Material Safety Data Sheet

0.2% w/v Diphenylcarbazide in Ethanol

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1. Product Identification

Synonyms:	CA-6 Analyzer Chromium Reagent #1
CAS No.:	Not applicable to mixtures.
Molecular Weight:	Not applicable to mixtures.
Chemical Formula:	Not applicable to mixtures.
Product Codes:	ECD P/N 2010061-1
Manufacture By:	Electro-Chemical Devices, Inc.
	1681 Kettering
	Irvine, CA 92614
	Phone: (800) 729-1333

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2. Hazards Identification

Emergency Overview

OSHA Hazards

Flammable liquid, Target Organ Effect, Highly toxic by inhalation, Toxic by ingestion, Toxic by skin absorption, Irritant, Carcinogen

Target Organs

Nerves, Liver, Heart, Eyes, Kidney, Central nervous system, Lungs, ears, Blood

GHS Classification

Flammable liquids (Category 2)

Acute toxicity, Oral (Category 4)

Skin irritation (Category 2)

Eye irritation (Category 2A)

Specific target organ toxicity - single exposure (Category 1)

Specific target organ toxicity - single exposure (Category 3)

Acute aquatic toxicity (Category 2)

Chronic aquatic toxicity (Category 3)

GHS Label elements, including precautionary statements

Pictogram

Signal word: Danger

HMIS Rating:

Hazard statement(s)

H225 Highly flammable liquid and vapor

H302 Harmful if swallowed

H315 Causes skin irritation

H319 Causes serious eye irritation

H335 May cause respiratory irritation

H370 Causes damage to organs

H401 Toxic to aquatic life

H412 Harmful to aquatic life with long lasting effects

Precautionary statement(s)

P210 Keep away from heat/sparks/open flames/hot surfaces. - No smoking.

P260 Do not breathe dust/ fume/ gas/ mist/ vapors/ spray

P273 Avoid release to the environment

P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing

P307 + P311 If exposed: Call a POISON CENTER or doctor/ physician

HMIS Classification

Potential Health Effects

Inhalation May be fatal if inhaled. Causes respiratory tract irritation

Skin Toxic if absorbed through skin. Causes skin irritation.

Eyes Causes eye irritation.

Ingestion Toxic if swallowed.

3. Composition/Information on Ingredients

Formula: 0.2% Diphenylcarbazide in denatured ethanol

Molecular Weight: NA

Component	CAS No.	Classification	Concentration
1,5-Diphenylcarbazide	140-22-7		0.2%
Methanol	67-56-1	Flam. Liq. 2; Acute Tox. 3; STOT SE 1; H225, H301 + H311 + H331, H370	5%
Ethanol	64-17-5	Flam. Liq. 2; H225, H225	90%
Isopropyl Alcohol	67-63-0	Flam. Liq. 2; Acute Tox. 3; STOT SE 1; H225, H301 + H311 + H331, H370	5%

4. First Aid Measures

General advice Consult a physician. Show this safety data sheet to the doctor in attendance.

If inhaled If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

In case of skin contact Wash off with soap and plenty of water. Consult a physician.

In case of eye contact Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician. Continue rinsing eyes during transport to hospital.

If swallowed Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

5. Fire Fighting Measures

Conditions of flammability

Flammable in the presence of a source of ignition when the temperature is above the flash point. Keep away from heat/sparks/open flame/hot surface. No smoking.

Suitable extinguishing media

Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

Special protective equipment for firefighters

Wear self-contained breathing apparatus for firefighting if necessary.

Hazardous combustion products

Hazardous decomposition products formed under fire conditions. - Carbon oxides

Further information

Use water spray to cool unopened containers.

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6. Accidental Release Measures

Personal precautions

Use personal protective equipment. Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Remove all sources of ignition. Evacuate personnel to safe areas. Beware of vapors accumulating to form explosive concentrations. Vapors can accumulate in low areas.

Environmental precautions

Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

Methods and materials for containment and cleaning up

Contain spillage, and then collect with an electrically protected vacuum cleaner or by wet-brushing and place in container for disposal according to local regulations (see section 13).

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7. Handling and Storage

Precautions for safe handling

Avoid contact with skin and eyes. Avoid inhalation of vapour or mist.

Use explosion-proof equipment. Keep away from sources of ignition - No smoking. Take measures to prevent the buildup of electrostatic charge.

Conditions for safe storage

Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage.

Hygroscopic

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8. Exposure Controls/Personal Protection

Components with workplace control parameters

Components	CAS No.	Value	Control Parameters	Basis
Ethanol	64-17-5	TWA	1000 ppm	USA. ACGIH Threshold Limit Values (TLV)
Remarks	Upper Respiratory Tract irritation Confirmed animal carcinogen with unknown relevance to humans			
		TWA	1000 ppm 1,900 mg/m3	USA. OSHA - TABLE Z-1 Limits for Air Contaminants -1910.1000
		TWA	1000 ppm 1,900 mg/m3	USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants
		TWA	1000 ppm 1,900 mg/m3	USA. NIOSH Recommended Exposure Limits
Methanol	67-56-1	TWA	200 ppm	USA. ACGIH Threshold Limit Values (TLV)
Remarks	Headache Eye damage Substances for which there is a Biological Exposure Index orIndices (see BEI® section) Danger of cutaneous absorption			
		STEL	250 ppm	USA. ACGIH Threshold Limit Values (TLV)
	Headache Eye damage Substances for which there is a Biological Exposure Index or Indices (see BEI® section) Danger of cutaneous absorption			
		TWA	200 ppm 260 mg/m3	USA. OSHA - TABLE Z-1 Limits for Air Contaminants - 1910.1000
Skin notation				
		STEL	250 ppm 325 mg/m3	USA. OSHA - TABLE Z-1 Limits for Air Contaminants - 1910.1000
Skin notation				
		TWA	250 ppm 325 mg/m3	USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants
The value in mg/m3 is approximate.				
		TWA	250 ppm 325 mg/m3	USA. NIOSH Recommended Exposure Limits
Potential for dermal absorption				
		STEL	250 ppm 325 mg/m3	USA. NIOSH Recommended Exposure Limits
Potential for dermal absorption				
2-Propanol	67-63-0	TWA	200 ppm	USA. ACGIH Threshold Limit Values (TLV)
Remarks	Eye & Upper Respiratory Tract irritation Central Nervous System impairment Not classifiable as a human carcinogen			
		STEL	400 ppm	USA. ACGIH Threshold Limit Values (TLV)
	Eye & Upper Respiratory Tract irritation Central Nervous System impairment Not classifiable as a human carcinogen			

		TWA	400 ppm 980 mg/m3	USA. OSHA - TABLE Z-1 Limits for Air Contaminants - 1910.1000
		STEL	500 ppm 1,225 mg/m3	USA. OSHA - TABLE Z-1 Limits for Air Contaminants - 1910.1000
		TWA	400 ppm 980 mg/m3	USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants
The value in mg/m3 is approximate.				
		TWA	400 ppm 980 mg/m3	USA. NIOSH Recommended Exposure Limits
		STEL	500 ppm 1,225 mg/m3	USA. NIOSH Recommended Exposure Limits

Personal protective equipment

Respiratory protection

Where risk assessment shows air-purifying respirators are appropriate use a full-face respirator with multi-purpose combination (US) or type ABEK (EN 14387) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Hand protection

Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique

(Without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

Eye protection

Safety glasses with side-shields conforming to EN166 Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin and body protection

Complete suit protecting against chemicals, Flame retardant antistatic protective clothing. The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Hygiene measures

Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

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9. Physical and Chemical Properties

Appearance: Clear, colorless to pale yellow liquid.

Odor:	Alcohol like odor
Solubility:	Complete (100%)
Specific Gravity:	0.789 g/mL
pH:	No information found.
% Volatiles by volume @ 21C (70F):	ca. 99
Melting Point:	Melting point/range: -130 °C (-202 °F)
Boiling Point:	78 °C (172 °F) at 1,013 hPa (760 mmHg)
Flash point	9 °C (48 °F) - closed cup
Lower explosion limit	3.3 % (V)
Upper explosion limit	24.5 % (V)
Vapor Density (Air=1):	Not applicable.
Vapor Pressure (mm Hg):	59.5 hPa (44.6 mmHg) at 20 °C (68 °F)
Evaporation Rate (BuAc=1):	No information found.

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10. Stability and Reactivity

Stability:	Stable under ordinary conditions of use and storage.
Possibility of hazardous reactions:	Vapors may form explosive mixture with air.
Hazardous Decomposition Products:	Oxides of Carbon
Hazardous Polymerization:	Will not occur.
Conditions to Avoid:	Avoid moisture. Heat, flames and sparks. Extremes of temperature and direct sunlight.

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11. Toxicological Information

Acute toxicity

Oral LD50

No data available

Inhalation LC50

Dermal LD50

No data available

Other information on acute toxicity

No data available

Skin corrosion/irritation

No data available

Serious eye damage/eye irritation

Eyes: no data available

Respiratory or skin sensitization

No data available

Germ cell mutagenicity

No data available

Carcinogenicity:

IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

Teratogenicity

No data available

Specific target organ toxicity - single exposure (Globally Harmonized System)

No data available

Specific target organ toxicity - repeated exposure (Globally Harmonized System)

No data available

Aspiration hazard

No data available

Potential health effects

Inhalation	May be fatal if inhaled. Causes respiratory tract irritation.
Ingestion	Toxic if swallowed.
Skin	Toxic if absorbed through skin. Causes skin irritation.
Eyes	Causes eye irritation.

Signs and Symptoms of Exposure

Contact with eyes can cause: Redness, Blurred vision, Provokes tears, Prolonged or repeated contact with skin may cause: defatting, Dermatitis, Vomiting, Weakness, Confusion, Drowsiness, Unconsciousness, and Convulsions

Synergistic effects

No data available

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12. Ecological Information

Environmental Fate: No information found.

Environmental Toxicity: Toxic to aquatic life.

An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.

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13. Disposal Considerations

Burn in a chemical incinerator equipped with an afterburner and scrubber but exert extra care in igniting as this material is highly flammable. Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material. 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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14. Transport Information

DOT (US) UN number: 1170 Class: 3 packing group: II

Proper shipping name: Ethanol

Marine pollutant: No

Poison Inhalation Hazard: No

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15. Regulatory Information

OSHA Hazards

Flammable liquid, Target Organ Effect, Highly toxic by inhalation, Toxic by ingestion, Toxic by skin absorption, Irritant, Carcinogen

SARA 302 Components

SARA 302: No chemicals in this material are subject to the reporting requirements of SARA Title III,

Section 302.

SARA 313 Components

The following components are subject to reporting levels established by SARA Title III, Section 313:

	CAS-No.	Revision Date
Methanol	67-56-1	2007-07-01

SARA 311/312 Hazards

Fire Hazard, Acute Health Hazard, Chronic Health Hazard

Massachusetts Right To Know Components

	CAS-No.	Revision Date
Methanol	67-56-1	2007-07-01
Ethanol	64-17-5	2007-03-01
2-Propanol	67-63-0	1987-01-01

Pennsylvania Right To Know Components

	CAS-No.	Revision Date
Methanol	67-56-1	2007-07-01
Ethanol	64-17-5	2007-03-01
2-Propanol	67-63-0	1987-01-01

New Jersey Right To Know Components

	CAS-No.	Revision Date
Methanol	67-56-1	2007-07-01
Ethanol	64-17-5	2007-03-01
2-Propanol	67-63-0	1987-01-01

California Prop 65 Components

This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

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16. Other Information

Text of H-code(s) and R-phrase(s) mentioned in Section 3

Acute Tox.	Acute toxicity
Aquatic Acute	Acute aquatic toxicity
Aquatic Chronic	Chronic aquatic toxicity
Asp. Tox.	Aspiration hazard
EUH066	Repeated exposure may cause skin dryness or cracking.
Eye Irrit.	Eye irritation

Flam. Liq.	Flammable liquids
H225	Highly flammable liquid and vapor
H301 + H311 +H331	Toxic if swallowed, in contact with skin or if inhaled
H304	May be fatal if swallowed and enters airways.
H315	Causes skin irritation.
H319	Causes serious eye irritation.
H332	Harmful if inhaled.
H335	May cause respiratory irritation.
H336	May cause drowsiness or dizziness.
H370	Causes damage to organs.
H410	Very toxic to aquatic life with long lasting effects
Skin Irrit.	Skin irritation
STOT SE	Specific target organ toxicity - single exposure

Product Use:

Laboratory Reagent

Revision Information:

MSDS-2010061-1 rev. B January 2015

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