



CANCER
DIAGNOSTICS, INC.

Safety Data Sheet
CDI's Tissue Marking Dyes®

SECTION 1: PRODUCT AND COMPANY INFORMATION

Manufacturer Cancer Diagnostics, Inc., 4300 Emperor Blvd., Durham, NC 27703 - 877-846-5393 - www.cancerdiagnostics.com
Trade Name CDI's Tissue Marking Dyes®
Product ID 0723-1 thru -10, 0725-1 thru -10, 0726-1 thru -10, 0727-1 thru -10, 0728-1 thru -10, MD1002 thru MD1007, Colored Component/Dye in Following Kits: MD2000, MD3000, MK0030, MK0120, 01000, 01000P, 02000, 02000P, 03000, 03000P, 03000A, 03010A, 05000, 04000, 06000
Recommended Uses In vitro diagnostic Use.

24-Hour Emergency Phone Number, Contact 800-424-9300 (CHEMTREC) 703-527-3887

SECTION 2: HAZARD IDENTIFICATION

Physical Hazards: Not Classified
Health Hazard: Carcinogenicity – Category 2 – Suspected of causing cancer.
Signal Word - **DANGER**
Eye Damage / Irritation - Category 2A - Causes serious eye irritation.
Signal Word - **WARNING**



Precautionary Statements:

Prevention Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Wash hands or other contact areas thoroughly after handling. Do not eat, drink or smoke when using this product. Wear protective gloves/ clothing/eye protection/face protection.

Response **If exposed or concerned:** Get medical advice/attention.
If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists get medical attention.

Storage Store locked up.
Disposal Dispose of container/contents to an approved disposal site in accordance with all local and national regulations.
Environmental Hazards Not Classified.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

Component	CAS	Percentage
Aqueous Pigment Dispersion	Proprietary	<100
Isopropyl alcohol	67-63-0	<4
Ammonia	7664-41-7	<1

SECTION 4: FIRST AID MEASURES

Skin Contact First aid not normally required. Remove contaminated clothing. Wash area of contact with soap and water. Wash clothing before reuse. Get medical attention if irritation occurs and persists.
Eye Contact Remove contact lenses. Flush with water until all traces of material are gone. Eyelids should be held away from the eyeball to ensure thorough rinsing. Get medical attention if irritation persists.
Inhalation Remove affected person from source of exposure. Get medical attention if breathing difficulty or discomfort persists.
Ingestion Do not induce vomiting because of danger of aspiration into lungs. If conscious, give a glass of water. Never give anything by mouth to an unconscious person. If spontaneous vomiting occurs, monitor for breathing difficulty. Get medical attention.

SECTION 5: FIREFIGHTING MEASURES

Basic Firefighting Procedures
In case of fire: Use dry chemical, foam or water fog to extinguish. Do not use direct water stream. Use a water spray to cool fire-exposed containers, structures and to protect personnel. Exposed firefighters should wear MSHA/NIOSH approved self-contained breathing apparatus with full-face mask and full protective equipment. Flush spills away from sources of ignition.
Unusual Fire and Explosion Hazards
Store in a well-ventilated place. Keep cool.

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SECTION 6: ACCIDENTAL RELEASE MEASURES

Refer to Section 8: Exposure Control and Personal Protection

Emergency Action

For large spills, isolate the release area and keep unnecessary people away. Exercise caution regarding personnel safety and exposure.

Spill/Leak Procedure

Floor and surfaces may be slippery. Dike with sand or other material. Flush area with water provided runoff does not enter drain or sewer; use absorbent material and dispose of properly.

Notification

Any spill or release to navigable water that causes a visible sheen upon the water must be reported immediately to the National Response Center (800/424-8802), as required by U.S. federal law.

SECTION 7: HANDLING AND STORAGE

Refer to Section 8: Exposure Control and Personal Protection

Handling

Wear proper protective equipment. Avoid contact with skin, eyes and clothing. Avoid breathing vapors or mists. Do not ingest. For intended use only. Use good hygiene practices when handling product, including changing and laundering work clothes after use. Get medical attention if you are exposed and feel unwell. The shipping and storage container is not designed to be pressurized. Do not use pressure to empty the container as it may rupture. Containers should be completely drained, properly closed, and promptly returned to a drum reconditioner or disposed of properly. Empty containers may contain residue or vapors. Do not cut, grind, drill, weld or reuse containers.

Storage

Do not store near incompatible chemicals. When possible, store in a dry place at moderate temperatures (above freezing) away from heat and flames. This material is to be handled and applied according to label directions. Keep this product and all chemicals away from children and pets. Keep containers closed when not in use. Keep from freezing. Do not eat, drink, or smoke while using this product.

SECTION 8: EXPOSURE CONTROL AND PERSONAL PROTECTION

Component	ACGIH TWA	ACGIH STEL	OSHA PEL	Germany OEL
Isopropanol	200 ppm	200 ppm	400 ppm	4 mg/m3 TWA (Inhalable) 1.5 mg/m3 TWA Respirable Fraction
Ammonia	25 ppm	35 ppm	50 ppm	200 ppm TWA, 400 ppm STEL
Carbon Black	3 mg/m3		3 mg/m3	

IARC: Carbon black is possibly carcinogenic to humans (Group 2B)

NTP: Carbon black is not designated as a carcinogen by the U.S. National Toxicology Program (NTP).

ACGIH: The American Conference of Governmental Industrial Hygienists classifies carbon black as A4, Not Classifiable as a Human Carcinogen.

NIOSH: The U.S. National Institute of Occupational Safety and Health (NIOSH) 1978 criteria document on carbon black recommends that only carbon blacks with PAH contaminant levels greater than 0.1% require the measurement of PAHs in air. As some PAHs are possible human carcinogens, NIOSH recommends an exposure limit of 0.1 mg/m3 for PAHs in air, measured as the cyclohexane extractable fraction.

Recommended Monitoring Procedures:

Carbon Black: Collection on filters with gravimetric analysis.

Isopropanol: Collect on charcoal tubes. Analysis by gas chromatography. Biological Limit Value - Acetone in urine 40 mg/L end of shift at end of work week. (ACGIH)

Ammonia: None Established.

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

Eye and Face Protection: Not normally needed. Safety glasses recommended if eye contact is possible.

Skin Protection: None should be needed for normal use.

Respiratory Protection: Not normally needed with adequate ventilation

Other Protection: Suitable washing facilities should be available.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

Appearance/Physical State			
Specific Gravity (Water=1)	1.02 - 1.14	Upper/Lower Flammability Limits (Vol. %)	Not Determined
pH	8.5 - 10.0	Auto-ignition Temperature	Not Applicable
Solubility in Water	Dispersable	Decomposition Temperature	Not Determined
Odor	Faint ammonia odor	Vapor Pressure (Water = 1)	Not Determined
Odor Threshold	Not Determined	Vapor Density (Air=1) (20°C/77°F)	Not Determined
Melting/Freezing Point	Not Determined	Partition Coefficient (n-octanol/water)	Not Determined
Boiling Range	Not Determined	Viscosity (cSt at 25°C/77°F)	Not Determined
Initial Boiling Point (°F / °C)	81 / 27	Critical Temperature	Not Determined

Note: Physical and chemical properties are provided for safety, health and environmental considerations only and may not fully represent product specifications. Those should be requested separately.

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SECTION 10: STABILITY AND REACTIVITY

Reactivity	Does not react under normal conditions of use.
Chemical Stability	Stable under normal conditions of use.
Stability/Incompatibility	Avoid contact with strong oxidizers. Carbon black may react exothermically.
Conditions to Avoid	Avoid heat, open flame, and formation of mists, or vapors.
Incompatible Materials:	Oxidizing agents like nitrates, acids.
Hazardous Reactions/Decomposition Products	Thermal breakdown of this product during fire or very high heat conditions may evolve the following decomposition products: Oxides of carbon, nitrogen and sulfur plus unknown materials.

SECTION 11: TOXICOLOGICAL INFORMATION

Likely Routes of Exposure	Skin, Eyes, Inhalation
Acute Toxicity	Acute Toxicity
Acute oral toxicity:	LD50 (rat), >8000 mg/kg
Primary irritation:	Skin (rabbit): non-irritative, index score 0.6/8 (4 = severe edema) eye (rabbit): non-irritative, Draize score 10-17/110 (100 maximally irritating)
Sensitization:	No evidence of sensitization was found in animals. No cases of sensitization in humans have been reported.
Subchronic toxicity:	Rat, inhalation, 90-days: inflammation, hyperplasia, fibrosis Target organ: lungs NOEL = 1 mg/m ³ 11.1.3 Chronic toxicity Rat, oral, 2 years: no tumors Mouse, oral, 2 years: no tumors Mouse, dermal, 2 years: no skin tumors Rat, inhalation, 2 years: inflammation, fibrosis, tumors
Target organ:	lungs Mouse/hamster, inhalation, 2 years: no tumors Note: Effects in the rat lung are considered to be related to the "lung overload phenomenon" 1, 6-9) rather than to a specific chemical effect of carbon black itself in the lung. These effects in rats have been reported in many studies on other poorly soluble inorganic particles
Eye Contact:	May cause irritation. Ammonia and Isopropanol are classified as an eye irritant.
Skin Contact:	May cause mild irritation Ammonia is classified as a skin corrosive. Inhalation: May be irritation to the respiratory system. Ingestion: Swallowing may cause gastrointestinal irritation.
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.
Chronic Effects	Any acute symptoms may be aggravated. Refer to Sections 2 and 4 for recommended actions.
Symptoms	May include redness, drying, cracking of the skin, gastrointestinal and respiratory discomfort. Refer to Sections 2 and 4 for recommended actions.
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	Isopropanol has been toxic to the fetus of laboratory animals at doses toxic to the mother.
Specific Organ Toxicity:	Single Exposure: No Data Available Repeat Exposure: 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

Ecotoxicity	Isopropanol: LC50 flathead 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
	Carbon Black: 1 Acute algae toxicity: EC 50 (72 h) >10,000 mg/L, Scenedesmus subspicatus (OECD Guideline 201) NOEC 50 > 10,000 mg/L, Scenedesmus subspicatus (OECD Guideline 201) Acute fish toxicity: LC50 (96 h) > 1000 mg/L, Brachydanio rerio (zebra fish) (OECD Guideline 201) Acute water flea toxicity: EC50 (24 h) > 5600 mg/L, Daphnia magna (water flea) (OECD Guideline 201)
Persistence and Biodegradability	Not Determined
Bioaccumulative Potential	Not Determined
Mobility in Soil	Not Determined

SECTION 13: DISPOSAL CONSIDERATION

Product Disposal	Product should be disposed of in accordance with the regulations issued by the appropriate federal, Provincial, state, and local authorities. Carbon black is an inert solid, stable and insoluble in water or organic solvents.
Container/Packaging disposal	Empty packaging must be disposed of in accordance with national and local laws.
Behavior in water treatment plants:	Activated sludge, EC0 (3 h) > 800 mg/L. DEV L3 (TTC test)
Canada:	Not a hazardous waste under provincial regulations
EU:	EU Waste Code No. 061303 per Council Directive 75/422/EEC
USA:	Not a hazardous waste under U.S. RCRA, 40 CFR 261.

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SECTION 14: TRANSPORT INFORMATION

DOT	Not Regulated
UN proper shipping name:	Not applicable
Transport hazard class (es):	Not applicable
Packing group:	Not applicable
Environmental hazards:	Not applicable
Special precautions for user:	Not applicable
Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code:	Not applicable

SECTION 15: REGULATORY INFORMATION

Chemical Inventory Lists	All ingredients are listed on TSCA. SARA Section 313 and DSL
SARA (311/312) Reportable Hazard Categories	Immediate health hazard: No Delayed (chronic) health hazard: Yes Sudden release of pressure hazard: No Reactive hazard: No
New Jersey Right to Know:	IPA, Carbon Black
Pennsylvania Right to Know:	IPA, Carbon Black
Massachusetts Right to Know:	Carbon Black
California Proposition 65:	Carbon black (airborne, unbound particles of respirable size) is a California Proposition 65 listed substance.
Germany:	WGK (Water Endangering Class) nwg (not water endangering): 1742

SECTION 16: OTHER INFORMATION

Notice: Cancer Diagnostics, Inc. believes that the information given herein is accurate. Final determination of suitability of any material is the sole responsibility of the user.

Prepared By Cancer Diagnostic, Inc.