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# MATERIAL SAFETY DATA SHEET

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

Prepared 3/21/05

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SECTION 1. CHEMICAL IDENTIFICATION Product Name: **Fluoro Catalase Kit**

Part No: 5019

Components:

1. Part # 3021. 5X Reaction Buffer: 20 ml of 0.25M sodium phosphate buffer, pH 7.4
2. Part # 4010. Detection reagent (ADHP): One Vial, for 500 assays.
3. Part # 3022. Hydrogen Peroxide: 200µL of a stabilized 3% solution.
4. Part # 6009. Horseradish Peroxidase: 18.9 Units of enzyme.
5. Part# 6008. Catalase enzyme: crystalline suspension.

## Part# 4010

Synonyms: ADHP, 10-Acetyl-3,7-dihydroxyphenoxazine

CAS #: 119171-73-2

Chemical Formula: C<sub>14</sub>H<sub>11</sub>NO<sub>4</sub>

SECTION 2. HAZARDS IDENTIFICATION Not known.

SECTION 3. CHARACTERISTICS red brown powder.

Boiling point °f: No data available.

Vapor pressure (mm Hg): No data available.

Vapor density: No data available.

Solubility in water: Very low.

Specific gravity: Not applicable.

% Volatile by volume: Not applicable.

Evaporation rate: No data available.

pH: Not applicable to a powder.

SECTION 4. STORAGE, HANDLING, STABILITY : The material is air sensitive. Store dry material at 4 °C.

SECTION 5. SAFETY CONTROL MEASURES Gloves and standard laboratory protective clothing and eyewear are recommended. Safe laboratory practices should be followed.

SECTION 6. HEALTH HAZARD DATA: May enter the body through inhalation, ingestion, eye, and skin contact. To our knowledge the hazards of this material have not been fully tested. Handle material with caution.

**RTECS Number:** None known

**Toxicity:** We are not aware of any toxicity data for this product.

**Health Hazards:** We are not aware of any reported health hazards for this product. We recommend treating all chemicals with caution.

**Potential Hazards:** To our knowledge, the health hazards have not been thoroughly investigated.

**Carcinogenicity:** Not listed by NTP, IARC or OSHA.

SECTION 7. FIRST AID MEASURES Avoid prolonged or repeated exposure. Remove contaminated clothing and shoes, and wash before reuse.

Skin: Wash skin thoroughly with soap and water.

Eyes: Flush with water for at least 15 minutes.

Ingestion: Seek medical attention.

Inhalation: Remove to fresh air. Seek medical attention.

SECTION 8. FIRE/EXPLOSION HAZARD DATA. Use any means suitable for extinguishing surrounding fire. It is not necessary to use any special firefighting procedures. Water spray, carbon dioxide, dry chemical

powder or appropriate foam can all be used.

**Thermal Decomposition:** No decomposition if used according to specifications.

**Dangerous Reactions:** None identified.

**Dangerous Products of Decomposition:** No dangerous decomposition products identified.

SECTION 9. ACCIDENTAL RELEASE MEASURES For release of large amounts of material, wear safety glasses and rubber gloves. Stop source of leak and isolate spill area. Collect material in an appropriate container and dispose all waste in accordance with applicable laws. Dispose of all waste in accordance with all national, state, and local regulations.

## Part# 3022

**Synonyms:** 3%; Hydrogen Peroxide

**CAS No.:** 7722-84-1

**Molecular Weight:** 34.01

**Chemical Formula:** H<sub>2</sub>O<sub>2</sub> in aqueous solution (3%)

### 2. Composition/Information on Ingredients

Ingredient	CAS No	Percent	Hazardous
Hydrogen Peroxide	7722-84-1	2 - 4%	Yes
Water	7732-18-5	96 - 98%	No

### 3. Hazards Identification

#### Emergency Overview

**WARNING! MAY BE HARMFUL IF SWALLOWED. CAUSES EYE IRRITATION.**

**SAF-T-DATA<sup>(tm)</sup>** Ratings (Provided here for your convenience)

Health Rating: 2 - Moderate

Flammability Rating: 0 - None

Reactivity Rating: 1 - Slight

Contact Rating: 2 - Moderate

Lab Protective Equip: GOGGLES; LAB COAT; VENT HOOD; PROPER GLOVES

Storage Color Code: Green (General Storage)

#### Potential Health Effects

##### Inhalation:

Not expected to be a health hazard under normal conditions.

##### Ingestion:

Large oral doses may cause irritation and blistering to the mouth, throat, and abdomen.

May also cause abdominal pain, vomiting, and diarrhea.

##### Skin Contact:

No adverse effects expected on intact skin. Contact on burn or open skin may cause stinging pain or irritation.

##### Eye Contact:

Causes irritation, redness, and pain.

##### Chronic Exposure:

No information found.

##### Aggravation of Pre-existing Conditions:

No information found.

#### 4. First Aid Measures

**Inhalation:**

Not expected to require first aid measures.

**Ingestion:**

Give several glasses of water to drink to dilute. If large amounts were swallowed, get medical advice.

**Skin Contact:**

Not expected to require first aid measures. Wash exposed area with soap and water. Get medical advice if irritation develops.

**Eye Contact:**

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

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#### 5. Fire Fighting Measures

**Fire:**

Not considered to be a fire hazard. Concentrated hydrogen peroxide (30%) is a strong oxidizer, but this dilute product does not present that hazard.

**Explosion:**

Not considered to be an explosion hazard. Drying of concentrated hydrogen peroxide on clothing or other combustible materials may cause fire or explosion.

**Fire Extinguishing Media:**

Use any means suitable for extinguishing surrounding fire.

**Special Information:**

In the event of a fire, wear full protective clothing and NIOSH-approved self-contained breathing apparatus with full facepiece operated in the pressure demand or other positive pressure mode.

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#### 6. Accidental Release Measures

Ventilate area of leak or spill. Wear appropriate personal protective equipment as specified in Section 8. Contain and recover liquid when possible. Collect liquid in an appropriate container or absorb with an inert material (e. g., vermiculite, dry sand, earth), and place in a chemical waste container. Do not use combustible materials, such as saw dust. Small amounts of residue may be flushed to sewer with plenty of water.

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#### 7. Handling and Storage

Store in a cool, well-ventilated dark area. Protect from freezing. Isolate from incompatible substances. Protect container from physical damage. Containers of this material may be hazardous when empty since they retain product residues (vapors, liquid); observe all warnings and precautions listed for the product.

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#### 8. Exposure Controls/Personal Protection

**Airborne Exposure Limits:**

-OSHA Permissible Exposure Limit (PEL):

1 ppm (TWA).

-ACGIH Threshold Limit Value (TLV):

1 ppm (TWA), A3: Animal carcinogen.

**Ventilation System:**

A system of local and/or general exhaust is recommended to keep employee exposures below the Airborne Exposure Limits. Local exhaust ventilation is generally preferred

because it can control the emissions of the contaminant at its source, preventing dispersion of it into the general work area. Please refer to the ACGIH document, *Industrial Ventilation, A Manual of Recommended Practices*, most recent edition, for details.

**Personal Respirators (NIOSH Approved):**

Not expected to require personal respirator usage. If the exposure limit is exceeded, wear a supplied air, full-facepiece respirator, airlined hood, or full-facepiece self-contained breathing apparatus. This substance has unknown warning properties.

**Skin Protection:**

Wear protective gloves and clean body-covering clothing.

**Eye Protection:**

Use chemical safety goggles and/or a full face shield where splashing is possible. Maintain eye wash fountain and quick-drench facilities in work area.

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## 9. Physical and Chemical Properties

**Appearance:**

Clear, colorless solution.

**Odor:**

Odorless.

**Solubility:**

Infinitely soluble.

**Specific Gravity:**

ca. 1.0

**pH:**

No information found.

**% Volatiles by volume @ 21C (70F):**

100

**Boiling Point:**

ca. 100C (ca. 212F)

**Melting Point:**

ca. 0C (ca. 32F)

**Vapor Density (Air=1):**

No information found.

**Vapor Pressure (mm Hg):**

No information found.

**Evaporation Rate (BuAc=1):**

No information found.

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## 10. Stability and Reactivity

**Stability:**

Stable under ordinary conditions of use and storage.

**Hazardous Decomposition Products:**

Decomposes to water and oxygen.

**Hazardous Polymerization:**

Will not occur.

**Incompatibilities:**

Heat, reducing agents, organic materials, dirt, alkalis, rust, and many metals.

**Conditions to Avoid:**

Light, heat, incompatibles.

## 11. Disposal Considerations

Dilute with water and flush to sewer if local ordinances allow, otherwise, whatever cannot be saved for recovery or recycling should be managed in an appropriate and approved waste disposal facility. Processing, use or contamination of this product may change the waste management options. State and local disposal regulations may differ from federal

disposal regulations. Dispose of container and unused contents in accordance with federal, state and local requirements.

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## 12. Transport Information

Not regulated.

## 13. Other Information

**NFPA Ratings:** Health: 1 Flammability: 0 Reactivity: 1

**Label Hazard Warning:**

WARNING! MAY BE HARMFUL IF SWALLOWED. CAUSES EYE IRRITATION.

**Label Precautions:**

Avoid contact with eyes.

Keep container closed.

Wash thoroughly after handling.

**Label First Aid:**

In case of eye contact, immediately flush eyes with plenty of water for at least 15 minutes.

Get medical attention. If swallowed, give large amounts of water to drink. Never give anything by mouth to an unconscious person. If large amounts were swallowed, get medical advice.

**Product Use:**

Laboratory Reagent.

## Section 1. Identification

**Synonyms:** Part # 3011. 5X Reaction Buffer: 20 ml of 0.25M sodium phosphate buffer, pH 7.4.

Part # 6004. Horseradish Peroxidase.

Part# 6008 Catalase Crystalline suspension.

**CAS No.:** NA

**Molecular Weight:** NA

**Chemical Formula:** NA

## Section 2 Hazard Identification

Harmful if swallowed. May cause irritation. Avoid breathing vapors, or dusts. Use with adequate ventilation. Avoid contact with eyes, skin, and clothes. Wash thoroughly after handling. Keep container closed

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## Section 3 First Aid Measures

Harmful if swallowed. May cause irritation. Avoid breathing vapors, or dusts. Use with adequate ventilation. Avoid contact with eyes, skin, and clothes. Wash thoroughly after handling. Keep container closed  
FIRST AID: SKIN: Wash exposed area with soap and water. If irritation persists, seek medical attention.

EYES: Wash eyes with plenty of water for at least 15 minutes, lifting lids occasionally. Seek Medical Aid.

INHALATION: Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen

INGESTION: If swallowed, induce vomiting immediately after giving two glasses of water. Never give anything by mouth to an unconscious person.

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#### **Section 4 Fire Fighting Measures**

Fire Extinguisher Type:	Any means suitable for extinguishing surrounding fire
Fire/Explosion Hazards:	Thermal decomposition produces highly toxic fumes.
Fire Fighting Procedure:	Wear self-contained breathing apparatus and protective clothing to prevent contact with skin and clothing.

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#### **Section 5 Accidental Release Measures**

Absorb spill with inert material, then place in a chemical waste container. Dispose of in a manner consistent with federal, local law.

#### **Section 6 Handling and Storage**

Store in a cool dry place. Do not get in eyes, on skin, on clothing. Wash thoroughly after handling

#### **Section 7 Exposure Controls & Personal Protection**

Ventilation:: Local Exhaust  
Use Gloves, Safety Glasses with side shield.  
Other Protective Equipment: Use safe laboratory handling procedures.

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#### **Section 8 Stability and Reactivity Information**

Stability: Stable                      Conditions to Avoid: Avoid contact with incompatible materials.  
Materials to Avoid:  
Strong acids, aluminum and steel  
Hazardous Decomposition Products:  
Thermal decomposition may produce toxic gases.  
Hazardous Polymerization: Will Not Occur  
Condition to Avoid: None known

#### **Section 9 Additional Information**

Conditions aggravated/target organs: Persons with pre-existing eye and skin conditions will be more susceptible. Acute: Skin irritation, mild eye irritation, ingestion of large quantities may cause potassium poisoning. Chronic: Dermatitis, eye damage.  
DOT Classification: Not Regulated

#### **DISCLAIMER**

For R&D use only. Not for drug, household or other uses.

#### **WARRANTY**

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