

MATERIAL SAFETY DATA SHEET

HF scientific, inc.
3170 Metro Parkway
Fort Myers, FL 33916-7597
(239) 337-2116

24 Hour Emergency
Telephone Number
CHEMTREC
1-800-424-9300

SECTION 1 PRODUCT IDENTIFICATION:

PRODUCT NAME: TOTAL CHLORINE BUFFER SOLUTION

CATALOG NUMBERS:

HF scientific, inc.: 14273, 09936

USA BlueBook

CHEMICAL FAMILY: Not applicable

SYNONYMS: Not applicable

FORMULA:

| | |
|------------------|-----------------|
| Carboxylate Salt | Confidential |
| Sodium Hydroxide | CAS # 1310-73-2 |
| EDTA | CAS # 6381-92-6 |
| Potassium Iodide | CAS # 7681-11-0 |
| Water | CAS # 7732-18-5 |

SECTION 2 HAZARDOUS INGREDIENTS

| Hazardous | OSHA PEL | ACGIH TLV | Other Limits |
|-----------------------|---------------------|---------------------|--------------|
| Ingredient(s): | | | Recommended |
| 4.3% Sodium Hydroxide | | | |
| CAS # 1310-73-2 | 2 mg/m ³ | 2 mg/m ³ | |
| Potassium Iodide | | | |
| CAS#: 7681-11-0 | Not established | | |

SECTION 3 PHYSICAL DATA

Boiling Point: Not determined
Solubility In Water: Totally miscible
Vapor Pressure (mm Hg): N/A
Melting Point: Not determined
Appearance And Odor: Clear liquid
Vapor Density (AIR=1): N/A
Specific Gravity: 1.22
Percent Volatile By Volume: Similar to water.
Evaporation Rate: Similar to water .

SECTION 4 FIRE AND EXPLOSION HAZARD DATA

Flash Point: Not flammable.
Flammable Limits: None
LEL: UEL:
Extinguishing Media: Use media appropriate to cause of fire.
Fire Fighting Procedures: N/A
Unusual Fire and Explosive Hazards: None

SECTION 5 HEALTH EFFECTS AND FIRST AID

Route(s) Of Entry: Inhalation? Yes. Skin? Yes. Ingestion? Yes.
Health Hazards (Acute And Chronic): Can irritate eyes, skin and mucous membranes. If swallowed, solution may cause gastrointestinal upset.
Carcinogenicity: NTP? N/A IARC Monographs? N/A OSHA Regulated?N/A
Not Listed
Signs and Symptoms Of Exposure: Chronic exposure may cause thyroid adenoma, goiter, iodism, skin rashes, headaches, running nose, weakness, anemia, weight loss and general depression.
Medical Conditions Generally Aggravated By Exposure: Preexisting skin

disorders, eye problems or respiratory problems.

EMERGENCY FIRST AID PROCEDURES:

Eyes: Flush with water for at least 15 minutes; get immediate medical assistance.

Skin: Remove contaminated clothing and wash with soap and water. Flush with water 15 to 20 minutes until chemical is gone. Get medical attention if irritation develops.

Ingestion: Give several glasses of water and induce vomiting by inserting finger to the back of the throat. Call a physician.

Inhalation: Remove to fresh air. Get medical attention for any breathing difficulty.

GET MEDICAL ASSISTANCE FOR ALL CASES OF OVEREXPOSURE!

SECTION 6 REACTIVITY DATA

Stability: Stable

Conditions To Avoid: Keep container tightly closed. Store in a cool, dry ventilated area. Protect from physical damage and direct sunlight.

Incompatibilities: Potassium iodide reacts violently or explosively with many fluorides, perchlorates, alkali metals, strong acids, strong oxidants and diazonium salts.

Hazardous Decomposition Products: Fumes of iodine and potassium oxide and sodium oxide may be released when heated to decomposition

Hazardous Polymerization: Will not occur.

SECTION 7 SAFE HANDLING AND USE

Steps To Be Taken In Case Material Is Released or Spilled: Ventilate area of the leak or spill. Absorb with sand, vermiculite or other dry absorbent. Dispose of properly.

Waste Disposal Method: Dispose of in accordance with all applicable federal, state and local environmental regulations.

Precautions To Be Taken In Handling & Storage: Keep container tightly closed. Store in cool, dry, well ventilated area away from sunlight. Keep away from heat, acids and oxidizers. Wash thoroughly after handling.

Other Precautions:

SECTION 8 CONTROL MEASURES

RESPIRATORY PROTECTION: Not necessary in normal use.

VENTILATION SYSTEMS: General mechanical ventilation satisfactory in normal use.

EYE PROTECTION: Safety glasses

SKIN PROTECTION: Rubber gloves

OTHER PROTECTIVE CLOTHING OR EQUIPMENT: Lab coat, eye wash, safety shower

WORK/HYGIENIC PRACTICES: Wash well after handling. Avoid skin contact.

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DATE: November 2, 2004

REVISION: 0

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SECTION 1 PRODUCT IDENTIFICATION:

PRODUCT NAME: INDICATOR SOLUTION FREE / TOTAL

CATALOG NUMBERS:

HF scientific, inc.: 14274, 09935, 09936

USA BlueBook

CHEMICAL FAMILY: Not applicable

SYNONYMS: Not applicable

FORMULA:

Sulfuric Acid
Water

CAS # 7664-93-9
CAS # 7732-18-5

SECTION 2 HAZARDOUS INGREDIENTS

| Hazardous Ingredient(s): | OSHA PEL | ACGIH TLV | Other Limits Recommended |
|--|---------------------|---------------------|-----------------------------|
| 6.15% Sulfuric Acid CAS # 7664-93-9 | 1 mg/m ³ | 1 mg/m ³ | |

SECTION 3 PHYSICAL DATA

Boiling Point: Not determined

Solubility In Water: Totally miscible

Vapor Pressure (mm Hg): N/A

Melting Point: Not determined

Appearance And Odor: Clear liquid

Vapor Density (AIR=1): N/A

Specific Gravity: 1.06

Percent Volatile By Volume: Similar to water.

Evaporation Rate: Similar to water.

SECTION 4 FIRE AND EXPLOSION HAZARD DATA

Flash Point: Not flammable.

Flammable Limits: None

LEL: UEL:

Extinguishing Media: Use media appropriate to cause of fire.

Fire Fighting Procedures: N/A

Unusual Fire and Explosive Hazards: None

SECTION 5 HEALTH HAZARD DATA

Route(s) Of Entry: Inhalation? Yes Skin? Yes Ingestion? Yes

Health Hazards (Acute and Chronic):

Carcinogenicity: NTP? IARC Monographs? OSHA Regulated?
Not Listed

Signs And Symptoms Of Exposure: N/A

EMERGENCY FIRST AID PROCEDURES:

Eyes: Immediately flush eyes gently with copious quantities of water for a minimum of 15 minutes. Use fingers to assure that eyelids are separated and that eye is being irrigated. Call a physician.

Skin: Remove contaminated clothing. Flush contaminated area with copious quantities of water for 15 minutes. Call a physician.

Ingestion: Do not induce vomiting. Seek medical attention promptly. If vomiting occurs, take steps to avoid aspiration of vomited material into the respiratory tract. To prevent choking, position body so that material is freely ejected. Give milk, water containing milk of magnesia or olive oil.

Inhalation: Move patient immediately to uncontaminated atmosphere. Except in minor cases of exposure without symptoms, seek medical advise promptly.

SECTION 6 REACTIVITY DATA

Stability: Stable

Conditions To Avoid: None found

Incompatibilities: Strong alkalis. Alcohols. Aldehydes. Acrylates. Reducing agents. Prolonged contact with aluminum, lead, or zinc may liberate flammable hydrogen.

Hazardous Decomposition Products: Oxides of sulfur. Toxic fumes.

Hazardous Polymerization: Will not occur.

SECTION 7 SAFE HANDLING AND USE

Steps To Be Taken In Case Material Is Released Or Spilled: Absorb with paper. Wash area with water.

Waste Disposal Method: Dispose of in accordance with local, state, and federal regulations or contact an approved with licensed disposal agency.

Precautions To Be Taken In Handling & Storage: Use normal safe chemical handling procedures.

Other Precautions: None

SECTION 8 CONTROL MEASURES

RESPIRATORY PROTECTION: Not necessary in normal use.

VENTILATION SYSTEMS: General mechanical ventilation satisfactory in normal use.

EYE PROTECTION: Safety glasses

SKIN PROTECTION: Rubber gloves

OTHER PROTECTIVE CLOTHING OR EQUIPMENT: Lab coat, eye wash, safety shower

WORK/HYGIENIC PRACTICES: Wash well after handling. Avoid skin contact.

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SECTION 1 PRODUCT IDENTIFICATION:

PRODUCT NAME: DPD POWDER FOR FREE AND TOTAL ANALYZERS

CATALOG NUMBERS:

HF scientific, inc.: 14275, 09935, 09936

USA BlueBook

CHEMICAL FAMILY: Not applicable

SYNONYMS: Not applicable

FORMULA:

DPD Salt Confidential

SECTION 2 HAZARDOUS INGREDIENTS

| Hazardous | OSHA PEL | ACGIH TLV | Other Limits |
|-----------------------------------|-----------------|-----------|--------------|
| Ingredient(s): | | | Recommended |
| DPD* Salt | Not established | | None |
| *(N,N-Diethyl-p-Phenylenediamine) | | | |

SECTION 3 PHYSICAL DATA

BOILING POINT (F): Not applicable
SOLUBILITY IN WATER: Soluble
VAPOR PRESSURE (mm Hg): Not applicable
MELTING POINT: Not found - Decomposes
APPEARANCE AND ODOR: White to pale pink powder, no odor
VAPOR DENSITY (AIR=1): Not applicable
SPECIFIC GRAVITY (H₂O =1): Not available
EVAPORATION RATE: Not applicable

SECTION 4 FIRE AND EXPLOSION HAZARD DATA

FLASH POINT (METHOD USED): Not flammable
FLAMMABLE LIMITS:
LEL: Not applicable **UEL:** Not applicable
EXTINGUISHING MEDIA: Water, dry chemical, alcohol foam, or carbon dioxide.
FIRE FIGHTING PROCEDURES: Suitable to cause of fire. Wear protective clothing and self-contained breathing apparatus.
UNUSUAL FIRE AND EXPLOSIVE HAZARDS: May emit toxic fumes.

SECTION 5 HEALTH HAZARD EFFECTS AND FIRST AID

ROUTE(S) OF ENTRY: Inhalation? Yes. Skin? Yes. Ingestion? Yes.
HEALTH HAZARDS (ACUTE AND CHRONIC): Irritating to eyes and respiratory tract. May cause allergic skin reaction.
CARCINOGENICITY: NTP? IARC Monographs? OSHA Regulated?
Not listed
SIGNS AND SYMPTOMS OF EXPOSURE: Moderately toxic. Rash, irritation of eyes and respiratory tract. May be absorbed through skin and may be sensitizing to skin.
MEDICAL CONDITIONS GENERALLY AGGRAVATED BY EXPOSURE:
Allergy or sensitivity to salts of DPD.
EMERGENCY FIRST AID PROCEDURES:
Eye And Skin Exposure: Immediately flush eyes with water for 15 minutes. Call physician. Wash skin with soap and plenty of water.
Ingestion: Give large quantities of water or milk. Call physician immediately.
Inhalation: Remove to fresh air.

SECTION 6 REACTIVITY DATA

STABILITY: Stable under normal conditions of use and storage
CONDITIONS TO AVOID: Exposure to light, heat, and moisture.
INCOMPATIBILITIES (MATERIALS TO AVOID): Strong oxidizing agents
HAZARDOUS DECOMPOSITION OR BYPRODUCTS: Toxic fumes
HAZARDOUS POLYMERIZATION: Will not occur

SECTION 7 SAFE HANDLING AND USE

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED:
Scoop into a beaker and dissolve in water.

WASTE DISPOSAL METHOD: DISPOSE OF IN ACCORDANCE WITH ALL FEDERAL, STATE, AND LOCAL REGULATIONS.

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING: Wash thoroughly after handling. Avoid contact with eyes, skin and clothing. Avoid breathing dust. Use only with adequate ventilation. Store in a cool, dry, dark place.

OTHER PRECAUTIONS: None

SECTION 8 CONTROL MEASURES

RESPIRATORY PROTECTION: Not necessary in normal use.

VENTILATION SYSTEMS: General mechanical ventilation satisfactory in normal use.

EYE PROTECTION: Safety glasses

SKIN PROTECTION: Rubber gloves

OTHER PROTECTIVE CLOTHING OR EQUIPMENT: Lab coat, eye wash, safety shower

WORK/HYGIENIC PRACTICES: Wash well after handling. Avoid skin contact.

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