SZABO SCANDIC

Part of Europa Biosite

Produktinformation

- Forschungsprodukte & Biochemikalien
- Zellkultur & Verbrauchsmaterial
- Diagnostik & molekulare Diagnostik
- Laborgeräte & Service

Weitere Information auf den folgenden Seiten!
See the following pages for more information!

Lieferung & Zahlungsart

siehe unsere Liefer- und Versandbedingungen

Zuschläge

- Mindermengenzuschlag
- Trockeneiszuschlag
- Gefahrgutzuschlag
- Expressversand

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5(6)-Carboxyfluorescein diacetate

sc-210423

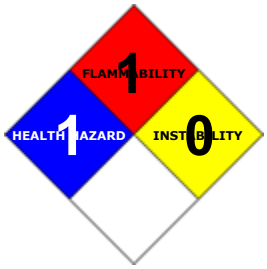
Material Safety Data Sheet

Hazard Alert Code Key:	EXTREME	HIGH	MODERATE	LOW

Section 1 - CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME
5(6)-Carboxyfluorescein diacetate

STATEMENT OF HAZARDOUS NATURE
CONSIDERED A HAZARDOUS SUBSTANCE ACCORDING TO OSHA 29 CFR 1910.1200.

NFPA


SUPPLIER
Santa Cruz Biotechnology, Inc.
2145 Delaware Avenue
Santa Cruz, California 95060
800.457.3801 or 831.457.3800

EMERGENCY
ChemWatch
Within the US & Canada: 877-715-9305
Outside the US & Canada: +800 2436 2255
(1-800-CHEMCALL) or call +613 9573 3112

SYNONYMS
C25-H16-O9, 5(6)-CFDA, 5(6)-carboxy-di-O-acetylfluorescein

Section 2 - HAZARDS IDENTIFICATION

CHEMWATCH HAZARD RATINGS

		Min	Max
Flammability:	1		
Toxicity:	0		
Body Contact:	0		
Reactivity:	1		
Chronic:	2		

Min/Nil=0
Low=1
Moderate=2
High=3
Extreme=4

CANADIAN WHMIS SYMBOLS

EMERGENCY OVERVIEW

RISK

POTENTIAL HEALTH EFFECTS

ACUTE HEALTH EFFECTS

SWALLOWED

■ The material has NOT been classified as "harmful by ingestion".
This is because of the lack of corroborating animal or human evidence.

EYE

■ Although the material is not thought to be an irritant, direct contact with the eye may cause transient discomfort characterized by tearing or conjunctival redness (as with windburn).
Slight abrasive damage may also result.

SKIN

■ The material is not thought to produce adverse health effects or skin irritation following contact (as classified using animal models).
Nevertheless, good hygiene practice requires that exposure be kept to a minimum and that suitable gloves be used in an occupational setting.
■ Open cuts, abraded or irritated skin should not be exposed to this material.
■ Entry into the blood-stream, through, for example, cuts, abrasions or lesions, may produce systemic injury with harmful effects.
Examine the skin prior to the use of the material and ensure that any external damage is suitably protected.

INHALED

■ The material is not thought to produce adverse health effects or irritation of the respiratory tract (as classified using animal models).
Nevertheless, good hygiene practice requires that exposure be kept to a minimum and that suitable control measures be used in an occupational setting.
■ Persons with impaired respiratory function, airway diseases and conditions such as emphysema or chronic bronchitis, may incur further disability if excessive concentrations of particulate are inhaled.

CHRONIC HEALTH EFFECTS

■ Limited evidence suggests that repeated or long-term occupational exposure may produce cumulative health effects involving organs or biochemical systems.
Long term exposure to high dust concentrations may cause changes in lung function i.e. pneumoconiosis; caused by particles less than 0.5 micron penetrating and remaining in the lung.
Exposure to small quantities may induce hypersensitivity reactions characterized by acute bronchospasm, hives (urticaria), deep dermal wheals (angioneurotic edema), running nose (rhinitis) and blurred vision . Anaphylactic shock and skin rash (non-thrombocytopenic purpura) may occur.

Section 3 - COMPOSITION / INFORMATION ON INGREDIENTS

NAME	CAS RN	%
5(6)-carboxyfluorescein diacetate	124387-19-5	>98
commercial product may contain		
acetonitrile	75-05-8	

Section 4 - FIRST AID MEASURES

SWALLOWED

· Immediately give a glass of water. · First aid is not generally required. If in doubt, contact a Poisons Information Center or a doctor.

EYE

■ If this product comes in contact with eyes: · Wash out immediately with water. · If irritation continues, seek medical attention.

SKIN

■ If skin or hair contact occurs: · Flush skin and hair with running water (and soap if available). · Seek medical attention in event of irritation.

INHALED

· If dust is inhaled, remove from contaminated area. · Encourage patient to blow nose to ensure clear passage of breathing. · If irritation or discomfort persists seek medical attention.

NOTES TO PHYSICIAN

■ Treat symptomatically.

Section 5 - FIRE FIGHTING MEASURES

Vapour Pressure (mmHG):	Negligible
Upper Explosive Limit (%):	Not available.
Specific Gravity (water=1):	Not available
Lower Explosive Limit (%):	Not available

EXTINGUISHING MEDIA
· Foam.
· Dry chemical powder.

FIRE FIGHTING
· Alert Emergency Responders and tell them location and nature of hazard.
· Wear breathing apparatus plus protective gloves.

GENERAL FIRE HAZARDS/HAZARDOUS COMBUSTIBLE PRODUCTS
· Combustible solid which burns but propagates flame with difficulty.
· Avoid generating dust, particularly clouds of dust in a confined or unventilated space as dusts may form an explosive mixture with air, and any source of ignition, i.e. flame or spark, will cause fire or explosion. Dust clouds generated by the fine grinding of the solid are a particular hazard; accumulations of fine dust may burn rapidly and fiercely if ignited.
Combustion products include: carbon monoxide (CO), carbon dioxide (CO2), other pyrolysis products typical of burning organic material.
May emit poisonous fumes.

FIRE INCOMPATIBILITY
■ Avoid contamination with oxidizing agents i.e. nitrates, oxidizing acids,chlorine bleaches, pool chlorine etc. as ignition may result.

PERSONAL PROTECTION
Glasses:
Chemical goggles.
Gloves:
Respirator:
Type A-P Filter of sufficient capacity

Section 6 - ACCIDENTAL RELEASE MEASURES

MINOR SPILLS
· Clean up all spills immediately.
· Avoid breathing dust and contact with skin and eyes.
MAJOR SPILLS
■ Moderate hazard.
· CAUTION: Advise personnel in area.
· Alert Emergency Responders and tell them location and nature of hazard.

Section 7 - HANDLING AND STORAGE

PROCEDURE FOR HANDLING
· Avoid all personal contact, including inhalation.
· Wear protective clothing when risk of exposure occurs.
Empty containers may contain residual dust which has the potential to accumulate following settling. Such dusts may explode in the presence of an appropriate ignition source.
· Do NOT cut, drill, grind or weld such containers.
· In addition ensure such activity is not performed near full, partially empty or empty containers without appropriate workplace safety authorisation or permit.

RECOMMENDED STORAGE METHODS
■ Glass container.
· Polyethylene or polypropylene container.
· Check all containers are clearly labelled and free from leaks.

STORAGE REQUIREMENTS
· Store in original containers.
· Keep containers securely sealed.

Section 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION

EXPOSURE CONTROLS

Source	Material	TWA ppm	TWA mg/m³	STEL ppm	STEL mg/m³	Peak ppm	Peak mg/m³	TWA F/CC	Notes
Canada - Alberta Occupational Exposure Limits	acetonitrile (Acetonitrile)	20	34						
Canada - British Columbia Occupational Exposure Limits	acetonitrile (Acetonitrile)	20							Skin
US NIOSH Recommended Exposure Limits (RELs)	acetonitrile (Acetonitrile)	20	34						
US OSHA Permissible Exposure Levels (PELs) - Table Z1	acetonitrile (Acetonitrile)	40	70						
US ACGIH Threshold Limit Values (TLV)	acetonitrile (Acetonitrile)	20							TLV Basis: Lower respiratory tract irritation
US - Minnesota Permissible Exposure Limits (PELs)	acetonitrile (Acetonitrile)	40	70	60	105				
US - Vermont Permissible Exposure Limits Table Z-1-A Transitional Limits for Air Contaminants	acetonitrile (Acetonitrile)	40	70						
US - Vermont Permissible Exposure Limits Table Z-1-A Final Rule Limits for Air Contaminants	acetonitrile (Acetonitrile)	40	70	60	105				
US - Tennessee Occupational Exposure Limits - Limits For Air Contaminants	acetonitrile (Acetonitrile)	40	70	60	105				
US - California Permissible Exposure Limits for Chemical Contaminants	acetonitrile (Acetonitrile)	40	70	60	105				
US - Idaho - Limits for Air Contaminants	acetonitrile (Acetonitrile)	40	70						
Canada - Quebec Permissible Exposure Values for Airborne Contaminants (English)	acetonitrile (Acetonitrile)	40	67	60	101				
US - Hawaii Air Contaminant Limits	acetonitrile (Acetonitrile)	40	70	60	105				

US - Alaska Limits for Air Contaminants	acetonitrile (Acetonitrile)	40	70	60	105	
Canada - Saskatchewan Occupational Health and Safety Regulations - Contamination Limits	acetonitrile (Acetonitrile)	20		30		Skin
Canada - Yukon Permissible Concentrations for Airborne Contaminant Substances	acetonitrile (Acetonitrile)	40	70	60	105	
US - Washington Permissible exposure limits of air contaminants	acetonitrile (Acetonitrile)	40		60		
US - Michigan Exposure Limits for Air Contaminants	acetonitrile (Acetonitrile)	40	70	60	105	
Canada - Prince Edward Island Occupational Exposure Limits	acetonitrile (Acetonitrile)	20				TLV Basis: Lower respiratory tract irritation
US - Wyoming Toxic and Hazardous Substances Table Z1 Limits for Air Contaminants	acetonitrile (Acetonitrile)	40	70			
Canada - Nova Scotia Occupational Exposure Limits	acetonitrile (Acetonitrile)	20				TLV Basis: Lower respiratory tract irritation
US - Oregon Permissible Exposure Limits (Z-1)	acetonitrile (Acetonitrile)	40	70			
Canada - Northwest Territories Occupational Exposure Limits (English)	acetonitrile (Acetonitrile - Skin)	40	67	60	100	

ENDOELTABLE

The following materials had no OELs on our records

• 5(6)-carboxyfluorescein diacetate: CAS:124387-19-5

PERSONAL PROTECTION



RESPIRATOR

•Type A-P Filter of sufficient capacity. (AS/NZS 1716 & 1715, EN 143:2000 & 149:2001, ANSI Z88 or national equivalent)

EYE

· Safety glasses with side shields
· Chemical goggles.

HANDS/FEET

■ Suitability and durability of glove type is dependent on usage. Important factors in the selection of gloves include: such as:
· frequency and duration of contact,
· chemical resistance of glove material,
· glove thickness and
· dexterity

Select gloves tested to a relevant standard (e.g. Europe EN 374, US F739, AS/NZS 2161.1 or national equivalent).
· When prolonged or frequently repeated contact may occur, a glove with a protection class of 5 or higher (breakthrough time greater than 240 minutes according to EN 374, AS/NZS 2161.10.1 or national equivalent) is recommended.
· When only brief contact is expected, a glove with a protection class of 3 or higher (breakthrough time greater than 60 minutes according to EN 374, AS/NZS 2161.10.1 or national equivalent) is recommended.
· Contaminated gloves should be replaced.

Gloves must only be worn on clean hands. After using gloves, hands should be washed and dried thoroughly. Application of a non-perfumed moisturiser is recommended.
Experience indicates that the following polymers are suitable as glove materials for protection against undissolved, dry solids, where abrasive particles are not present.
· polychloroprene
· nitrile rubber
· butyl rubber
· fluorocaoutchouc
· polyvinyl chloride

Gloves should be examined for wear and/ or degradation constantly.

OTHER

· Overalls.
· P.V.C. apron.
· Barrier cream.
· Skin cleansing cream.
· Eye wash unit.

ENGINEERING CONTROLS

· Local exhaust ventilation is required where solids are handled as powders or crystals; even when particulates are relatively large, a certain proportion will be powdered by mutual friction.
· Exhaust ventilation should be designed to prevent accumulation and recirculation of particulates in the workplace.

Section 9 - PHYSICAL AND CHEMICAL PROPERTIES

PHYSICAL PROPERTIES

Solid.
Does not mix with water.

State	Divided solid	Molecular Weight	460.40
Melting Range (°F)	Not available	Viscosity	Not available
Boiling Range (°F)	Not available	Solubility in water (g/L)	Partly miscible
Flash Point (°F)	Not available	pH (1% solution)	Not applicable
Decomposition Temp (°F)	Not available	pH (as supplied)	Not applicable
Autoignition Temp (°F)	Not available	Vapour Pressure (mmHG)	Negligible
Upper Explosive Limit (%)	Not available.	Specific Gravity (water=1)	Not available
Lower Explosive Limit (%)	Not available	Relative Vapor Density (air=1)	>1
Volatile Component (%vol)	Negligible	Evaporation Rate	Not applicable

APPEARANCE

Solid; does not mix well with water. Soluble in DMSO

log Kow -0.34

Material	Value

Section 10 - CHEMICAL STABILITY

CONDITIONS CONTRIBUTING TO INSTABILITY

· Presence of incompatible materials.

· Product is considered stable.

STORAGE INCOMPATIBILITY

· Avoid strong acids, bases.
Avoid reaction with oxidizing agents.

For incompatible materials - refer to Section 7 - Handling and Storage.

Section 11 - TOXICOLOGICAL INFORMATION

5(6)-carboxyfluorescein diacetate

TOXICITY AND IRRITATION

■ unless otherwise specified data extracted from RTECS - Register of Toxic Effects of Chemical Substances.
5(6)-CARBOXYFLUORESCEIN DIACETATE:
■ For fluorescein:
Topical, oral, and intravenous use of fluorescein can cause adverse reactions including nausea, vomiting, hives, acute hypotension, anaphylaxis and related anaphylactoid reaction cardiac arrest, and sudden death.
The most common adverse reaction to fluorescein is nausea, due to a difference in the pH from the body and the pH of the sodium fluorescein dye, however a number of other factors are considered contributors as well.The nausea usually is transient and subsides quickly. Hives can range from a minor annoyance to severe, and a single dose of antihistamine may give complete relief. Anaphylactic shock and subsequent cardiac arrest and sudden death are very rare but because they occur within minutes, a health care provider who uses fluorescein should be prepared to perform emergency resuscitation.
Intravenous use has the most reported adverse reactions, including sudden death, but this may reflect greater use rather than greater risk. Both oral and topical uses have been reported to cause anaphylaxis including one case of anaphylaxis with cardiac arrest following topical use in an eye drop. Reported rates of adverse reactions vary from 1% to 6% The higher rates may reflect study populations that include a higher percentage of persons with prior adverse reactions. The risk of an adverse reaction is 25 times higher if the person has had a prior adverse reaction. The risk can be reduced with prior (prophylactic) use of antihistamines and prompt emergency management of any ensuing anaphylaxis A simple prick test may help to identify persons at greatest risk of adverse reaction
Eosins, fluorescein derivatives may produce skin reactions. Dermatitis due to lipstick containing eosin has been observed. Impurities may be responsible. Eosin is bound to keratin so that patch-testing, with cosmetic preparations suspected of being allergens, may not be conclusive as its ability to provoke the immune system is restricted. Other reports suggest that eosin may cause photosensitivity.
No significant acute toxicological data identified in literature search.
ACETONITRILE:

TOXICITY	IRRITATION
Oral (human) TDLo: 570 mg/kg	Skin (rabbit):500 mg (open)-Mild
Oral (rat) LD50: 2730 mg/kg	Eye (rabbit):20 mg (open)-SEVERE
Inhalation (human) TCLo: 160 ppm/4h	
Inhalation (rat) LC50: 7551 mg/kg	
Inhalation (rabbit) LC50: 2828 ppm/4h	
Dermal (rabbit) LD50: 1250 mg	
Oral (Human) TDLo: 500 mg/kg	
Oral (Human) TDLo: 800 mg/kg	
Oral (Human) TDLo: 64 mg/kg	
Oral (Rat) LD50: 2460 mg/kg	
Intraperitoneal (Rat) LD50: 850 mg/kg	
Subcutaneous (Rat) LD50: 3500 mg/kg	
Intravenous (Rat) LD50: 1680 mg/kg	
Oral (Mouse) LD50: 269 mg/kg	
Intraperitoneal (Mouse) LD50: 175 mg/kg	
Subcutaneous (Mouse) LD50: 4480 mg/kg	
Intravenous (Mouse) LD50: 612 mg/kg	
Inhalation (Dog) LC: 16000 ppm/4h	
Oral (Cat) LD50: 200 mg/kg	
Oral (Rabbit) LD50: 50 mg/kg	
Subcutaneous (Rabbit) LD: 105 mg/kg	
Oral (Guinea pig) LD50: 177 mg/kg	
Inhalation (Guinea pig) LC50: 5655 ppm/4h	

■ The material may produce severe irritation to the eye causing pronounced inflammation. Repeated or prolonged exposure to irritants

may produce conjunctivitis.
The material may cause skin irritation after prolonged or repeated exposure and may produce on contact skin redness, swelling, the production of vesicles, scaling and thickening of the skin.

for acetonitrile:

Pharmacokinetics

Absorption - Absorption of acetonitrile occurs after oral, dermal, or inhalation exposure. Although no quantitative absorption data were found for oral exposure, signs of acute toxicity, observed after oral exposure, indicate that absorption occurs In humans, 74% of acetonitrile was absorbed from cigarette smoke held in the mouth for 2 seconds; when inhaled into the lungs, absorption increased to 91% Dogs exposed by inhalation to 16,000 ppm for 4 hours appeared to reach steady-state blood concentrations within 3-4 hours.

Distribution - Acetonitrile and its metabolites are transported throughout the body in the blood . After oral or inhalation exposures to experimental animals, parent compound or metabolites were found in the brain, heart, liver, kidney, spleen, blood, stomach, and muscle After a fatal human inhalation exposure, metabolites were also found in those organs as well as skin, lungs, intestine, testes, and urine .

Metabolism - Acetonitrile is metabolised to hydrogen cyanide and thiocyanate which are responsible for the toxic effects of the chemical Metabolism is mediated by the cytochrome P-450 system

Excretion - Acetonitrile is excreted as the parent chemical in expired air and as parent or metabolite in urine Urinary excretion of thiocyanate following oral exposure in rats ranged from 11.8% (U.S. EPA 1985) to 37% of administered dose. Concentrations of acetonitrile of 2.2-20 microgram/100 mL of urine have been found for heavy smokers

Acute Toxicity

Acetonitrile liquid or vapor is irritating to the skin, eyes, and respiratory tract. At high enough doses, death can occur quickly from respiratory failure. Lower doses cause typical symptoms of cyanide poisoning such as salivation, nausea, vomiting, anxiety, confusion, hyperpnea, dyspnea, rapid pulse, unconsciousness, and convulsions.

Humans - Liquid or vapor acetonitrile is irritating to eyes, skin, nose, and throat . Concentrations of acetonitrile vapor up to 500 ppm cause irritation of mucous membranes . Volunteers were exposed to 40, 80, or 160 ppm for 4 hours; several hours after exposure one person had tightness of the chest after exposure to 40 ppm and another experienced flushing of the face and bronchial tightness after exposure to 160 ppm The concentration of 160 ppm is roughly equivalent to a total of 19.5 mg/kg over the 4 hour period . One photographic laboratory worker died after "massive" exposure to acetonitrile vapor; gastric distress and nausea began about 4 hours after exposure followed by hypersalivation, conjunctivitis, low urine output, low blood pressure, albumin in urine and cerebrospinal fluid, coma, and death due to cardiac and respiratory failure . Similar signs and symptoms, including death, occurred in a worker painting the interior of a tank with a resin containing 30-40% acetonitrile

Animals - Oral LD50 values for acetonitrile in the rat range from 2.46 to 6.5 g/kg. The 4-hour inhalation LC50 varies with species from 2828 ppm in the rabbit to 16,000 ppm in the rat; dermal LD50 values of 3.9 and 1.25 g/kg have been reported for the rabbit Deaths occurred in dogs exposed by inhalation to 16,000 or 32,000 ppm; necropsy indicated pulmonary hemorrhage and vascular congestion

Subchronic/Chronic Toxicity

Limited information was found on the adverse effects of long term human exposure to acetonitrile. Animals exposed chronically by inhalation have liver vacuolisation, cerebral hemorrhage, lung lesions including focal emphysema and proliferation of alveolar septa, and decreases in hematological parameters. EPA has derived an oral reference dose (RfD) of 0.006 mg/kg/day for acetonitrile, based on adverse blood effects observed in animal inhalation studies. Confidence in this RfD is low

Humans - No information was found on the adverse effects of long term human exposure to acetonitrile. Chronic exposure to acetonitrile may cause headache, anorexia, dizziness, weakness, and macular, papular, or vesicular dermatitis.

Animals - Female mice exposed to 100, 200, or 400 ppm, 6 hours/day, 5 days/week for 90 days had thymic atrophy at the middle and high doses and hepatic vacuolisation at the high dose; dose-related decreases were observed in hematocrit, blood hemoglobin concentration, and erythrocyte and leucocyte counts A no-observed-adverse effect level (NOAEL) for this study was 100 ppm (equivalent to 19.3 mg/kg/day). Based on these inhalation data the U.S. EPA calculated an oral reference dose for acetonitrile of 0.006 mg/kg/day. Similar hepatic and blood profile changes were observed in mice exposed to 200 or 400 ppm 6.5 hours/day, 5 days/week for 13 weeks Rats exposed by inhalation to 166, 330, or 655 ppm acetonitrile 7 hours/day, 5 days/week for 90 days had a dose-responsive increase in the severity of lung lesions. Animals in the low and middle dose groups had "histiocytic clumps in alveoli, atelectasis, bronchitis or pneumonia"; high dose animals had alveolar congestion and focal edema, bronchial inflammation, desquamation, and excess mucus as well as swelling of the liver and kidneys and cerebral hemorrhage. Dogs and monkeys exposed to 350 ppm, 7 hours/day, 5 days/week for 91 days had pulmonary lesions including focal emphysema, atelectasis and proliferation of alveolar septa; transient depression in haematocrit and hemoglobin values also occurred in dogs, and brain hemorrhages were observed in monkeys . Male and female mice (groups of 10/sex) were exposed to 25, 50, 100, 200, or 400 ppm, 6 hours/day for 65 days. Decreased BUN, red blood cell counts, and hematocrit occurred in females exposed to the two highest doses, and increased liver weights were observed in males at 400 ppm and females at 100 and 200 ppm

Genotoxicity

Acetonitrile was negative for mutations in Chinese hamster ovary cells and Salmonella strains TA98, TA100, TA1535, and TA1537 when assayed with or without metabolic activation . Developmental/Reproductive Toxicity Acetonitrile causes a dose-related increase in early resorptions and fetal death in hamsters, rats, and rabbits. Neural tube defects also occur in hamsters after a single oral or inhalation exposure during early gestation.

Humans - No information was found in the secondary sources searched regarding the developmental or reproductive toxicity of acetonitrile to humans.

Animals - Hamsters (6 to 12/group) were administered a single oral dose of acetonitrile of 100, 200, 300, or 400 mg/kg on day 8 of gestation. At the 2 highest doses, increases in exencephaly, encephalocele, and rib malformations were observed; decreased fetal body weight occurred at all doses and an increase in resorptions occurred at 200 and 400 mg/kg . The same malformations occurred when hamsters were exposed by inhalation to 5000 or 8000 ppm for 1 hour on day 8 of gestation An increase in early resorptions also occurred in rats receiving 375 mg/kg/day by gavage on gestation days 6-19; no adverse effects were observed at 200 mg/kg/day . Rabbits given 2, 15, or 30 mg/kg/day acetonitrile by gavage on gestation days 6-18 had an increase in fetal death at the highest dose . No effects in sperm motility and morphology or in vaginal cytology was observed in rats or mice exposed to 400 ppm, 6 hours/day, 5 days/week for 13 weeks .

Neurotoxicity

Exposure to high concentrations of acetonitrile causes death by respiratory failure and has been shown to cause brain lesions in

animals.
Humans - The nervous system is a major target for acetonitrile acute toxicity. Acute exposure may cause salivation, nausea, vomiting, anxiety, confusion, hyperpnea, dyspnea, rapid pulse, unconsciousness, and convulsions followed by death from respiratory failure. Chronic exposure may cause headache, anorexia, dizziness, and weakness
Animals - Acetonitrile inhalation caused cerebral hemorrhages in rats exposed to 655 ppm 7 hours/day, 5 days/week, for 90 days and monkeys exposed to 350 ppm 7 hours/day, 5 days/week, for 91 days.

CARCINOGEN

PBIT_(PERS~	US - Maine Chemicals of High Concern List	Carcinogen	
Acetonitrile	US EPA Carcinogens Listing	Carcinogenicity	D
Acetonitrile	US EPA Carcinogens Listing	Carcinogenicity	CBD
Acetonitrile	US ACGIH Threshold Limit Values (TLV) - Carcinogens	Carcinogen Category	D
Acetonitrile	US ACGIH Threshold Limit Values (TLV) - Carcinogens	Carcinogen Category	CBD
Acetonitrile	US ACGIH Threshold Limit Values (TLV) - Carcinogens	Carcinogen Category	A4
acetonitrile	US - Rhode Island Hazardous Substance List	IARC	
acetonitrile	US - Maine Chemicals of High Concern List	Carcinogen	D
acetonitrile	US - Maine Chemicals of High Concern List	Carcinogen	CBD
TWAPPM~	US - Maine Chemicals of High Concern List	Carcinogen	A4

SKIN

acetonitrile	US - Washington Permissible exposure limits of air contaminants - Skin	Skin	X
acetonitrile	US ACGIH Threshold Limit Values (TLV) - Skin	Skin Designation	Yes
acetonitrile	US AIHA Workplace Environmental Exposure Levels (WEELs) - Skin	Notes	TLV Basis: Lower respiratory tract irritation
acetonitrile	US - California OEHHA/ARB - Acute Reference Exposure Levels and Target Organs (RELs) - Skin	Skin	X
acetonitrile	US - California OEHHA/ARB - Chronic Reference Exposure Levels and Target Organs (CRELs) - Skin	Skin	X
acetonitrile	Canada - British Columbia Occupational Exposure Limits - Skin	Notation	Skin
acetonitrile	US - Hawaii Air Contaminant Limits - Skin Designation	Skin Designation	X
acetonitrile	US OSHA Permissible Exposure Levels (PELs) - Skin	Skin Designation	X
acetonitrile	US - Oregon Permissible Exposure Limits (Z2) - Skin	Skin	X
acetonitrile	US - California Permissible Exposure Limits for Chemical Contaminants - Skin	Skin	X
acetonitrile	US - California Permissible Exposure Limits for Chemical Contaminants - Skin	Skin	S

Section 12 - ECOLOGICAL INFORMATION

No data

Ecotoxicity

Ingredient	Persistence: Water/Soil	Persistence: Air	Bioaccumulation	Mobility
5(6)-carboxyfluorescein diacetate	No Data Available	No Data Available		
acetonitrile	LOW	HIGH	LOW	HIGH

Section 13 - DISPOSAL CONSIDERATIONS

US EPA Waste Number & Descriptions

B. Component Waste Numbers
When acetonitrile is present as a solid waste as a discarded commercial chemical product, off-specification species, as a container residue, or a spill residue, use EPA waste number U003 (waste code T,I).

Disposal Instructions

All waste must be handled in accordance with local, state and federal regulations.
¦ Legislation addressing waste disposal requirements may differ by country, state and/ or territory. Each user must refer to laws operating in their area. In some areas, certain wastes must be tracked.
A Hierarchy of Controls seems to be common - the user should investigate:
· Reduction
· Reuse
· Recycling
· Disposal (if all else fails)
This material may be recycled if unused, or if it has not been contaminated so as to make it unsuitable for its intended use. Shelf life considerations should also be applied in making decisions of this type. Note that properties of a material may change in use, and recycling or reuse may not always be appropriate.
DO NOT allow wash water from cleaning equipment to enter drains. Collect all wash water for treatment before disposal.
· Recycle wherever possible.
· Consult manufacturer for recycling options or consult Waste Management Authority for disposal if no suitable treatment or disposal facility can be identified.

Section 14 - TRANSPORTATION INFORMATION

NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS: DOT, IATA, IMDG

Section 15 - REGULATORY INFORMATION

5(6)-carboxyfluorescein diacetate (CAS: 124387-19-5) is found on the following regulatory lists;
"US - Maine Chemicals of High Concern List","US - Washington Class A toxic air pollutants: Known and Probable Carcinogens"

Regulations for ingredients

acetonitrile (CAS: 75-05-8) is found on the following regulatory lists;
"Canada - Alberta Occupational Exposure Limits","Canada - British Columbia Occupational Exposure Limits","Canada - Northwest Territories Occupational Exposure Limits (English)","Canada - Nova Scotia Occupational Exposure Limits","Canada - Prince Edward Island Occupational Exposure Limits","Canada - Prince Edward Island Occupational Exposure Limits - Carcinogens","Canada - Quebec Permissible Exposure Values for Airborne Contaminants (English)","Canada - Saskatchewan Industrial Hazardous Substances","Canada - Saskatchewan Occupational Health and Safety Regulations - Contamination Limits","Canada - Yukon Permissible Concentrations for Airborne Contaminant Substances","Canada Domestic Substances List (DSL)","Canada Ingredient Disclosure List (SOR/88-64)","Canada National Pollutant Release Inventory (NPRI)","Canada Toxicological Index Service - Workplace Hazardous Materials Information System - WHMIS (English)","GESAMP/EHS Composite List - GESAMP Hazard Profiles","IMO IBC Code Chapter 17: Summary of minimum requirements","IMO MARPOL 73/78 (Annex II) - List of Other Liquid Substances","US - Alaska Limits for Air Contaminants","US - California Air Toxics ""Hot Spots"" List (Assembly Bill 2588) Substances for which emissions must be quantified","US - California Occupational Safety and Health Regulations (CAL/OSHA) - Hazardous Substances List","US - California Permissible Exposure Limits for Chemical Contaminants","US - California Toxic Air Contaminant List Category IV","US - Connecticut Hazardous Air Pollutants","US - Hawaii Air Contaminant Limits","US - Idaho - Limits for Air Contaminants","US - Massachusetts Oil & Hazardous Material List","US - Michigan Exposure Limits for Air Contaminants","US - Minnesota Hazardous Substance List","US - Minnesota Permissible Exposure Limits (PELs)","US - New Jersey Right to Know Hazardous Substances","US - Oregon Permissible Exposure Limits (Z-1)","US - Pennsylvania - Hazardous Substance List","US - Rhode Island Hazardous Substance List","US - Tennessee Occupational Exposure Limits - Limits For Air Contaminants","US - Vermont Hazardous Constituents","US - Vermont Hazardous wastes which are Discarded Commercial Chemical Products or Off-Specification Batches of Commercial Chemical Products or Spill Residues of Either","US - Vermont Permissible Exposure Limits Table Z-1-A Final Rule Limits for Air Contaminants","US - Vermont Permissible Exposure Limits Table Z-1-A Transitional Limits for Air Contaminants","US - Washington Dangerous waste constituents list","US - Washington Discarded Chemical Products List - ""U"" Chemical Products","US - Washington Permissible exposure limits of air contaminants","US - Wyoming Toxic and Hazardous Substances Table Z1 Limits for Air Contaminants","US ACGIH Threshold Limit Values (TLV)","US ACGIH Threshold Limit Values (TLV) - Carcinogens","US CAA (Clean Air Act) - HON Rule - Organic HAPs (Hazardous Air Pollutants)","US Clean Air Act - Hazardous Air Pollutants","US Department of Transportation (DOT) List of

Hazardous Substances and Reportable Quantities - Hazardous Substances Other Than Radionuclides","US DOE Temporary Emergency Exposure Limits (TEELs)","US EPA Acute Exposure Guideline Levels (AEGLs) - Interim","US EPA Carcinogens Listing","US EPA High Production Volume Program Chemical List","US EPA Master Testing List - Index I Chemicals Listed","US EPCRA Section 313 Chemical List","US List of Lists - Consolidated List of Chemicals Subject to EPCRA, CERCLA and Section 112(r) of the Clean Air Act","US NIOSH Recommended Exposure Limits (RELs)","US OSHA Permissible Exposure Levels (PELs) - Table Z1","US RCRA (Resource Conservation & Recovery Act) - Appendix IX to Part 264 Ground-Water Monitoring List 1","US RCRA (Resource Conservation & Recovery Act) - Hazardous Constituents - Appendix VIII to 40 CFR 261","US RCRA (Resource Conservation & Recovery Act) - List of Hazardous Inorganic and Organic Constituents 1","US RCRA (Resource Conservation & Recovery Act) - List of Hazardous Wastes","US RCRA (Resource Conservation & Recovery Act) - Phase 4 LDR Rule - Universal Treatment Standards","US Toxic Substances Control Act (TSCA) - Chemical Substance Inventory","US TSCA Section 12(b) - List of Chemical Substances Subject to Export Notification Requirements","US TSCA Section 4/12 (b) - Sunset Date/Status","US TSCA Section 8 (a) - Preliminary Assessment Information Rules (PAIR) - Reporting List","US TSCA Section 8 (d) - Health and Safety Data Reporting"

Section 16 - OTHER INFORMATION

LIMITED EVIDENCE

■ Cumulative effects may result following exposure*.
* (limited evidence).

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■ Classification of the preparation and its individual components has drawn on official and authoritative sources as well as independent review by the Chemwatch Classification committee using available literature references.
A list of reference resources used to assist the committee may be found at:
www.chemwatch.net/references.

■ The (M)SDS is a Hazard Communication tool and should be used to assist in the Risk Assessment. Many factors determine whether the reported Hazards are Risks in the workplace or other settings. Risks may be determined by reference to Exposures Scenarios. Scale of use, frequency of use and current or available engineering controls must be considered.

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