

QC 40020  
QC 40034  
QC 40048



“The Cure for the Common Lab”



**CANCER**  
DIAGNOSTICS, INC.

**Safety Data Sheet**  
**CDI's Tissue Marking Dye-Black**

**SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND THE COMPANY**

**1.1 Product Identifier**  
Trade Name: CDI's Tissue Marking Dye-Black  
Product #: 0723-1, 0725-1, 0726-1, 0727-1, 0728-1, MD1001, Black Component/Dye in Following Kits: MD2000, MD3000, MK0030, MK0120, 01000, 02000, 03000, 05000, 04000, 06000

**SDS #**: 0727-1  
**SDS Date**: March 20, 2014

**1.2 Relevant Identified Uses of the Substance or Mixture and Uses Advised Against**  
**Product Use:** For In Vitro Diagnostic Use.  
**Uses Advised Against:** All other uses.

**1.3 Details of the Supplier of the Substance or Mixture**  
**Manufacturer/Preparer:** Cancer Diagnostics Inc.  
4300 Emperor Blvd.  
Durham, NC 27703

**1.4 Emergency Telephone Number**  
**Emergency Spill Information**: 1-800- 424-9300 (CHEMTREC)  
+1 703-527-3887 International calls (call collect)  
**Other Product Information:** 1-877-846-5393

**SECTION 2: HAZARDS IDENTIFICATION**

**2.1 Classification of the Substance or Mixture**

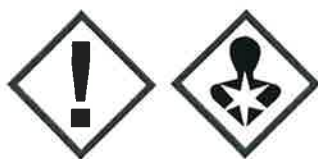
**CLP/GHS Classification (1272/2008):**

Physical:	Health:	Environmental
Not Hazardous	Carcinogen Category 2 Eye Irritation Category 2A (H319)	Not Hazardous

**EU Classification (67/548/EEC):** Not classified as dangerous

**2.2 Label Elements:**

WARNING! Contains Carbon Black, Isopropanol, and Ammonia.



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#### Hazard Phrases

H319	Causes serious eye irritation
H351	Suspected of causing cancer

#### Precautionary Phrases

P201	Obtain special instructions before use.
P202	Do not handle until all safety precautions have been read and understood.
P264	Wash thoroughly after handling.
P280	Wear protective gloves, protective clothing and eye protection.
P305+P351+P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P337+P313	If eye irritation persists: Get medical advice/attention.
P308 + P313	IF exposed or concerned: Get medical advice/ attention.
P405	Store locked up.
P501	Dispose of container/contents to approved disposal site in accordance with all local and national regulations.

2.3 Other Hazards: None

### SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

#### 3.2 Mixture

Chemical Name	CAS Number / EINECS Number / REACH Reg. Number	% (w/w)	EU Classification (67/548/EEC)	CLP/GHS Classification (1272/2008)
Carbon Black (Black dye only)	1333-86-4 215-609-9	<25	Not Classified as Dangerous	Carcinogen Category 2 (H351)
Isopropanol	67-63-0 200-661-7	<4	F, Xi R11, R36, R67	Flammable Liquid Category 2 (H225) Eye Irritation Category 2A (H319) Specific Target Organ Toxicity – Single Exposure Category 3 (H336)
Ammonia	7664-41-7 231-635-3	<1	T, C, N, R10, R23, R34, R50	Flammable Gas Category 2 (H221) Acute Toxicity Category 3 (H331) Skin Corrosive Category 1B (H314) Aquatic Acute Toxicity Category 1 (H400)

See Section 16 for full text of GHS and EU Classifications.

### SECTION 4: FIRST AID MEASURES

#### 4.1 Description of First Aid Measures

##### First Aid

**Eye contact:** Flush eyes with water, holding the eyelids apart. Get medical attention if irritation persists.

**Skin contact:** Wash exposed skin with soap and water. Remove contaminated clothing and launder before re-use. Get medical attention if irritation develops.

**Inhalation:** Remove to fresh air. Get medical attention if symptoms persists.

**Ingestion:** If small quantities are swallowed, rinse out mouth with water. Do not induce vomiting. Never give anything by mouth to an unconscious or drowsy person. If large amounts are swallowed or if irritation or discomfort occurs, get medical attention.

See Section 11 for more detailed information on health effects.

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**4.2 Most important symptoms and effects, both acute and delayed:** May cause eye irritation. May cause mild skin and respiratory irritation. Suspected of causing cancer.

**4.3 Indication of any immediate medical attention and special treatment needed:** No immediate treatment is normally required.

## **SECTION 5: FIREFIGHTING MEASURES**

### **5.1 Extinguishing Media:**

Use dry chemical, alcohol-type foam, or carbon dioxide (CO2).

### **5.2 Special Hazards Arising from the Substance or Mixture**

**Unusual Fire and Explosion Hazards:** Not classified as combustible, but may burn under fire conditions.

**Combustion Products:** Oxides of carbon, oxides of nitrogen, and unknown materials.

**5.3 Advice for Fire-Fighters:** Self-contained breathing apparatus and protective clothing should be worn in fighting large fires involving chemicals. Determine the need to evacuate or isolate the area according to your local emergency plan. Use water spray to keep fire exposed containers cool.

## **SECTION 6: ACCIDENTAL RELEASE MEASURES**

### **6.1 Personal Precautions, Protective Equipment and Emergency Procedures:**

Wear appropriate protective equipment.

### **6.2 Environmental Precautions:**

Prevent entry in storm sewers and waterways. Report spill as required by local and federal regulations.

### **6.3 Methods and Material for Containment and Cleaning Up:**

Absorb with an inert material. Collect into a suitable container for disposal.

### **6.4 Reference to Other Sections:**

Refer to Section 8 for personal protective equipment and Section 13 for disposal information.

## **SECTION 7: HANDLING and STORAGE**

### **7.1 Precautions for Safe Handling:**

Avoid eye and skin contact. Keep containers closed when not in use.

### **7.2 Conditions for Safe Storage, including any Incompatibilities:**

Protect containers from physical damage. Store in a cool area. Keep containers closed when not in use. Store away from strong oxidizing agents.

Empty containers retain product residues. Follow all SDS precautions in handling empty containers



**7.3 Specific end use(s):**

**Industrial uses:** None

**Professional uses:** For In Vitro Diagnostic Use.

<b>SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION</b>
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**8.1 Control Parameters:**

Chemical Name	US OEL	EU IOEL	UK OEL	Germany OEL
Carbon Black	3 mg/m <sup>3</sup> ACGIH TLV TWA (Inhalable) 3.5 mg/m <sup>3</sup> OSHA PEL TWA	None Established	3.5 mg/m <sup>3</sup> TWA 7 mg/m <sup>3</sup> STEL	4 mg/m <sup>3</sup> TWA (Inhalable), 1.5 mg/m <sup>3</sup> TWA (Respirable fraction) (As inhalable dust)
Isopropanol	400 ppm TWA OSHA PEL 200 ppm TWA, 400 ppm STEL ACGIH TLV	None Established	400 ppm TWA, 500 ppm STEL	200 ppm TWA, 400 ppm STEL
Ammonia	50 ppm TWA OSHA PEL 25 ppm TWA, 35 ppm STEL ACGIH TLV	20 ppm TWA, 50 ppm STEL	25 ppm TWA, 35 ppm STEL	20 ppm TWA, 40 ppm STEL

Refer to local or national authority for exposure limits not listed above.

Chemical Name	Biological Limit Value
Carbon Black	None Established
Isopropanol	Acetone in urine 40 mg/L, end of shift at end of workweek (ACGIH)
Ammonia	None Established

**8.2 Exposure Controls:**

**Recommended Monitoring Procedures:**

Carbon Black: Collection on filters with gravimetric analysis.

Isopropanol: Collect on charcoal tubes. Analysis by gas chromatography.

Ammonia: Collect on ORB077 tubes. Analysis by color or ion specific electrode.

**Appropriate Engineering Controls:** No special ventilation normally required. Use with adequate local ventilation to maintain exposure levels below the occupational exposure limits if aerosols are formed.

**Personal Protective Measures**

**Eye/face Protection:** None normally needed. Safety glasses recommended if eye contact is possible.

**Skin Protection:** None should be needed for normal use.

**Hands:** None should be needed for normal use.

**Respiratory Protection:** None needed with adequate ventilation.

**Other protection:** Suitable washing facilities should be available.

<b>SECTION 9: PHYSICAL and CHEMICAL PROPERTIES</b>
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**9.1 Information on basic Physical and Chemical Properties**

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**Appearance:** Aqueous black dispersion displayed in a kit.

**Odor Threshold:** Not determined

**Melting/Freezing Point:** Not determined

**Flash Point:** : >93.3°C (>200°F)

**Lower Flammability Limit:** Not applicable

**Upper Flammability Limit:** Not applicable

**Vapor Density(Air=1):** Not determined

**Solubility:** Dispersible

**Autoignition Temperature:** Not determined

**Viscosity:** Not determined

**Oxidizing Properties:** None

**Molecular Formula:** Not determined

**Odor:** Faint ammonia odor.

**pH:** 8.5 – 10.0

**Boiling Point:** Not determined

**Evaporation Rate: (n-butylacetate =1)** Not determined

**Vapor Pressure:** Not determined

**Relative Density:** Not determined

**Octanol/Water Partition Coefficient:** Not available

**Decomposition Temperature:** Not determined

**Explosive Properties:** None

**Specific Gravity (H<sub>2</sub>O= 1):** 1.02 – 1.14

**Molecular Weight:** Not determined

9.2 Other Information: Carbon Black is only contained in the black pigment solution.

## SECTION 10: STABILITY and REACTIVITY

10.1 Reactivity: This material is not reactive under normal conditions.

10.2 Chemical Stability: Normally stable.

10.3 Possibility of Hazardous Reactions: Reaction with strong oxidizers may generate heat.

10.4 Conditions to Avoid: Avoid heat, and formation of mists, or vapors.

10.5 Incompatible Materials: Oxidizing agents, acids.

10.6 Hazardous Decomposition Products: Thermal breakdown of this product during fire or very high heat conditions may evolve the following decomposition products: Oxides of carbon, oxides of nitrogen, and unknown materials.

## SECTION 11: TOXICOLOGICAL INFORMATION

### 11.1 Information on Toxicological Effects:

#### Potential Health Effects:

**Eye Contact:** May cause irritation.

**Skin contact:** May cause mild irritation.

**Inhalation:** No adverse effects expected.

**Ingestion:** Swallowing may cause gastrointestinal irritation.

**Acute toxicity:** Carbon Black: LD50 Oral Rat > 15,400 mg/kg; LD50 Skin Rabbit > 3,000mg/kg

Isopropanol: LD50 oral rat 5045 mg/kg; LD50 dermal rabbit 12,800 mg/kg

Ammonia: LD50 oral rat 350 mg/kg; LD50 inhalation 7,600 mg/m<sup>3</sup>/ 2 hr

**Skin corrosion/irritation:** Ammonia is classified as a skin corrosive.

**Eye damage/irritation:** Isopropanol and ammonia are classified as a eye irritants.

**Respiratory Irritation:** May be irritating to the respiratory system.

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**Respiratory Sensitization:** Not a respiratory sensitizer.

**Skin Sensitization:** Not a skin sensitizer.

**Germ Cell Mutagenicity:** Not classified a germ cell mutagen. Isopropanol is not a germ cell mutagen. In vitro genetic toxicity studies were negative. Animal genetic toxicity studies were negative.

**Carcinogenicity:** Carbon Black is classified by IARC as Group 2B: Possibly carcinogenic to humans. No other components are listed as a carcinogen by OSHA, ACGIH, IARC, NTP, or EU Dangerous Substances Directive.

**Reproductive Toxicity:** No effects on reproduction are expected. In animal studies did not interfere with reproduction. Isopropanol has been toxic to the fetus in laboratory animals at doses toxic to the mother.

**Specific Target Organ Toxicity:**

Single Exposure: No data available.

Repeat Exposure: Isopropanol - In animals, effects have been reported on the following organs: Liver, kidney. Kidney effects have been observed in male rats. These effects are believed to be species specific and unlikely to occur in humans. Observations in animals include: Lethargy.

## SECTION 12: ECOLOGICAL INFORMATION

### 12.1 Toxicity:

No data available for mixture.

Isopropanol: LC50 fathead minnows 11,130 mg/L/48 hr; LC50 brown shrimp 1400 mg/L/48 hr

Ammonia: LC50 Morone americana (white perch) 0.15-0.2 mg/L/ 96 hr

### 12.2 Persistence and degradability:

No data available for mixture.

Isopropanol is readily biodegradable in screening tests.

Ammonia: When ammonia appears in water under the normal conditions (aerobic), it is rapidly converted to nitrate by nitrification; the principal water contaminant normally being nitrate. The pH in water is increased by the presence of ammonia ion, in the form of hydroxide ions.

### 12.3 Bioaccumulative Potential:

No data available for mixture.

Isopropanol has an estimated BCF of 3 suggesting that the potential for bioaccumulation is low.

Ammonia: Plants have a high affinity for gaseous ammonia when leaf stomata are open in daylight.

### 12.4 Mobility in Soil:

No data available for mixture.

Isopropanol are expected to have very mobility in soil.

Ammonia: Ammonia is strongly adsorbed on soil, and on sediment particles and colloids in water. This adsorption results in high concentrations of sorbed ammonia in oxidized sediments.

### 12.5 Results of PVT and vPvB assessment: Not required.

### 12.6 Other Adverse Effects: None.

## SECTION 13: DISPOSAL CONSIDERATIONS

### 13.1 Waste Treatment Methods:

Dispose in accordance with local, state and national regulations.

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**SECTION 14: TRANSPORTATION INFORMATION**

	<b>14.1 UN Number</b>	<b>14.2 UN Proper Shipping Name</b>	<b>14.3 Hazard Class(s)</b>	<b>14.4 Packing Group</b>	<b>14.5 Environmental Hazards</b>
<b>US DOT</b>	N/A	Not classified for transport	N/A	N/A	N/A
<b>Canadian TDG</b>	N/A	Not classified for transport	N/A	N/A	N/A
<b>EU ADR/RID</b>	N/A	Not classified for transport	N/A	N/A	N/A
<b>IMDG</b>	N/A	Not classified for transport	N/A	N/A	N/A
<b>IATA/CAO</b>	N/A	Not classified for transport	N/A	N/A	N/A

**14.6 Special Precautions for User:** None

**14.7 Transport in Bulk According to Annex III MARPOL 73/78 and the IBC Code:** Not determined.

**SECTION 15: REGULATORY INFORMATION**

**15.1 Safety, Health and Environmental Regulations/Legislation Specific for the Substance or Mixture**

**INTERNATIONAL INVENTORIES**

**EPA TSCA INVENTORY:** All of the components are listed on the TSCA inventory.

**CANADIAN ENVIRONMENTAL PROTECTION ACT:** All of the ingredients are listed on the Canadian Domestic Substances List.

**EUROPEAN UNION:** All of the components of this product are listed on the European Inventory of New and Existing Chemical Substances (EINECS) inventory.

**AUSTRALIA:** All of the ingredients of this product are listed on the Australian Inventory of Chemical Substances (AICS).

**CHINA:** All of the ingredients are listed on the Chinese chemical inventory.

**KOREA:** All of the components of this product are listed on the Korean Existing Chemical List (KECL).

**JAPAN:** All of the components of this product are listed on the Japanese Existing and New Chemical Substances List (ENCS).

**PHILIPPINES:** All of the components of this product are listed on the Philippine Inventory of Chemicals and Chemical Substances (PICCS).

**NEW ZEALAND:** All of the components of this product are listed on the New Zealand Inventory of Chemicals (NZIoC).

**U.S. REGULATIONS**

**CERCLA Section 103:** The RQ for the product, based on the RQ for ammonia (7664-41-7) (<1% maximum) of 100 lbs, is 10,000 lbs. Many states have more stringent release reporting requirements. Report spills required under federal, state and local regulations.

**EPA SARA 302:** This product contains the following chemicals regulated under SARA Section 302: Ammonia (7664-41-7) < 1%

**EPA SARA 311 HAZARD CLASSIFICATION:** Chronic health, Acute health

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**EPA SARA 313:** This product contains the following chemicals that are regulated under SARA Title III, section 313:  
 Isopropyl Alcohol (67-63-0) < 4%

**CALIFORNIA PROPOSITION 65:** This product contains the following chemicals which are known to the State of California to cause cancer, reproductive toxicity or birth defects (developmental toxicity): Carbon Black (Cancer)

**INTERNATIONAL REGULATIONS**

**WHMIS CLASSIFICATION:** Class D-2-A (Carcinogen), Class D-2-B (Irritant)

**SECTION 16: OTHER INFORMATION**

EU Classes and Risk Phrases for Reference (See Sections 2 and 3)

- F Highly Flammable
- T Toxic
- Xi Irritant
- C Corrosive
- N Dangerous for the environment
- R10 Flammable
- R11 Highly Flammable
- R23 Toxic by inhalation
- R34 Causes burns
- R36 Irritating to eyes.
- R50 Very toxic to aquatic organisms
- R67 Vapours may cause drowsiness and dizziness.

CLP/GHS Classification and H Phrases for Reference (See Section 3)

H221	Flammable gas
H225	Highly flammable liquid and vapour
H314	Causes severe skin burns and eye damage.
H319	Causes serious eye irritation.
H331	Toxic if inhaled
H336	May cause drowsiness or dizziness.
H351	Suspected of causing cancer
H400	Very toxic to aquatic life.

NFPA Rating: Health: 1      Fire: 0      Instability: 0  
 HMIS Rating: Health: 1\*      Fire: 0      Physical Hazard: 0

This Safety Data Sheet has been prepared in accordance with the REACH regulation in the EU and the Globally Harmonized System for the Classification and Labeling of Chemicals (GHS). It complies with the requirements of the Canadian Controlled Products Regulations and US 29CFR 1910.1200. To the best of our knowledge, the information contained herein is accurate. However, neither the above named supplier nor any of its subsidiaries makes any warranty of merchantability or any other warranty, expressed or implied, which respect to such information, and we assume no liability resulting from its use. In no event shall Cancer Diagnostics Inc. be liable for any claims, losses, or damages of any third party or for lost profits or any special, indirect, incidental, consequential or exemplary damages resulting from use of or reliance upon this information.

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