

## Material Safety Data Sheet – Apo Active 3

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

### CHEMICAL IDENTIFICATION:

**Product Name:** Apo Active 3 – FITC & PE – Active Caspase 3 Detection

**Catalog #** FAB200-1 & FAB200-2; PAB200-1 & PAB200-2

**Components:**

Part# 1001 & 1002: 1 Vial of Rabbit anti active affinity purified polyclonal antibody.

Part# 2002 & 2001: Vial of FITC Goat anti Rabbit affinity purified polyclonal antibody.

Part# 2004 & 2003: Vial of PE Goat anti Rabbit affinity purified polyclonal antibody.

Part# 3001 : 10X Fixative solution

### Part # 3001

#### Section 1 - Chemical Identification

Synonyms: FORMALDEHYDE, FORMALDEHYDE SOLUTION >35% (10-15% MEOH)

CAS #: 50-00-0

Chemical Formula: CH<sub>2</sub>O

#### Section 2 - Hazards Identification

##### EMERGENCY OVERVIEW

Toxic.

Toxic by inhalation, in contact with skin and if swallowed. Causes burns. Toxic: danger of very serious irreversible effects through inhalation, in contact with skin and if swallowed. Limited evidence of a carcinogenic effect. May cause sensitization by skin contact. May cause heritable genetic damage. Readily absorbed through skin. Lachrymator. Contains formaldehyde. Potential cancer hazard.

Target organ(s): Kidneys. Eyes.

Combustible.

##### HMIS RATING

HEALTH: 3\*

FLAMMABILITY: 2

REACTIVITY: 2

##### NFPA RATING

HEALTH: 3

FLAMMABILITY: 2

REACTIVITY: 2

\*additional chronic hazards present.

For additional information on toxicity, please refer to Section 11.

**Section 3 - First Aid Measures****ORAL EXPOSURE**

If swallowed, wash out mouth with water provided person is conscious. Call a physician immediately. Do not induce vomiting.

**INHALATION EXPOSURE**

If inhaled, remove to fresh air. If not breathing give artificial respiration. If breathing is difficult, give oxygen.

**DERMAL EXPOSURE**

In case of skin contact, flush with copious amounts of water for at least 15 minutes. Remove contaminated clothing and shoes. Call a physician.

**EYE EXPOSURE**

In case of contact with eyes, flush with copious amounts of water for at least 15 minutes. Assure adequate flushing by separating the eyelids with fingers. Call a physician.

**Section 4 - Fire Fighting Measures****FLASH POINT**

133 °F 56 °C Method: closed cup

**EXPLOSION LIMITS**

Lower: 7 % Upper: 70 %

**AUTOIGNITION TEMP**

420 °C

**FLAMMABILITY**

N/A

**EXTINGUISHING MEDIA**

Suitable: Carbon dioxide, dry chemical powder, or appropriate foam.

**FIREFIGHTING**

Protective Equipment: Wear self-contained breathing apparatus and protective clothing to prevent contact with skin and eyes. Specific Hazard(s): Combustible liquid. Emits toxic fumes under fire conditions.

**Section 5 - Accidental Release Measures****PROCEDURE TO BE FOLLOWED IN CASE OF LEAK OR SPILL**

Evacuate area.

**PROCEDURE(S) OF PERSONAL PRECAUTION(S)**

Wear self-contained breathing apparatus, rubber boots, and heavy rubber gloves.

**METHODS FOR CLEANING UP**

Cover with dry lime or soda ash, pick up, keep in a closed container, and hold for waste disposal. Ventilate area and wash spill site after material pickup is complete.

**Section 6 - Handling and Storage****HANDLING**

User Exposure: Do not breathe vapor. Do not get in eyes, on skin, on clothing. Avoid prolonged or repeated exposure.

**STORAGE**

Suitable: Keep tightly closed. Keep away from heat, sparks, and open flame. Store in a cool dry place.

**Section 7 - Exposure Controls / PPE****ENGINEERING CONTROLS**

Use only in a chemical fume hood. Safety shower and eye bath.

**PERSONAL PROTECTIVE EQUIPMENT**

Respiratory: Government approved respirator.

Hand: Compatible chemical-resistant gloves.

Eye: Chemical safety goggles.

Other: Faceshield (8-inch minimum).

**GENERAL HYGIENE MEASURES**

Wash contaminated clothing before reuse. Discard contaminated shoes. Wash thoroughly after handling.

**EXPOSURE LIMITS**

Country Source Type Value

ACGIH TLV 0.3 ppm

**Section 8 - Physical/Chemical Properties**

Appearance Physical State: Clear liquid

Color: Colorless

Odor: Pungent

Property Value At Temperature or Pressure

Molecular Weight 30.03 AMU

pH N/A

BP/BP Range 100 °C

MP/MP Range N/A

Freezing Point N/A

Vapor Pressure 40 mmHg 39 °C

Vapor Density 1 g/l

Saturated Vapor Conc. N/A

SG/Density 1.09 g/cm<sup>3</sup>

Bulk Density N/A

Odor Threshold N/A

Volatile% N/A

VOC Content N/A

Water Content N/A

Solvent Content N/A

Evaporation Rate 1

Viscosity N/A

Surface Tension N/A

Partition Coefficient Log Kow: 0.35

Decomposition Temp. N/A

Flash Point 133 °F 56 °C Method: closed cup

Explosion Limits Lower: 7 %

Upper: 70 %

Flammability N/A

Autoignition Temp 420 °C  
Refractive Index 1.3765  
Optical Rotation N/A  
Miscellaneous Data N/A  
Solubility in Water: Complete

#### **Section 9 - Stability and Reactivity**

##### STABILITY

Stable: Stable.

Materials to Avoid: Strong oxidizing agents Incompatible with: aniline, phenol, isocyanates, anhydrides, Strong acids, Strong bases, Amines, Peroxides, Acid chlorides, Acid anhydrides, Alkali metals, Reducing agents.

##### HAZARDOUS DECOMPOSITION PRODUCTS

Hazardous Decomposition Products: Carbon monoxide, Carbon dioxide.

##### HAZARDOUS POLYMERIZATION

Hazardous Polymerization: Will not

#### **Section 10 - Toxicological Information**

##### ROUTE OF EXPOSURE

Skin Contact: Causes burns.

Skin Absorption: Toxic if absorbed through skin. Readily absorbed through skin.

Eye Contact: Causes burns.

Inhalation: Material is extremely destructive to the tissue of the mucous membranes and upper respiratory tract. Toxic if inhaled.

Ingestion: Toxic if swallowed.

##### SENSITIZATION

Skin: May cause allergic skin reaction.

##### TARGET ORGAN(S) OR SYSTEM(S)

Eyes. Kidneys. Liver. Heart.

##### SIGNS AND SYMPTOMS OF EXPOSURE

Coughing, chest pains, difficulty in breathing. Gastrointestinal disturbances. May cause convulsions. To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated. Exposure can cause: Material is extremely destructive to tissue of the mucous membranes and upper respiratory tract, eyes, and skin. Symptoms of exposure may include burning sensation, coughing, wheezing, laryngitis, shortness of breath, headache, nausea, and vomiting. Inhalation may result in spasm, inflammation and edema of the larynx and bronchi, chemical pneumonitis, and pulmonary edema.

##### CHRONIC EXPOSURE - CARCINOGEN

Result: This product is or contains a component that has been reported to be possibly carcinogenic based on its IARC, ACGIH, NTP, or EPA classification.

##### OSHA CARCINOGEN LIST

Rating: Potential cancer hazard.

##### CHRONIC EXPOSURE - MUTAGEN

Result: May alter genetic material.

#### **Section 11 - Disposal Considerations**

##### APPROPRIATE METHOD OF DISPOSAL OF SUBSTANCE OR PREPARATION

Contact a licensed professional waste disposal service to dispose of this material. Observe all federal, state, and local environmental regulations. This combustible material may be burned in a chemical incinerator equipped with an afterburner and scrubber.

**Section 12 - Transport Information**

DOT

Proper Shipping Name: Formaldehyde, solutions, flammable

UN#: 1198

Class: 3

Packing Group: Packing Group III

Hazard Label: Flammable liquid

Hazard Label: Corrosive

PIH: Not PIH

IATA

Proper Shipping Name: Formaldehyde solution, flammable

IATA UN Number: 1198

Hazard Class: 3

Packing Group: III

**Section 13 - Regulatory Information**

EU ADDITIONAL CLASSIFICATION

Symbol of Danger: T

Indication of Danger: Toxic.

R: 23/24/25-34-39/23/24/25-40-43

Risk Statements: Toxic by inhalation, in contact with skin and if swallowed. Causes burns. Toxic: danger of very serious irreversible effects through inhalation, in contact with skin and if swallowed. Limited evidence of a carcinogenic effect. May cause sensitization by skin contact.

S: 26-36/37/39-45-51

Safety Statements: In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. Wear suitable protective clothing, gloves, and eye/face protection. In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

Use only in well ventilated areas.

US CLASSIFICATION AND LABEL TEXT

Indication of Danger: Toxic.

Risk Statements: Toxic by inhalation, in contact with skin and if swallowed. Causes burns. Toxic: danger of very serious irreversible effects through inhalation, in contact with skin and if swallowed. Limited evidence of a carcinogenic effect. May cause sensitization by skin contact.

May cause heritable genetic damage. Safety Statements: In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. Wear suitable protective clothing, gloves, and eye/face protection.

In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible). Use only in well US Statements: Readily absorbed through skin. Lachrymator.

Contains formaldehyde. Potential cancer hazard. Target organ(s):

Kidneys. Eyes. Combustible.

UNITED STATES REGULATORY INFORMATION

SARA LISTED: Yes

NOTES: This product is or contains a component that is subject to SARA313 reporting requirements.

**UNITED STATES - STATE REGULATORY INFORMATION**

**CALIFORNIA PROP - 65**

California Prop - 65: This product is or contains chemical(s) known to the state of California to cause cancer.

**CANADA REGULATORY INFORMATION**

WHMIS Classification: This product has been classified in accordance with the hazard criteria of the CPR, and the MSDS contains all the information required by the CPR.

DSL: No

NDSL: No

**Part# 1001, 1002, 2001, 2002, 2003 and 2004**

**Section 1 - Identification**

**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

**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.

**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.

**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.

**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

**Part# 1001, 1002, 2001 and 2002**

**Contains Sodium Azide 0.02%**

**Section 1 - Composition/Information on Ingredient**

Substance Name CAS # SARA 313

SODIUM AZIDE 26628-22-8 Yes

Formula NaN<sub>3</sub>

Synonyms Azide, sodium

**Section 2 - Hazards Identification**

EMERGENCY OVERVIEW

Highly Toxic (USA) Very Toxic (EU).

Heating may cause an explosion. Very toxic by inhalation, in contact with skin and if swallowed.

Contact with acids liberates very toxic gas. Very toxic to aquatic organisms may cause long-term adverse effects in the aquatic environment.

Readily absorbed through skin. Sodium azide may react with lead and copper plumbing to form highly explosive metal azides. Target organ(s): Nerves. Heart.

HMIS RATING

HEALTH: 4\*

FLAMMABILITY: 0

REACTIVITY: 2

NFPA RATING

HEALTH: 4

FLAMMABILITY: 0

REACTIVITY: 2

\*additional chronic hazards present.

**Section 3 - Fire Fighting Measures****EXPLOSION HAZARDS**

Container explosion may occur under fire conditions. Azide reacts with many heavy metals such as lead, copper, mercury, silver, gold to form explosive compounds. Copper and lead azides are more sensitive than nitroglycerine. Azide reacts with metal halides to give a range of metal azide halides, many of which are explosive. Incompatible with chromyl chloride, hydrazine, bromine, carbon disulfide, dimethyl sulfate, dibromomalonitrile. An explosion occurred when a mixture of sodium azide, methylene chloride, dimethyl sulfoxide, and sulfuric acid were being concentrated on a rotary evaporator.

**FLASH POINT**

300 °C

**EXTINGUISHING MEDIA**

Suitable: Dry chemical powder.

Unsuitable: Do not use water.

**FIREFIGHTING**

Protective Equipment: Wear self-contained breathing apparatus and protective clothing to prevent contact with skin and eyes.

Specific Hazard(s): Emits toxic fumes under fire conditions.

**Section 4 - Accidental Release Measures****PROCEDURE TO BE FOLLOWED IN CASE OF LEAK OR SPILL**

Evacuate area.

**PROCEDURE(S) OF PERSONAL PRECAUTION(S)**

Wear self-contained breathing apparatus, rubber boots, and heavy rubber gloves.

**METHODS FOR CLEANING UP**

Sweep up, place in a bag and hold for waste disposal. Avoid raising dust. Ventilate area and wash spill site after material pickup is complete.

**Section 5 - Handling and Storage****HANDLING**

User Exposure: Do not breath liquid. Do not get in eyes, on skin, on clothing. Avoid prolonged or repeated exposure.

**STORAGE**

Suitable: Keep tightly closed. Store as described on the vials.

Incompatible Materials: Azide reacts with many heavy metals such as lead, copper, mercury, silver, gold to form explosive compounds. Copper and lead azides are more sensitive than nitroglycerine. Azide reacts with metal halides to give a range of metal azide halides, many of which are explosive.

Incompatible with chromyl chloride, hydrazine, bromine, carbon disulfide, dimethyl sulfate, dibromomalonitrile.

**SPECIAL REQUIREMENTS**

Heat sensitive.

**Section 6 - Exposure Controls / PPE****ENGINEERING CONTROLS**

Safety shower and eye bath. Use only in a chemical fume hood.



**PERSONAL PROTECTIVE EQUIPMENT**

Hand: Compatible chemical-resistant gloves.

Eye: Chemical safety goggles.

**GENERAL HYGIENE MEASURES**

Wash contaminated clothing before reuse. Wash thoroughly after handling.

**Section 7 - Physical/Chemical Properties**

Appearance Physical State: liquid

Color: clear

Form: liquid

Odor: Odorless

Property Value At Temperature or Pressure

Molecular Weight 65.01 AMU

pH 7

MP/MP Range: 275°C

Vapor Pressure: 0.01 hPa 20°C

Vapor Density: 2.2 g/l

SG/Density: 1.85g/cm<sup>3</sup>/20°C

Bulk Density: 0.8 kg/l

Decomposition Temp: 300°C

Flash Point: 300°C

Solubility in Water: 20°C

**Section 8 - Stability and Reactivity****STABILITY**

Stable: Stable.

Conditions of Instability: Heat sensitive.

Conditions to Avoid: Do not grind or subject to frictional heat.

Keep from contact with oxidizing materials. Fire or excessive heat may cause explosive decomposition.

Materials to Avoid: Halogenated solvents Avoid contact with metals. Avoid contact with acid, Acid chlorides

**HAZARDOUS DECOMPOSITION PRODUCTS**

Hazardous Decomposition Products: Nitrogen oxides Reacts with protic solvents (water, alcohols, amines, etc.) to release toxic hydrazoic acid

Hazardous Decomposition Products Formed Upon Contact with Water:

Reacts with protic solvents (water, alcohols, amines, etc.) to release toxic hydrazoic acid

**HAZARDOUS POLYMERIZATION**

Hazardous Polymerization: Will not occur

**Section 9 - Toxicological Information****ROUTE OF EXPOSURE**

Skin Contact: May cause skin irritation.

Skin Absorption: May be fatal if absorbed through skin.

Eye Contact: May cause eye irritation.

Inhalation: May be fatal if inhaled. Material may be irritating to mucous membranes and upper respiratory tract.

Ingestion: May be fatal if swallowed.

**TARGET ORGAN(S) OR SYSTEM(S)**

Nerves. Heart. Brain.

**SIGNS AND SYMPTOMS OF EXPOSURE**

Exposure can cause: Nausea, headache, and vomiting. Laboratory experiments in animals have shown sodium azide to produce a profound hypotensive effect, demyelination of myelinated nerve fibers in the central nervous system, testicular damage, blindness, attacks of rigidity, and hepatic and cerebral effects.

**TOXICITY DATA**

Oral Woman: 786 mg/kg

**LDLO**

Remarks: Cardiac: Arrhythmias (including changes in conduction).

Behavioral: Coma. Behavioral: Convulsions or effect on seizure threshold.

Oral Man: 29 mg/kg

**LDLO**

Remarks: Lungs, Thorax, or Respiration: Acute pulmonary edema.

Brain and Coverings: Increased intracranial pressure.

Cardiac: Pulse rate.

Oral Man: 129 mg/kg

**LDLO**

Remarks: Cardiac: Other changes. Cardiac: Pulse rate.

Behavioral: Coma.

Oral Woman: 14 mg/kg

**LDLO**

Remarks: Cardiac: Change in force of contraction.

Cardiac: Arrhythmias (including changes in conduction).

Behavioral: Convulsions or effect on seizure threshold.

Oral Man: 143 mg/kg

**LDLO**

Remarks: Behavioral: Irritability. Sense Organs and Special

Senses (Nose, Eye, Ear, and Taste): Eye: Mydriasis (pupillary dilation). Behavioral: Somnolence (general depressed activity).

Oral Man: 143 mg/kg

**LDLO**

Remarks: Behavioral: Irritability. Sense Organs and Special

Senses (Nose, Eye, Ear, and Taste): Eye: Mydriasis (pupillary dilation). Behavioral: Somnolence (general depressed activity).

Oral Rat: 27 mg/kg

**LD50**

Inhalation

Rat: 37 mg/m<sup>3</sup>

**LC50**

Remarks: Lungs, Thorax, or Respiration: Structural or functional change in trachea or bronchi.

Behavioral: Convulsions or effect on seizure threshold. Sense Organs and Special Senses (Nose, Eye, Ear, and Taste): Eye: Other.

Skin

Rat: 50 mg/kg

**LD50**

Rat: 45100 UG/KG

LD50

Remarks: Lungs, Thorax, or Respiration: Other changes. Peripheral Nerve and Sensation: Spastic paralysis with or without sensory change.

Intratracheal

Rat: 47500 UG/KG

LD50

Remarks: Peripheral Nerve and Sensation: Spastic paralysis with or without sensory change. Lungs, Thorax, or Respiration: Other changes.

Oral

Mouse: 27 mg/kg

LD50

Inhalation

Mouse: 32.4 mg/m<sup>3</sup>

LC50

Remarks: Lungs, Thorax, or Respiration: Structural or functional change in trachea or bronchi. Behavioral: Convulsions or effect on seizure threshold. Sense Organs and Special Senses (Nose, Eye, Ear, and Taste): Eye: Other.

Intraperitoneal

Mouse: 28 MG/KG

LD50

Remarks: Lungs, Thorax, or Respiration: Respiratory stimulation.

Behavioral: Change in motor activity (specific assay).

Behavioral: Convulsions or effect on seizure threshold.

Subcutaneous

Mouse: 23060 UG/KG

LD50

Remarks: Lungs, Thorax, or Respiration: Other changes. Peripheral Nerve and Sensation: Spastic paralysis with or without sensory change.

Intravenous

Mouse: 19 MG/KG

LD50

Skin

Rabbit: 20 mg/kg

LD50

Oral

Bird (wild): 23.7 mg/kg

LD50

#### CHRONIC EXPOSURE - CARCINOGEN

Species: Rat

Route of Application: Oral

Dose: 2730 MG/KG

Exposure Time: 78W

Frequency: C

Result: Endocrine: Tumors. Skin and Appendages: Other: Tumors.

Tumorigenic: Equivocal tumorigenic agent by RTECS criteria.

Species: Rat

Route of Application: Oral

Dose: 5460 MG/KG

Exposure Time: 78W

Frequency: C

Result: Skin and Appendages: Other: Tumors. Endocrine: Tumors.

Tumorigenic: Equivocal tumorigenic agent by RTECS criteria.

NTP CARCINOGEN LIST

Rating: No evidence.

Species: Rat

Route: Gavage

ACGIH CARCINOGEN LIST

Rating: A4

CHRONIC EXPOSURE - MUTAGEN

Species: other insects

Route: Oral

Dose: 100 MG/L

Mutation test: Heritable translocation test

Species: Human

Dose: 30 MMOL/L

Cell Type: HeLa cell

Mutation test: DNA inhibition

Species: Human

Dose: 50 MG/L

Cell Type: fibroblast

Mutation test: DNA inhibition

Species: Rat

Dose: 1 MMOL/L

Cell Type: liver

Mutation test: Mutation in mammalian somatic cells.

Species: Mouse

Dose: 500 MG/L

Exposure Time: 2H

Cell Type: lymphocyte

Mutation test: Mutation in mammalian somatic cells.

Species: Hamster

Dose: 1 MMOL/L

Cell Type: lung

Mutation test: Mutation in mammalian somatic cells.

#### **Section 10** - Disposal Considerations

##### APPROPRIATE METHOD OF DISPOSAL OF SUBSTANCE OR PREPARATION

Contact a licensed professional waste disposal service to dispose of this material. Observe all federal, state, and local environmental regulations.

#### **Section 11** - Transport Information



DOT

Proper Shipping Name: Sodium azide

UN#: 1687

Class: 6.1

Packing Group: Packing Group II

Hazard Label: Toxic substances.

PIH: Not PIH

IATA

Proper Shipping Name: Sodium azide

IATA UN Number: 1687

Hazard Class: 6.1

Packing Group: II

**DISCLAIMER**

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

**WARRANTY**

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