** Incineration or other method to comply with all local, state, and federal regulations.

NA = Not applicable

ND = Not determined

NE = Not established

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DATE PREPARED: May 1996

R-0004

**MATERIAL SAFETY DATA SHEET**

MANUFACTURER: TAYLOR TECHNOLOGIES, INC  
31 LOVETON CIRCLE  
SPARKS, MD 21152  
TELEPHONE: 410-472-4340

PRODUCT IDENTIFICATION

CATALOG NO.: R-0004  
PRODUCT NAME: pH Indicator Solution (Phenol Red)  
CHEMICAL FAMILY: Sulfonphthalein dye solution

2.INGREDIENTS

INGREDIENT	CAS NO.	%	NATURE OF HAZARD
Phenolsulfonphthalein (phenol red)	143-74-8	<1	Irritant
Sodium hydroxide	1310-73-2	<1	Irritant alkali
Deionized water	7732-18-5	to 100	None

3.PHYSICAL/CHEMICAL CHARACTERISTICS

STATE: Liquid	APPEARANCE: Clear, red-orange	ODOR: Sulfidic
BOILING PT (F): 212	pH: 7.6	SPECIFIC GRAVITY: 1
VAPOR PRESSURE (mm Hg): 17	VAPOR DENSITY (AIR=1): .6	
PERCENT VOLATILE BY VOLUME: 98	SOLUBILITY IN WATER: Soluble	

4.FIRE, EXPLOSION.HAZARD AND REACTIVITY DATA

FLASH PT: NA METHOD: NA  
FLAMMABLE LIMITS: LEL: NA UEL: NA  
EXTINGUISHING MEDIA: NA  
SPECIAL PROCEDURES: Wear self-contained (positive pressure if available)  
breathing apparatus and full-protective clothing  
FIRE/EXPLOSION HAZARDS AND HAZARDOUS DECOMPOSITION PRODUCTS: May emit  
toxic fumes of carbon oxides, sulfur oxides.  
NFPA CODE: Health: 0 Flammability: 0 Reactivity: 0 Specific: NA  
CONDITIONS TO AVOID: Extreme heat, temperatures.

5.HEALTH HAZARD DATA

INGREDIENT: Sodium hydroxide  
TOXICITY: LD50(ori-rat): 140-340 mg/kg  
PEL: 2 mg/m3 TLV: 2 mg/m3  
STEL: NE

ROUTE(S) OF ENTRY: Inhalation Ingestion X Skin X  
TARGET ORGAN(S): Eyes, skin  
CARCINOGENICITY: NTP No IARC No OSHA No

HEALTH HAZARDS AND SYMPTOMS OF EXPOSURE:

EYES: Irritant

SKIN: Irritant. Contact may cause staining.

INGESTION: Irritant. May cause gastrointestinal irritation.

INHALATION: NA

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE: Eye and skin conditions

**6. PRECAUTIONARY MEASURES**

**PROTECTIVE EQUIPMENT:** General purpose gloves, safety glasses, lab coat

**HANDLING:** Avoid contact with eyes, skin, and clothing. Avoid breathing chemical. Wash thoroughly after handling.

**STORAGE:** Cool, dry area. Avoid direct sunlight.

**7. EMERGENCY AND FIRST AID PROCEDURES**

**EYE AND SKIN CONTACT:** Immediately flush eyes with water for 15 minutes. Call physician. Wash skin thoroughly with soap and water.

**INGESTION:** Give large amounts of water. Call physician. Induce vomiting under direction of physician.

**INHALATION:** NA

**8. SPILL AND DISPOSAL PROCEDURES**

**SPILL OR RELEASE:** Absorb with vermiculite or other inert material.

Containerize for later disposal.

**DISPOSAL:** Incineration or other method to comply with all local, state, and federal regulations.

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DATE PREPARED: May 1996



R-0005

**MATERIAL SAFETY DATA SHEET**

MANUFACTURER: TAYLOR TECHNOLOGIES, INC  
31 LOVETON CIRCLE  
SPARKS, MD 21152  
TELEPHONE: 410-472-4340

1.PRODUCT IDENTIFICATION

CATALOG NO.: R-0005  
PRODUCT NAME: Acid Demand Reagent (ADR)  
CHEMICAL FAMILY: Inorganic acid solution

2.INGREDIENTS

INGREDIENT	CAS NO.	%	NATURE OF HAZARD
Sulfuric acid	7664-93-9	<1	Irritant acid
Deionized water	7732-18-5	to 100	None

3.PHYSICAL/CHEMICAL CHARACTERISTICS

STATE: Liquid	APPEARANCE: Clear, colorless	ODOR: None
BOILING PT (F): 212	pH: 1.3	SPECIFIC GRAVITY: 1
VAPOR PRESSURE (mm Hg): 17		VAPOR DENSITY (AIR=1): .6
PERCENT VOLATILE BY VOLUME: 100		SOLUBILITY IN WATER: Soluble

4.FIRE, EXPLOSION HAZARD AND REACTIVITY DATA

FLASH PT: NA , METHOD: NA  
FLAMMABLE LIMITS: LEL: NA UEL: NA  
EXTINGUISHING MEDIA: Dry chemical, carbon dioxide  
SPECIAL PROCEDURES: Wear self-contained (positive pressure if available)  
breathing apparatus and special protective clothing  
FIRE/EXPLOSION HAZARDS AND HAZARDOUS DECOMPOSITION PRODUCTS: May  
react violently with water. May react with metals to produce hydrogen gas. May  
ignite combustible materials. May emit toxic fumes of sulfur oxides.  
NFPA CODE: Health: 1 Flammability: 0 Reactivity: 1 Specific: CORR  
CONDITIONS TO AVOID: Extreme heat, temperatures. Contact with strong alkali, metals.

5.HEALTH HAZARD DATA

INGREDIENT: Sulfuric acid  
TOXICITY: LD50(oral-rat): 2140 mg/kg  
PEL: 1 mg/m3 TLV: 1 mg/m3  
STEL: 3 mg/m3

ROUTE(S) OF ENTRY: Inhalation Ingestion X Skin X  
TARGET ORGAN(S): Eyes, skin  
CARCINOGENICITY: NTP No IARC No OSHA No

HEALTH HAZARDS AND SYMPTOMS OF EXPOSURE:

EYES: Irritant. Contact may cause burns.

SKIN: Irritant. Contact may cause burns.

INGESTION: Irritant. May cause gastrointestinal irritation.

INHALATION: NA

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE: Eye and skin conditions

**6.PRECAUTIONARY MEASURES**

**PROTECTIVE EQUIPMENT:** General purpose gloves, safety glasses, lab coat

**HANDLING:** Avoid contact with eyes, skin, and clothing. Avoid breathing chemical. Wash thoroughly after handling.

**STORAGE:** Cool, dry area. Avoid direct sunlight.

**7.EMERGENCY AND FIRST AID PROCEDURES**

**EYE AND SKIN CONTACT:** Immediately flush eyes with water for 15 minutes. Call physician.

Wash skin thoroughly with baking soda, soap and water.

**INGESTION:** Give large amounts of water or large amounts of water with milk of magnesia.

Call physician. **DO NOT INDUCE VOMITING.**

**INHALATION:** NA

**8.SPILL AND DISPOSAL PROCEDURES**

**SPILL OR RELEASE:** Neutralize with soda ash. Absorb with vermiculite or other inert material. Containerize for later disposal.

**DISPOSAL:** Incineration or other method to comply with all local, state, and federal regulations.

NA = Not applicable

ND = Not determined

NE = Not established

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DATE PREPARED: May 1996

R-0006

**MATERIAL SAFETY DATA SHEET**

MANUFACTURER: TAYLOR TECHNOLOGIES, INC  
31 LOVETON CIRCLE  
SPARKS, MD 21152  
TELEPHONE: .410-472-4340

1.PRODUCT IDENTIFICATION

CATALOG NO.: R-0006  
PRODUCT NAME: Base Demand Reagent (BDR)  
CHEMICAL FAMILY: Inorganic alkali solution

2.INGREDIENTS

INGREDIENT	CAS NO.	%	NATURE OF HAZARD
Sodium carbonate	497-19-8	<1	Irritant alkali
Deionized water	7732-18-5	to 100	None

3.PHYSICAL/CHEMICAL CHARACTERISTICS

STATE: Liquid	APPEARANCE: Clear, colorless	ODOR: None
BOILING PT (F): 212	pH: 11.2	SPECIFIC GRAVITY: 1
VAPOR PRESSURE (mm Hg): 17		VAPOR DENSITY (AIR=1): .6
PERCENT VOLATILE BY VOLUME: 99		SOLUBILITY IN WATER: Soluble

4.FIRE, EXPLOSION HAZARD AND REACTIVITY DATA

FLASH PT: NA    METHOD: NA  
FLAMMABLE LIMITS:                      LEL: NA    UEL: NA  
EXTINGUISHING MEDIA: NA  
SPECIAL PROCEDURES: Wear self-contained (positive pressure if available)  
breathing apparatus and full-protective clothing  
FIRE/EXPLOSION HAZARDS AND HAZARDOUS DECOMPOSITION PRODUCTS: May  
react violently with strong acids, fluorine, aluminum and lithium metals, and phosphorus  
pentoxide. May emit toxic fumes of sodium oxide and carbon dioxide.  
NFPA CODE: Health: 1,                      Flammability: 0                      Reactivity: 0                      Specific: NA  
CONDITIONS TO AVOID: Extreme heat, temperatures. Contact with strong  
acids, fluorine, metals, phosphorus pentoxide.

5.HEALTH HAZARD DATA

INGREDIENT: Sodium carbonate  
TOXICITY: LD50(ori-rat): 4090 mg/kg  
PEL: NE    TLV: NE  
STEL: NE

ROUTE(S) OF ENTRY: Inhalation                      Ingestion X                      Skin X  
TARGET ORGAN(S): Eyes, skin  
CARCINOGENICITY: NTP No                      IARC No                      OSHA No

HEALTH HAZARDS AND SYMPTOMS OF EXPOSURE:  
EYES: Irritant  
SKIN: Irritant  
INGESTION: Irritant. May cause gastrointestinal irritation.  
INHALATION: NA  
MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE: Eye and skin conditions

**6.PRECAUTIONARY MEASURES**

**PROTECTIVE EQUIPMENT:** General purpose gloves, safety glasses, lab coat

**HANDLING:** Avoid contact with eyes, skin, and clothing. Avoid breathing chemical. Wash thoroughly after handling.

**STORAGE:** Cool, dry area. Avoid direct sunlight.

**7.EMERGENCY AND FIRST AID PROCEDURES**

**EYE AND SKIN CONTACT:** Immediately flush eyes with water for 15 minutes. Call physician. Wash skin thoroughly with soap and water.

**INGESTION:** Give large amounts of water. Call physician. **DO NOT INDUCE VOMITING.**

**INHALATION:** NA

**8.SPILL AND DISPOSAL PROCEDURES**

**SPILL OR RELEASE:** Neutralize with dilute acid. Absorb with vermiculite or other inert material. Containerize for later disposal.

**DISPOSAL:** Incineration or other method to comply with all local, state, and federal regulations.

NA = Not applicable

ND = Not determined

NE = Not established

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DATE PREPARED: May 1996

R-0007

**MATERIAL SAFETY DATA SHEET**

MANUFACTURER: TAYLOR TECHNOLOGIES, INC  
31 LOVETON CIRCLE  
SPARKS, MD 21152  
TELEPHONE: 410-472-4340

1.PRODUCT IDENTIFICATION

CATALOG NO.: R-0007  
PRODUCT NAME: Thiosulfate N110  
CHEMICAL FAMILY: Inorganic salt solution

2.INGREDIENTS

INGREDIENT	CAS NO.	%	NATURE OF HAZARD
Sodium thiosulfate	7772-98-7	<5	Irritant
Sodium carbonate	497-19-8	<1	Irritant alkali
Deionized water	7732-18-5	to 100	None

3.PHYSICAL/CHEMICAL CHARACTERISTICS

STATE: Liquid      APPEARANCE: Clear, colorless      ODOR: None  
BOILING PT (F): 212      pH: 9.6      SPECIFIC GRAVITY: 1  
VAPOR PRESSURE (mm Hg): 17      VAPOR DENSITY (AIR=1): .6  
PERCENT VOLATILE BY VOLUME: 97      SOLUBILITY IN WATER: Soluble

4.FIRE, EXPLOSION HAZARD AND REACTIVITY DATA

FLASH PT: NA      METHOD: NA  
FLAMMABLE LIMITS:      LEL: NA      UEL: NA  
EXTINGUISHING MEDIA: NA  
SPECIAL PROCEDURES: Wear self-contained (positive pressure if available)  
breathing apparatus and full-protective clothing  
FIRE/EXPLOSION HAZARDS AND HAZARDOUS DECOMPOSITION PRODUCTS: May emit  
toxic fumes of sulfur oxides, hydrogen sulfide.  
NFPA CODE: Health: 1      Flammability: 0      Reactivity: 0      Specific: NA  
CONDITIONS TO AVOID: Extreme heat, temperatures. Contact with acids,  
strong oxidizers.

5.HEALTH HAZARD DATA

INGREDIENT: Sodium thiosulfate  
TOXICITY: LDLo(oral-hmn): 300 mg/kg/7D TFX:BLD  
PEL: NE.      TLV: NE  
STEL: NE

ROUTE(S) OF ENTRY: Inhalation      Ingestion X      Skin X

TARGET ORGAN(S): Eyes, skin

CARCINOGENICITY: NTP No      IARC No      OSHA No

HEALTH HAZARDS AND SYMPTOMS OF EXPOSURE:

EYES: Irritant

SKIN: Irritant

INGESTION: Irritant. May cause gastrointestinal irritation.

INHALATION: NA

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE: Eye and skin conditions

**6.PRECAUTIONARY MEASURES**

**PROTECTIVE EQUIPMENT:** General purpose gloves, safety glasses, lab coat

**HANDLING:** Avoid contact with eyes, skin, and clothing. Avoid breathing chemical. Wash thoroughly after handling.

**STORAGE:** Cool, dry area. Avoid direct sunlight.

**7.EMERGENCY AND FIRST AID PROCEDURES**

**EYE AND SKIN CONTACT:** Immediately flush eyes with water for 15 minutes. Call physician. Wash skin thoroughly with soap and water.

**INGESTION:** Give large amounts of water. Call physician. Induce vomiting under direction of physician.

**INHALATION:** NA

**8.SPILL AND DISPOSAL PROCEDURES**

**SPILL OR RELEASE:** Neutralize with dilute acid. Absorb with vermiculite or other inert material. Containerize for later disposal.

**DISPOSAL:** Incineration or other method to comply with all local, state, and federal regulations.

NA = Not applicable

ND = Not determined

NE = Not established

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DATE PREPARED: May 1996

**R-0008**  
**MATERIAL SAFETY DATA SHEET**

MANUFACTURER: TAYLOR TECHNOLOGIES, INC  
31 LOVETON CIRCLE  
SPARKS, MD 21152  
TELEPHONE: 410-472-4340

**PRODUCT IDENTIFICATION**

CATALOG NO.: R-0008  
PRODUCT NAME: Total Alkalinity Indicator  
CHEMICAL FAMILY: Organic dye solution

**2.INGREDIENTS**

INGREDIENT	CAS NO.	%	NATURE OF HAZARD
3,31,5,51-Tetrabromo-m-cresolsulfonphthalein (bromocresol green)	76-60-8	<1	Irritant
2-[[4-(Dimethylamino)-phenyl]azo]benzoic acid (methyl red)	493-52-7	<1	Irritant
Sodium carbonate	497-19-8	<1	Irritant alkali
Sodium hydroxide	1310-73-2	<1	Irritant alkali
Deionized water	7732-18-5	to 100	None

**3.PHYSICAL/CHEMICAL CHARACTERISTICS**

STATE: Liquid	APPEARANCE: Dark green	ODOR: None
BOILING PT (F): 212	pH: 8.5	SPECIFIC GRAVITY: 1
VAPOR PRESSURE (mm Hg): 17		VAPOR DENSITY (AIR=1): .6
PERCENT VOLATILE BY VOLUME: 99		SOLUBILITY IN WATER: Soluble

**4.FIRE, EXPLOSION HAZARD AND REACTIVITY DATA**

FLASH PT: NA                      METHOD: NA  
FLAMMABLE LIMITS: LEL: NA                      UEL: NA  
EXTINGUISHING                      MEDIA: Dry chemical, carbon dioxide, water spray or foam  
SPECIAL PROCEDURES: Wear self-contained (positive pressure if available) breathing apparatus and full-protective clothing  
FIRE/EXPLOSION HAZARDS AND HAZARDOUS DECOMPOSITION PRODUCTS:  
May emit toxic fumes of carbon oxides.  
NFPA CODE: Health: 0                      Flammability: 0                      Reactivity: 0                      Specific: NA  
CONDITIONS TO AVOID: Extreme heat, temperatures.

**5.HEALTH HAZARD DATA**

INGREDIENT: NA  
TOXICITY: NA  
PEL: NA    TLV: NA  
STEL: NE  
  
ROUTE(S) OF ENTRY: Inhalation                      Ingestion X                      Skin X  
TARGET ORGAN(S): Eyes, skin  
CARCINOGENICITY: NTP No IARC No OSHA No  
HEALTH HAZARDS AND SYMPTOMS OF EXPOSURE:  
EYES: Irritant  
SKIN: Irritant. Contact may cause staining.  
INGESTION: Irritant. May cause gastrointestinal irritation.  
INHALATION: NA  
MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE: Eye and skin conditions

**6.PRECAUTIONARY MEASURES**

**PROTECTIVE EQUIPMENT:** General purpose gloves, safety glasses, lab coat

**HANDLING:** Avoid contact with eyes, skin, and clothing. Avoid breathing chemical. Wash thoroughly after handling.

**STORAGE:** Cool, dry area. Avoid direct sunlight.

**7.EMERGENCY AND FIRST AID PROCEDURES**

**EYE AND SKIN CONTACT:** Immediately flush eyes with water for 15 minutes. Call physician. Wash skin thoroughly with soap and water.

**INGESTION:** Give large amounts of water. Call physician. Induce vomiting under direction of physician.

**INHALATION:** NA

**8.SPILL AND DISPOSAL PROCEDURES**

**SPILL OR RELEASE:** Absorb with vermiculite or other inert material.

Containerize for later disposal.

**DISPOSAL:** Incineration or other method to comply with all local, state, and federal regulations.

NA = Not applicable

ND = Not determined

NE = Not established

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DATE PREPARED: May 1996



R-0009

**MATERIAL SAFETY DATA SHEET**

MANUFACTURER: TAYLOR TECHNOLOGIES, INC  
31 LOVETON CIRCLE  
SPARKS, MD 21152  
TELEPHONE: 410-472-4340

1.PRODUCT IDENTIFICATION

CATALOG NO.: R-0009  
PRODUCT NAME: Sulfuric Acid .12N  
CHEMICAL FAMILY: Inorganic acid solution

2.INGREDIENTS

INGREDIENT	CAS NO.	%	NATURE OF HAZARD
Sulfuric acid	7664-93-9	<1	Irritant acid
Deionized water	7732-18-5	to 100	None

3.PHYSICAL/CHEMICAL CHARACTERISTICS

STATE: Liquid	APPEARANCE: Clear, colorless	ODOR: None
BOILING PT (F): 212	pH: 1.3	SPECIFIC GRAVITY: 1
VAPOR PRESSURE (mm Hg): 17		VAPOR DENSITY (AIR=1): .6
PERCENT VOLATILE BY VOLUME: 100		SOLUBILITY IN WATER: Soluble

4.FIRE, EXPLOSION HAZARD AND REACTIVITY DATA

FLASH PT: NA METHOD: NA  
FLAMMABLE LIMITS: LEL: NA UEL: NA  
EXTINGUISHING MEDIA: Dry chemical, carbon dioxide  
SPECIAL PROCEDURES: Wear self-contained (positive pressure if available)  
breathing apparatus and special protective clothing  
FIRE/EXPLOSION HAZARDS AND HAZARDOUS DECOMPOSITION PRODUCTS: May  
react violently with water. May react with metals to produce hydrogen gas. May ignite  
combustible materials. May emit toxic fumes of sulfur oxides.  
NFPA CODE: Health: 1 Flammability: 0 Reactivity: 1 Specific: CORR  
CONDITIONS TO AVOID: Extreme heat, temperatures. Contact with strong alkali, metals.

5.HEALTH HAZARD DATA

INGREDIENT: Sulfuric acid  
TOXICITY: LD50(ori-rat): 2140 mg/kg  
PEL: 1 mg/m3 TLV: 1 mg/m3  
STEL: 3 mg/m3

ROUTE(S) OF ENTRY: Inhalation	Ingestion X	Skin X
TARGET ORGAN(S): Eyes, skin		
CARCINOGENICITY: NTP No	IARC No	OSHA No
HEALTH HAZARDS AND SYMPTOMS OF EXPOSURE:		
EYES: Irritant. Contact may cause burns.		
SKIN: Irritant. Contact may cause burns.		
INGESTION: Irritant. May cause gastrointestinal irritation.		
NHALATION: NA		
MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE: Eye and skin conditions		

**6.PRECAUTIONARY MEASURES**

**PROTECTIVE EQUIPMENT:** General purpose gloves, safety glasses, lab coat

**HANDLING:** Avoid contact with eyes, skin, and clothing. Avoid breathing chemical. Wash thoroughly after handling.

**STORAGE:** Cool, dry area. Avoid direct sunlight.

**7.EMERGENCY AND FIRST AID PROCEDURES**

**EYE AND SKIN CONTACT:** Immediately flush eyes with water for 15 minutes. Call-physician.

Wash skin thoroughly with baking soda, soap and water.

**INGESTION:** Give large amounts of water or large amounts of water with milk of magnesia.

Call physician. **DO NOT INDUCE VOMITING.**

**INHALATION:** NA

**8.SPILL AND DISPOSAL PROCEDURES**

**SPILL OR RELEASE:** Neutralize with soda ash. Absorb with vermiculite or other inert material. Containerize for later disposal'.

**DISPOSAL:** Incineration or other method to comply with all local, state, and federal regulations.

NA = Not applicable

ND = Not determined

NE = Not established

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DATE PREPARED: May 1996

R-0010

**MATERIAL SAFETY DATA SHEET**

MANUFACTURER: TAYLOR TECHNOLOGIES  
31 LOVETON CIRCLE  
SPARKS, MD 21152  
TELEPHONE: 410-472-4340

PRODUCT IDENTIFICATION  
CATALOG NO.: R-0010  
PRODUCT NAME: Calcium Buffer  
CHEMICAL FAMILY: Inorganic alkali solution

2.INGREDIENTS

INGREDIENT	CAS NO.	%	NATURE OF HAZARD
Sodium hydroxide	1310-73-2	<2	Irritant alkali
Deionized water	7732-18-5	to 100	None

3.PHYSICAL/CHEMICAL CHARACTERISTICS

STATE: Liquid	APPEARANCE: Clear, colorless	ODOR: None
BOILING PT (F): 230	pH: 13.1	SPECIFIC GRAVITY: 1.2
VAPOR PRESSURE (mm Hg): 17		VAPOR DENSITY (AIR=1):.6
PERCENT VOLATILE BY VOLUME: 98		SOLUBILITY IN WATER: Soluble

4.FIRE, EXPLOSION HAZARD AND REACTIVITY DATA

FLASH PT: NA      METHOD: NA  
FLAMMABLE LIMITS:      LEL: NA      UEL: NA  
EXTINGUISHING MEDIA: Dry chemical, carbon dioxide, water spray or foam  
SPECIAL PROCEDURES: Wear self-contained (positive pressure if available)  
breathing apparatus and special protective clothing  
FIRE/EXPLOSION HAZARDS AND HAZARDOUS DECOMPOSITION PRODUCTS: May  
react with metals to produce hydrogen gas. May emit toxic or irritating fumes.  
NFPA CODE: Health: 2      Flammability: 0      Reactivity: 0      Specific: ALK  
CONDITIONS TO AVOID: Extreme heat, temperatures. Contact with strong acids, metals,  
aldehydes, organic halogens.

5.HEALTH HAZARD DATA

INGREDIENT: Sodium hydroxide  
TOXICITY: LD50(ori-rat): 140-340 mg/kg  
PEL: 2 mg/m3      TLV: 2 mg/m3  
STEL: NE

ROUTE(S) OF ENTRY: Inhalation      Ingestion X      Skin X

TARGET ORGAN(S): Eyes, skin

CARCINOGENICITY: NTP No      IARC No      OSHA No

HEALTH HAZARDS AND SYMPTOMS OF EXPOSURE:

EYES: Irritant. Contact may cause burns.

SKIN: Irritant. Contact may cause burns.

INGESTION: Irritant. May cause burns of mouth, throat, esophagus, stomach.

INHALATION: NA

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE: Eye and skin conditions

**6.PRECAUTIONARY MEASURES**

**PROTECTIVE EQUIPMENT:** General purpose gloves, safety glasses, lab coat

**HANDLING:** Avoid contact with eyes, skin, and clothing. Avoid breathing chemical. Wash thoroughly after handling.

**STORAGE:** Cool, dry area. Avoid direct sunlight.

**7.EMERGENCY AND FIRST AID PROCEDURES**

**EYE AND SKIN CONTACT:** Immediately flush eyes with water for 15 minutes. Call physician. Wash skin thoroughly with soap and water.

**INGESTION:** Give large amounts of water. Call physician. **DO NOT INDUCE VOMITING.**

**INHALATION:** NA

**8.SPILL AND DISPOSAL PROCEDURES**

**SPILL OR RELEASE:** Neutralize with dilute acid. Absorb with vermiculite or other inert material. Containerize for later disposal.

**DISPOSAL:** Incineration or other method to comply with all local, state, and federal regulations.

NA = Not applicable

ND = Not determined

NE = Not established

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DATE PREPARED: May 1996

**R-0011L**

**MATERIAL SAFETY DATA SHEET**

MANUFACTURER: TAYLOR TECHNOLOGIES, INC  
31LOVETON CIRCLE  
SPARKS, MD 21152  
TELEPHONE: 410-472-4340

**PRODUCT IDENTIFICATION**

CATALOG NO.: R-0011L  
PRODUCT NAME: Calcium Indicator Liquid  
CHEMICAL FAMILY: Alcoholic organic dye and amine solution

**2.INGREDIENTS**

INGREDIENT	CAS NO.	%	NATURE OF HAZARD
Triethanolamine	102-71-6	77 w/w	Irritant vapor
Isopropyl alcohol	67-63-0	23 w/w	Flammable
Calcon 2	538-85-4	<1	Irritant

**3.PHYSICAL/CHEMICAL CHARACTERISTICS**

STATE: Liquid	APPEARANCE: Dark purple	ODOR: Ammonical
BOILING PT (F): 500-600	pH: 10.3	SPECIFIC GRAVITY: 1.02
VAPOR PRESSURE (mm Hg): ND		VAPOR DENSITY (AIR=1): 2
PERCENT VOLATILE BY VOLUME: 99		SOLUBILITY IN WATER: Soluble

**4.FIRE, EXPLOSION HAZARD AND REACTIVITY DATA**

FLASH PT: 64 F      METHOD: Closed cup  
FLAMMABLE LIMITS: LEL: 2%      UEL: 12%  
EXTINGUISHING MEDIA: Dry chemical, carbon dioxide, water spray, or alcohol foam  
SPECIAL PROCEDURES: Wear self-contained (positive pressure if available) breathing apparatus and full-protective clothing. Cool exposed containers with water spray. Knock down vapors with water spray.  
FIRE/EXPLOSION HAZARDS AND HAZARDOUS DECOMPOSITION PRODUCTS: Vapors flammable. May be ignited by heat, sparks, or flames. May emit toxic fumes of nitrogen oxides and carbon monoxide.  
NFPA CODE: Health: 1      Flammability:.2      Reactivity: I      Specific: NA  
CONDITIONS TO AVOID: Extreme heat, temperatures. Contact with strong acids, strong oxidizers.

**5.HEALTH HAZARD DATA**

INGREDIENT: Triethanolamine  
TOXICITY: LD50(ori-rat): 8680 mg/kg  
PEL: NE      TLV: NE  
STEL: NE

INGREDIENT: Isopropyl alcohol  
TOXICITY: LD50(ori-rat): 5840 mg/kg  
PEL: 980 mg/m3      TLV: 980 mg/m3  
STEL: NE

5. HEALTH HAZARD DATA - continued

ROUTE(S) OF ENTRY: Inhalation X                      Ingestion X                      Skin X

TARGET ORGAN(S): Eyes, skin, respiratory tract

CARCINOGENICITY: NTP No                      IARC No                      OSHA No

HEALTH HAZARDS AND SYMPTOMS OF EXPOSURE:

EYES: Irritant

SKIN: Irritant. Contact may cause dermatitis, staining.

INGESTION: Irritant. May cause severe gastrointestinal disturbance.

INHALATION: Irritant. May cause narcosis.

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE: Eye, skin, and respiratory conditions

6. PRECAUTIONARY MEASURES

PROTECTIVE EQUIPMENT: General purpose gloves, safety glasses, lab coat

HANDLING: Avoid contact with eyes, skin, and clothing. Avoid breathing chemical. Wash thoroughly after handling.

STORAGE: Cool, dry, well-ventilated area. Avoid direct sunlight.

7. EMERGENCY AND FIRST AID PROCEDURES

EYE AND SKIN CONTACT: Immediately flush eyes with water for 15 minutes.

Call physician. Wash skin thoroughly with soap and water.

INGESTION: Give large amounts of water. Call physician. DO NOT INDUCE VOMITING.

INHALATION: Remove to fresh air. Call physician.

8. SPILL AND DISPOSAL PROCEDURES

SPILL OR RELEASE: Absorb with vermiculite or other inert material.

Containerize for later disposal.

DISPOSAL: Incineration or other method to comply with all local, state, and federal regulations.

NA = Not applicable

ND = Not determined

NE = Not established

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DATE PREPARED: May 1996

R-0012

**MATERIAL SAFETY DATA SHEET**

MANUFACTURER: TAYLOR TECHNOLOGIES, INC  
31 LOVETON CIRCLE  
SPARKS, MD 21152  
TELEPHONE: 410-472-4340

1.PRODUCT IDENTIFICATION

CATALOG NO.: R-0012  
PRODUCT NAME: Hardness Reagent  
CHEMICAL FAMILY: Organic chelant solution

2.INGREDIENTS

INGREDIENT	CAS NO.	%	NATURE OF HAZARD
Ethylenediaminetetra-acetic acid	60-00-4	<5	Irritant
Sodium hydroxide	1310-73-2	<1	Irritant alkali
Magnesium chloride	7786-30-3	<1	Irritant
Deionized water	7732-18-5	to 100	None

3.PHYSICAL/CHEMICAL CHARACTERISTICS

STATE: Liquid      APPEARANCE: Clear, colorless      ODOR: None  
BOILING PT (F): 212      pH: 8.1      SPECIFIC GRAVITY: 1  
VAPOR PRESSURE (mm Hg): 17      VAPOR DENSITY (AIR=1): .6  
PERCENT VOLATILE BY VOLUME: 99      SOLUBILITY IN WATER: Soluble

4.FIRE, EXPLOSION HAZARD AND REACTIVITY DATA

FLASH PT: NA      METHOD: NA  
FLAMMABLE LIMITS: LEL: NA      UEL: NA  
EXTINGUISHING MEDIA: Dry chemical, carbon dioxide, water spray or foam  
SPECIAL PROCEDURES: Wear self-contained (positive pressure if available)  
breathing apparatus and full-protective clothing  
FIRE/EXPLOSION HAZARDS AND HAZARDOUS DECOMPOSITION PRODUCTS:  
May emit toxic fumes of nitrogen oxides, sodium oxide.  
NFPA CODE: Health: 0      Flammability: 0      Reactivity: 0      Specific: NA  
CONDITIONS TO AVOID: Extreme heat, temperatures.

5.HEALTH HAZARD DATA

INGREDIENT: Ethylenediaminetetraacetic acid  
TOXICITY: LD50(ori-rat): 2000 mg/kg  
PEL: NE      TLV: NE  
STEL: NE

ROUTE(S) OF ENTRY: Inhalation      Ingestion X      Skin X  
TARGET ORGAN(S): Eyes, skin  
CARCINOGENICITY: NTP No      IARC No      OSHA No  
HEALTH HAZARDS AND SYMPTOMS OF EXPOSURE:  
EYES: Irritant  
SKIN: Irritant  
INGESTION: Irritant. May cause gastrointestinal irritation.  
INHALATION: NA  
MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE: Eye and skin conditions

**6.PRECAUTIONARY MEASURES**

**PROTECTIVE EQUIPMENT:** General purpose gloves, safety glasses, lab coat

**HANDLING:** Avoid contact with eyes, skin, and clothing. Avoid breathing chemical. Wash thoroughly after handling.

**STORAGE:** Cool, dry area. Avoid direct sunlight.

**7.EMERGENCY AND FIRST AID PROCEDURES**

**EYE AND SKIN CONTACT:** Immediately flush eyes with water for 15 minutes. call physician. Wash skin thoroughly with soap and water.

**INGESTION:** Give large amounts of water. Call physician. Induce vomiting under direction of physician.

**INHALATION:** NA

**8.SPILL AND DISPOSAL PROCEDURES**

**SPILL OR RELEASE:** Absorb with vermiculite or other inert material.

Containerize for later disposal.

**DISPOSAL:** Incineration or other method to comply with all local, state, and federal regulations.

NA = Not applicable

ND = Not determined

NE = Not established

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DATE PREPARED: May 1996



R-0013

**MATERIAL SAFETY DATA SHEET**

MANUFACTURER: TAYLOR TECHNOLOGIES, INC  
31 LOVETON CIRCLE  
SPARKS, MD 21152  
TELEPHONE: 410-472-4340

1.PRODUCT IDENTIFICATION

CATALOG NO.: R-0013  
PRODUCT NAME: Cyanuric Acid Reagent  
CHEMICAL FAMILY: Organic salt solution

2.INGREDIENTS

INGREDIENT	CAS NO.	%	NATURE OF HAZARD
Melamine	108-78-1	<1	Irritant
Sodium acetate	127-09-3	<1	Irritant
Acetic acid	64-19-7	<1	Irritant acid
Deionized water	7732-18-5	to 100	None

3.PHYSICAL/CHEMICAL CHARACTERISTICS

STATE: Liquid      APPEARANCE: Clear, colorless      ODOR: None  
BOILING PT (F): 212      pH: 5.8      SPECIFIC GRAVITY: 1  
VAPOR PRESSURE (mm Hg): 17      VAPOR DENSITY (AIR=1): .6  
PERCENT VOLATILE BY VOLUME: 99      SOLUBILITY IN WATER: Soluble

4.FIRE, EXPLOSION HAZARD AND REACTIVITY DATA

FLASH PT: NA      METHOD: NA  
FLAMMABLE LIMITS: LEL: NA      UEL: NA  
EXTINGUISHING MEDIA: Dry chemical, carbon dioxide, water spray or foam  
SPECIAL PROCEDURES: Wear self-contained (positive pressure if available)  
breathing apparatus and full-protective clothing  
FIRE/EXPLOSION HAZARDS AND HAZARDOUS DECOMPOSITION PRODUCTS:  
May emit toxic fumes of nitrogen oxides, cyanide.  
NFPA CODE: Health: 0      Flammability: 0      Reactivity: 0      Specific: NA  
CONDITIONS TO AVOID: Extreme heat, temperatures. Contact with strong  
oxidizers, fluorine.

5.HEALTH HAZARD DATA

INGREDIENT: Melamine  
TOXICITY: LD50(ori-rat): 3161 mg/kg  
PEL: NE      TLV: NE  
STEL: NE  
  
ROUTE(S) OF ENTRY: Inhalation      Ingestion X      Skin X  
TARGET ORGAN(S): Eyes, skin  
CARCINOGENICITY: NTP No      IARC No      OSHA No  
HEALTH HAZARDS AND SYMPTOMS OF EXPOSURE:  
EYES: Irritant  
SKIN: Irritant. Contact may cause dermatitis.  
INGESTION: Irritant. May cause gastrointestinal irritation.  
INHALATION: NA  
MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE: Eye and skin conditions

**6. PRECAUTIONARY MEASURES**

**PROTECTIVE EQUIPMENT:** General purpose gloves, safety glasses, lab coat

**HANDLING:** Avoid contact with eyes, skin, and clothing. Avoid breathing chemical.\* Wash thoroughly after handling.

**STORAGE:** Cool dry area. Avoid direct sunlight.

**EMERGENCY AND FIRST AID PROCEDURES**

**EYE AND SKIN CONTACT:** Immediately flush eyes with water for 15 minutes. Call physician. Wash skin thoroughly with soap and water.

**INGESTION:** Give large amounts of water. Call physician. Induce vomiting under direction of physician.

**INHALATION:** NA

**8. SPILL AND DISPOSAL PROCEDURES**

**SPILL OR RELEASE:** Neutralize with soda ash. Absorb with vermiculite or other inert material. Containerize for later disposal.

**DISPOSAL:** Incineration or other method to comply with all local, state, and federal regulations.

NA = Not applicable

ND = Not determined

NE = Not established

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DATE PREPARED: May 1996

R-0870

**MATERIAL SAFETY DATA SHEET**

MANUFACTURER: TAYLOR TECHNOLOGIES, INC  
31 LOVETON CIRCLE  
SPARKS, MD 21152  
TELEPHONE: 410-472-4340

PRODUCT IDENTIFICATION

CATALOG NO.: R-0870  
PRODUCT NAME: DPD Powder  
CHEMICAL FAMILY: Inorganic/organic salt mixture

2.INGREDIENTS

INGREDIENT	CAS NO.	%	NATURE OF HAZARD
Potassium phosphate	7778-77-0	<65	Irritant
Sodium phosphate	7558-79-4	<35	Irritant
Ethylenediaminetetra- acetic acid	60-00-4	<2	Irritant
N,N-Diethyl-p-phenylene- diamine oxalate	62637-92-7	<2	Irritant, toxic
Inorganic salt (trade secret)	Confidential	<5	Irritant alkali
organic acid (trade secret)	Confidential	<5	Irritant acid
organic acid (trade secret)	Confidential	<5	Irritant

3.PHYSICAL/CHEMICAL CHARACTERISTICS

STATE: Solid      APPEARANCE: Off-white powder      ODOR: None  
BOILING PT (F): NA      pH: NA      SPECIFIC GRAVITY: NA  
VAPOR PRESSURE (mm Hg): NA      VAPOR DENSITY (AIR=1): NA  
PERCENT VOLATILE BY VOLUME: NA      SOLUBILITY IN WATER: >95%

4.FIRE, EXPLOSION HAZARD AND REACTIVITY DATA

FLASH PT: NA METHOD: NA  
FLAMMABLE LIMITS: LEL: NA UEL: NA  
EXTINGUISHING      MEDIA: Dry chemical, carbon dioxide, water spray or foam  
SPECIAL PROCEDURES: Wear self-contained (positive pressure if available)  
breathing apparatus and full-protective clothing  
FIRE/EXPLOSION HAZARDS AND HAZARDOUS DECOMPOSITION PRODUCTS:  
May emit toxic fumes of phosphorus oxides, sodium oxide.  
NFPA CODE: Health: 0      Flammability: 0      Reactivity: 0      Specific: NA  
CONDITIONS TO AVOID: Extreme heat, temperatures.

5.HEALTH HAZARD DATA

INGREDIENT: Potassium phosphate  
TOXICITY: NE  
PEL: NE      TLV: NE  
STEL: NE  
INGREDIENT: Sodium phosphate  
TOXICITY: LD50(ori-rat): 12900 mg/kg  
PEL: NE      TLV: NE  
STEL: NE

5. HEALTH HAZARD DATA - continued

INGREDIENT: N,N-Diethyl-p-phenylenediamine oxalate

TOXICITY: NE

PEL: NE

TLV: NE

STEL: NE

ROUTE(S) OF ENTRY: Inhalation X                      Ingestion X                      Skin X

TARGET ORGAN(S): Eyes, skin, respiratory tract

CARCINOGENICITY: NTP No                      IARC No                      OSHA No

HEALTH HAZARDS AND SYMPTOMS OF EXPOSURE:

EYES: Irritant

SKIN: Irritant

INGESTION: Irritant, toxic. May cause gastrointestinal irritation, nausea, diarrhea, oxalate poisoning.

INHALATION: Irritant, toxic. May cause irritation of respiratory tract and oxalate poisoning.

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE: Eye, skin, and respiratory conditions

6. PRECAUTIONARY MEASURES

PROTECTIVE EQUIPMENT: General purpose gloves, safety glasses, lab coat, dust mask, adequate ventilation

HANDLING: Avoid contact with eyes, skin, and clothing. Avoid breathing chemical. Wash thoroughly after handling.

STORAGE: Cool, dry, well-ventilated area. Avoid direct sunlight.

7. EMERGENCY AND FIRST AID PROCEDURES

EYE AND SKIN CONTACT: Immediately flush eyes with water for 15 minutes.

Call physician. Wash skin thoroughly with soap and water.

INGESTION: Give large amounts of water. Call physician. Induce vomiting under direction of physician.

INHALATION: Remove to fresh air. call physician.

8. SPILL AND DISPOSAL PROCEDURES

SPILL OR RELEASE: Sweep up. Avoid raising dust. Containerize for later disposal.

DISPOSAL: Incineration or other method to comply with all local, state, and federal regulations.

NA = Not applicable

ND = Not determined

NE = Not established

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DATE PREPARED: May 1996

R-0871

**MATERIAL SAFETY DATA SHEET**

MANUFACTURER: TAYLOR TECHNOLOGIES, INC  
31 LOVETON CIRCLE  
SPARKS, MD 21152  
TELEPHONE: 410-472-4340

PRODUCT IDENTIFICATION

CATALOG NO.: R-0871  
PRODUCT NAME: FAS-DPD Titrating Reagent (Chlorine)  
CHEMICAL FAMILY: Inorganic salt solution

2.INGREDIENTS

INGREDIENT	CAS NO.	%	NATURE OF HAZARD
Ferrousethylene-diammonium sulfate	63589-59-3	<1	Irritant
Sulfuric acid	7664-93-9	<1	Irritant acid
Deionized water	7732-18-5	to 100	None

3.PHYSICAL/CHEMICAL CHARACTERISTICS

STATE: Liquid      APPEARANCE: Clear, colorless      ODOR: None  
BOILING PT (F): 212      pH: 2.1      SPECIFIC GRAVITY: 1  
VAPOR PRESSURE (mm Hg): 17      VAPOR DENSITY (AIR=1): .6  
PERCENT VOLATILE BY VOLUME: 98      SOLUBILITY IN WATER: Soluble

4.FIRE, EXPLOSION HAZARD AND REACTIVITY DATA

FLASH PT: NA      METHOD: NA  
FLAMMABLE LIMITS: LEL: NA      UEL: NA  
EXTINGUISHING MEDIA: Dry chemical, carbon dioxide  
SPECIAL PROCEDURES: Wear self-contained (positive pressure if available) breathing apparatus and special protective clothing  
FIRE/EXPLOSION HAZARDS AND HAZARDOUS DECOMPOSITION PRODUCTS: May react violently with water. May react with metals to produce hydrogen gas. May ignite combustible materials. May emit toxic fumes of sulfur oxides.  
NFPA CODE: Health: 1      Flammability: 0      Reactivity: 1      Specific: ACID  
CONDITIONS TO AVOID: Extreme heat, temperatures. Contact with strong alkali, metals.

5.HEALTH HAZARD DATA

INGREDIENT: Sulfuric acid  
TOXICITY: LD50(ori-rat): 2140 mg/kg  
PEL: 1 mg/m3      TLV: 1 mg/m3  
STEL: 3 mg/m3

ROUTE(S) OF ENTRY: Inhalation      Ingestion X      Skin X

TARGET ORGAN(S): Eyes, skin

CARCINOGENICITY: NTP No      IARC No      OSHA No

HEALTH HAZARDS AND SYMPTOMS OF EXPOSURE:

EYES: Irritant. Contact may cause burns.

SKIN: Irritant. Contact may cause burns.

INGESTION: Irritant. May cause gastrointestinal irritation.

INHALATION: NA

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE: Eye and skin conditions

6.PRECAUTIONARY MEASURES

PROTECTIVE EQUIPMENT: General purpose gloves, safety glasses, lab coat

HANDLING: Avoid contact with eyes, skin, and clothing. Avoid breathing chemical. Wash thoroughly after handling.

STORAGE: Cool, dry area. Avoid direct sunlight.

7.EMERGENCY AND FIRST AID PROCEDURES

EYE AND SKIN CONTACT: Immediately flush eyes with water for 15 minutes. Call physician. Wash skin thoroughly with baking soda, soap and water.

INGESTION: Give large amounts of water or large amounts of water with milk of magnesia. Call physician. DO NOT INDUCE VOMITING.

INHALATION: NA

8.SPILL AND DISPOSAL PROCEDURES

SPILL OR RELEASE: Neutralize with soda ash. Absorb with vermiculite or other inert material. Containerize for later disposal.

DISPOSAL: Incineration or other method to comply with all local, state, and federal regulations.

NA = Not applicable

ND = Not determined

NE = Not established

This Material Safety Data Sheet has been prepared in accordance with 29 CFR Part 1910.1200 and contains information believed to be accurate and complete at the date of preparation. However, no warranty is expressed or implied. Advice given under "Spill and Disposal Procedures" assumes compliance with federal, state, and local regulations regarding the disposal of hazardous waste.

DATE PREPARED: July 1999