

Issuing Date February 10, 2014

1. PRODUCT AND COMPANY IDENTIFICATION

Product name 4710BK
Product Code(s) 4710 Black
Recommended Use ink.

For further information, please contact

Manufacturer:	Digital Design Inc. 67 Sand Park Road Cedar Grove NJ 07009 PH: 973-857-9500 Fax: 973-857-0607	Emergency Contact:	Chem-Tel Inc. (24 hr) 1-800-255-3924 (Domestic) 01-813-248-0585 (International)
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2. Hazards Identification

EMERGENCY OVERVIEW

Contains a known or suspected reproductive toxin
 Harmful if swallowed, inhaled, or absorbed through skin
 Irritating to eyes
 Vapors may be irritating to eyes, nose, throat, and lungs
 May cause central nervous system depression
MAY BE HARMFUL IF SWALLOWED
 May cause adverse effects on the bone marrow and blood-forming system
 May cause adverse liver effects

Appearance black

Physical state liquid

Odor solvent

Potential health effects

Principle Routes of Exposure Inhalation, Skin Contact, Eye Contact.

Acute toxicity

EYES

skin

Inhalation

INGESTION

Moderately irritating to the eyes. Avoid contact with eyes.
 May be absorbed through the skin in harmful amounts. Toxic in contact with skin. Toxic: danger of very serious irreversible effects in contact with skin. Avoid contact with skin.
 Avoid breathing vapors or mists. May cause central nervous system depression with nausea, headache, dizziness, vomiting, and incoordination. Toxic: danger of very serious irreversible effects through inhalation. Toxic by inhalation. May be harmful if inhaled.
 Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea. Ingestion may cause irritation to mucous membranes. Toxic if swallowed. Toxic: danger of very serious irreversible effects if swallowed. Do NOT taste or swallow. HARMFUL IF SWALLOWED.

Chronic effects

Avoid repeated exposure. Contains a known or suspected reproductive toxin.

Aggravated Medical Conditions

central nervous system. Gastrointestinal tract. Preexisting eye disorders. Blood disorders. Liver disorders. Overexposure may cause female and male reproductive disorder(s). Skin disorders. Respiratory disorders. Use of alcoholic beverages may enhance toxic effects.

Interactions with Other Chemicals Use of alcoholic beverages may enhance toxic effects.

3. Composition/information on Ingredients

Chemical name	CAS-No	Weight %
Methyl alcohol	67-56-1	40 - 65
Ethyl alcohol	64-17-5	10 - 35
Black Dye	NOT AVAILABLE	1 - 10
Ester	-	1 - 5
Isopropyl alcohol	67-63-0	1 - 5

Additional Notes

Remaining components are either not hazardous or below threshold limits.

4. First aid measures

General advice	Immediate medical attention is required. In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible). If symptoms persist, call a physician.
Eye contact	Keep eye wide open while rinsing. Immediately flush with plenty of water. After initial flushing, remove any contact lenses and continue flushing for at least 15 minutes. Call a physician immediately. Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician. If symptoms persist, call a physician.
IF ON SKIN	Wash off immediately with plenty of water. Immediate medical attention is not required. Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. If skin irritation persists, call a physician.
Inhalation	Immediate medical attention is required. Remove to fresh air. If not breathing, give artificial respiration. Avoid direct contact with skin. Use barrier to give mouth-to-mouth resuscitation. If breathing is difficult, give oxygen. Immediate medical attention is not required. Move to fresh air in case of accidental inhalation of vapors. If symptoms persist, call a physician.
INGESTION	Never give anything by mouth to an unconscious person. Do NOT induce vomiting. Call a physician or poison control center immediately. Drink plenty of water. Clean mouth with water and afterwards drink plenty of water. Do not induce vomiting without medical advice. Consult a physician.
Notes to Physician	Treat symptomatically.
Protection of First-aiders	Remove all sources of ignition. Use personal protective equipment as required.

5. Fire-fighting measures

Flammable properties	HIGHLY FLAMMABLE: Will be easily ignited by heat, sparks or flames.
Flash Point	< 17 °C
Method	Seta closed cup
Suitable extinguishing media	Use. Carbon dioxide (CO ₂). Dry chemical. Water spray, fog or alcohol-resistant foam.
Explosion data	

NFPA	Health hazard 3	flammability 3	stability 0	Physical and chemical properties -
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6. Accidental release measures

Personal precautions	Remove all sources of ignition. Evacuate personnel to safe areas. Ensure adequate ventilation. Use personal protective equipment as required. Keep people away from and upwind of spill/leak.
Methods for containment	Prevent further leakage or spillage if safe to do so. Cover powder spill with plastic sheet or tarp to minimize spreading. Dike far ahead of liquid spill for later disposal.
Methods for cleaning up	Dam up. Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust). Pick up and transfer to properly labeled containers. Soak up with inert absorbent material.

7. Handling and Storage

Handling Ensure adequate ventilation. Keep away from open flames, hot surfaces and sources of ignition. Take precautionary measures against static discharges. Use only in an area containing flame proof equipment. To avoid ignition of vapors by static electricity discharge, all metal parts of the equipment must be grounded. Avoid contact with skin, eyes and clothing. Do not eat, drink or smoke when using this product. Use with local exhaust ventilation. Use personal protective equipment as required. Do not breathe dust/fume/gas/mist/vapors/spray.

Storage Keep tightly closed in a dry and cool place. Keep in properly labeled containers. Keep containers tightly closed in a cool, well-ventilated place.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Chemical name	ACGIH TLV	OSHA PEL	NIOSH IDLH
Methyl alcohol 67-56-1	250 ppm STEL TWA: 200 ppm	TWA: 200 ppm TWA: 260 mg/m ³	IDLH: 6000 ppm TWA: 200 ppm TWA: 260 mg/m ³ STEL: 250 ppm STEL: 325 mg/m ³
Ethyl alcohol 64-17-5	1000 ppm STEL	TWA: 1000 ppm TWA: 1900 mg/m ³	IDLH: 3300 ppm TWA: 1000 ppm TWA: 1900 mg/m ³
Isopropyl alcohol 67-63-0	400 ppm STEL TWA: 200 ppm	TWA: 400 ppm TWA: 980 mg/m ³	IDLH: 2000 ppm TWA: 400 ppm TWA: 980 mg/m ³ STEL: 500 ppm STEL: 1225 mg/m ³

NIOSH IDLH: Immediately Dangerous to Life or Health

Engineering Measures Ensure adequate ventilation, especially in confined areas.

Personal protective equipment

Eye/face Protection

Tight sealing safety goggles. Face protection shield.

Hygiene Measures

When using do not eat or drink. Regular cleaning of equipment, work area and clothing is recommended.

9. Physical and Chemical Properties

Appearance	black	Odor	solvent
Physical state	liquid 5 - 7		
Flash Point	< 17 °C	Method	Seta closed cup
Autoignition temperature	No information available	Boiling point / boiling range	> 75 °C
		Flammability Limits in Air	
		Upper	11.5 (volume % in Air)
		Lower	1.8 (volume % in Air)
Explosion Limits	No information available	Solubility	partly miscible
Specific gravity	0.700 - 0.900	Vapor Pressure	No information available
Evaporation Rate	No information available	Viscosity	< 15 cps
Vapor Density	Heavier than air		

10. Stability and Reactivity

Incompatible Products Strong oxidizing agents. Acids. Chlorinated compounds.

Conditions to avoid Heating in air. Heat, flames and sparks.

Hazardous decomposition products Carbon oxides.

Hazardous Reactions None under normal processing.

Hazardous polymerization Hazardous polymerization does not occur.

11. Toxicological Information

Acute toxicity

Product Information The product has not been tested.

Acute toxicity

EYES Moderately irritating to the eyes. Avoid contact with eyes.

skin May be absorbed through the skin in harmful amounts. Toxic in contact with skin. Toxic: danger of very serious irreversible effects in contact with skin. Avoid contact with skin.

Inhalation Avoid breathing vapors or mists. May cause central nervous system depression with nausea, headache, dizziness, vomiting, and incoordination. Toxic: danger of very serious irreversible effects through inhalation. Toxic by inhalation. May be harmful if inhaled.

INGESTION Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea. Ingestion may cause irritation to mucous membranes. Toxic if swallowed. Toxic: danger of very serious irreversible effects if swallowed. Do NOT taste or swallow. HARMFUL IF SWALLOWED.

Chemical name	LD50 Oral	LD50 Dermal	LC50 Inhalation
Methyl alcohol	= 5628 mg/kg (Rat)		= 83.2 mg/L (Rat) 4 h
Ethyl alcohol			= 124.7 mg/L (Rat) 4 h
Ester	= 1540 mg/kg (Rat)		> 5100 mg/m ³ (Rat) 4 h
Isopropyl alcohol	= 4396 mg/kg (Rat)	= 12800 mg/kg (Rabbit)	= 16000 ppm (Rat) 8 h

Chronic toxicity

Chronic toxicity Avoid repeated exposure. Contains a known or suspected reproductive toxin.

carcinogenicity

This product contains Ethanol which is classified as a possible carcinogen when ingested in the form of an alcoholic beverage. This is irrelevant as this product is used for ink jet ink applications not an alcoholic beverage. This product contains one or more substances which are classified by IARC as carcinogenic to humans (Group 1), probably carcinogenic to humans (Group 2A) or possibly carcinogenic to humans (Group 2B).

Chemical name	ACGIH	IARC	NTP	OSHA
Ethyl alcohol		Group 1	Known	X
Isopropyl alcohol		Group 1		X

ACGIH: (American Conference of Governmental Industrial Hygienists)

A3 - Animal Carcinogen

IARC: (International Agency for Research on Cancer)

Group 1 - Carcinogenic to Humans

Group 2A - Probably Carcinogenic to Humans

Group 2B - Possibly Carcinogenic to Humans

NTP: (National Toxicity Program)

Known - Known Carcinogen

Reasonably Anticipated - Reasonably Anticipated to be a Human Carcinogen

Reproductive toxicity May impair fertility.

Target organ effects blood, Central Nervous System (CNS), EYES, Gastrointestinal tract (GI), liver, Reproductive System, Respiratory System, skin.

12. Ecological Information

ecotoxicity

Not Established.

Chemical name	Toxicity to Algae	Toxicity to Fish	Microtox	Daphnia Magna (Water Flea)
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Methyl alcohol		28200: 96 h Pimephales promelas mg/L LC50 flow-through 100: 96 h Pimephales promelas mg/L LC50 static 19500 - 20700: 96 h Oncorhynchus mykiss mg/L LC50 flow-through 18 - 20: 96 h Oncorhynchus mykiss mL/L LC50 static 13500 - 17600: 96 h Lepomis macrochirus mg/L LC50 flow-through	EC50 = 39000 mg/L 25 min EC50 = 40000 mg/L 15 min EC50 = 43000 mg/L 5 min	
Ethyl alcohol		12.0 - 16.0: 96 h Oncorhynchus mykiss mL/L LC50 static 100: 96 h Pimephales promelas mg/L LC50 static 13400 - 15100: 96 h Pimephales promelas mg/L LC50 flow-through	EC50 = 34634 mg/L 30 min EC50 = 35470 mg/L 5 min	9268 - 14221: 48 h Daphnia magna mg/L LC50 10800: 24 h Daphnia magna mg/L EC50 2: 48 h Daphnia magna mg/L EC50 Static
Ester	360: 72 h Desmodemus subspicatus mg/L EC50 79: 96 h Desmodemus subspicatus mg/L EC50	220 - 460: 96 h Leuciscus idus mg/L LC50 static	EC50 > 10000 mg/L 17 h	500: 48 h Daphnia magna Straus mg/L EC50
Isopropyl alcohol	1000: 96 h Desmodemus subspicatus mg/L EC50 1000: 72 h Desmodemus subspicatus mg/L EC50	9640: 96 h Pimephales promelas mg/L LC50 flow-through 11130: 96 h Pimephales promelas mg/L LC50 static 1400000: 96 h Lepomis macrochirus µg/L LC50	EC50 = 35390 mg/L 5 min	13299: 48 h Daphnia magna mg/L EC50
Chemical name		Log Pow		
Methyl alcohol		-0.77		
Ethyl alcohol		-0.32		
Ester		-0.566		
Isopropyl alcohol		0.05		

13. Disposal Considerations

Waste treatment methods

Disposal should be in accordance with applicable regional, national and local laws and regulations. Should not be released into the environment.

This product contains one or more substances that are listed with the State of California as a hazardous waste.

Chemical name	California Hazardous Waste Status
Methyl alcohol	Toxic; Ignitable
Ethyl alcohol	Toxic; Ignitable
Isopropyl alcohol	Toxic, Ignitable

14. Transport Information

UN-No UN1210
Proper shipping name Printing Ink, Flammable
Hazard Class 3
Packing group II

15. Regulatory information

Acute health hazard yes

International Inventories

Chemical name	TSCA	DSL	EINECS/ELI NCS	ENCS	IECSC	KECL	PICCS	AICS	NZIoC

Methyl alcohol - 67-56-1	X	X	X	X	X	X	X	X	X
Ethyl alcohol - 64-17-5	X	X	X	X	X	X	X	X	X
Ester -	X	X	X	X	X	X	X	X	X
Isopropyl alcohol - 67-63-0	X	X	X	X	X	X	X	X	X

U.S. Federal Regulations

SARA 313

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product contains a chemical or chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372

Chemical name	CAS-No	Weight %	SARA 313 - Threshold Values %
Methyl alcohol	67-56-1	40 - 65	1.0
Isopropyl alcohol	67-63-0	1 - 5	1.0

SARA 311/312 Hazard Categories

Chronic Health Hazard	yes
Fire hazard	yes
Sudden release of pressure hazard	No
Reactive Hazard	No

Clean Water Act

Component	CWA - Reportable Quantities	CWA - Toxic Pollutants	CWA - Priority Pollutants	CWA - Hazardous Substances
Isopropyl alcohol 67-63-0 (1 - 5)				x

Chemical name	CAS-No	Weight %	HAPS data	VOC Chemicals	Class 1 Ozone Depletors	Class 2 Ozone Depletors
Methyl alcohol	67-56-1	40 - 65	Present	Group IV		
Ester		1 - 5		Group I		

CERCLA

Chemical name	Hazardous Substances RQs	Extremely Hazardous Substances RQs
Methyl alcohol	5000 lb	

U.S. State Regulations

International Regulations

Mexico - Grade Serious risk, Grade 3

Chemical name	Carcinogen Status	Exposure Limits
Methyl alcohol		Mexico: TWA 200 ppm Mexico: TWA 260 mg/m ³ Mexico: STEL 250 ppm Mexico: STEL 310 mg/m ³
Ethyl alcohol		Mexico: TWA 1000 ppm Mexico: TWA 1900 mg/m ³
Isopropyl alcohol		Mexico: TWA 400 ppm Mexico: TWA 980 mg/m ³ Mexico: STEL 500 ppm Mexico: STEL 1225 mg/m ³

CANADA

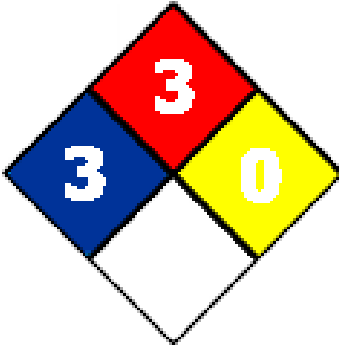
Chemical name	WHMIS Hazard Class
Methyl alcohol - 67-56-1	1 % B2,D1B,D2A,D2B
Ethyl alcohol - 64-17-5	0.1 % B2,D2B
Isopropyl alcohol - 67-63-0	1 % B2,D2B

Chemical name	NPRI
Methyl alcohol	X
Isopropyl alcohol	X

Legend

NPRI - National Pollutant Release Inventory

16. Other information

NFPA	HMIS	PPE	Transport Symbol						
	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="background-color: #0000FF; color: white;">Health Hazard</td> <td style="text-align: center; font-weight: bold;">3</td> </tr> <tr> <td style="background-color: #FF0000; color: white;">Fire Hazard</td> <td style="text-align: center; font-weight: bold;">3</td> </tr> <tr> <td style="background-color: #FFFF00;">Reactivity</td> <td style="text-align: center; font-weight: bold;">0</td> </tr> </table>	Health Hazard	3	Fire Hazard	3	Reactivity	0		
Health Hazard	3								
Fire Hazard	3								
Reactivity	0								

Issuing Date February 10, 2014

Revision note No information available.

Disclaimer

This product is intended to be used as a printing fluid. The information provided on this MSDS is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guide for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered as a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other material or in any process, unless specified in the text.

End of Safety Data Sheet