

MATERIAL SAFETY DATA SHEET

Prepared to U.S. OSHA, CMA, ANSI and Canadian WHMIS Standards

PART I *What is the material and what do I need to know in an emergency?*

1. PRODUCT IDENTIFICATION

TRADE NAME (AS LABELED): 4052 Black (Red, Green Blue)
SYNONYM/CHEMICAL CLASS: Solution of Dyes
PRODUCT USE: Ink Jet Printing Ink
MANUFACTURER'S NAME: Digital Design Inc.
ADDRESS: 67 Sand Park Road
 Cedar Grove, NJ 07009
MANUFACTURER'S PHONE: 973-857-9500
EMERGENCY PHONE: 1-800-255-3924 (Chem-Tel Inc.)
DATE OF PREPARATION: October 4, 2007

Hazardous Material	
HEALTH (BLUE)	1
FLAMMABILITY (RED)	1
REACTIVITY (YELLOW)	0

2. COMPOSITION, INFORMATION ON INGREDIENTS

CHEMICAL NAME	CAS #	% w/w	EXPOSURE LIMITS IN AIR					OTHER
			ACGIH		PEL	OSHA		
			TLV	STEL		STEL	IDLH	
			mg/m3	mg/m3	mg/m3	mg/m3	mg/m3	
Water	7732-18-5	> 30	NE	NE	NE	NE	NE	NE
2-pyrrolidone	616-45-5	< 30	NE	NE	NE	NE	NE	NE
Ethylene Glycol	107-21-1	< 25	NE	NE	NE	NE	NE	NE

NE = Not Established

CHEMICAL NAME	CAS #	% w/w	EXPOSURE LIMITS IN AIR					OTHER
			ACGIH		OSHA			
			TLV	STEL	PEL	STEL	IDLH	
			mg/m3	mg/m3	mg/m3	mg/m3	mg/m3	
Alkyldiol	Proprietary	< 7.5	NE	NE	NE	NE	NE	NE
Food Black 2 acid salt #3	Proprietary	< 5	NE	NE	NE	NE	NE	NE

3. HAZARD IDENTIFICATION

EMERGENCY OVERVIEW: This is a **colored** liquid with properties similar to water. It is a low hazard material which presents only slight health hazards. Though the material is not flammable, the byproducts of thermal decomposition may include toxic gas (i.e. carbon monoxide and nitrogen oxides).

SYMPTOMS OF OVER-EXPOSURE BY ROUTE OF EXPOSURE: This material is generally low risk, when used in the prescribed manner. Health affects expected may include irritation of the affected part of the body.

Inhalation: The constituents of this material are of low volatility, low order of acute toxicity, and will not normally cause inhalation problems. Inhalation of a mist of this material may cause respiratory irritation, which shall be relieved upon termination of the exposure.

Contact with Skin or Eyes: Due to the colorant components, skin contact will cause discoloration of the skin and is not easily removed by washing. Irritation may occur. Contact with the eyes will cause burning and may impair vision by staining the eye.

Skin Absorption: The major components of this ink do not absorb through the skin. While trace components have been reported to absorb, their concentration in this ink is sufficiently low so that this is not considered a problem.

Ingestion: Ingestion of this material will stain the mouth and esophagus. Ingestion of large amounts will cause gastrointestinal distress. Ingestion will cause irritation of the upper gastrointestinal tract, causing difficulty in swallowing.

HEALTH EFFECTS OR RISKS FROM EXPOSURE (An explanation in lay terms).

ACUTE: This ink is generally a low hazard material. The major acute affect is discoloration of affected tissue and local irritation. Contact with the eyes will cause irritation and may impair vision.

CHRONIC: No chronic affects are expected from any of the constituents of this ink at the concentrations present in the ink.

PART II *What do I do if a hazardous situation occurs?*

4. FIRST-AID MEASURES

If spilled on skin or eyes, immediately wash it off with running water. Remove contaminated clothing, taking care not to contaminate the eyes. Victims must seek immediate medical attention if any symptoms of irritation develop. If the product is in the eyes, flush under gentle running water for 15 minutes. If chemical is inhaled and causes irritation, remove victim to fresh air.

If chemical is swallowed, seek medical attention. If professional advice is not available, give large quantities of water and induce vomiting if victim is conscious. Never induce vomiting or give diluents (milk or water) to someone who is unconscious, having convulsions, or who cannot swallow.

If excessively inhaled, remove to fresh air. If difficulty in breathing, give artificial respiration.

Victims of chemical exposure should be taken for medical attention if symptoms of exposure develop. Take copy of label and MSDS to physician or health professional with victim.

5. FIRE-FIGHTING MEASURES

FLASHPOINT C (method): > 93.3 C (>200 deg F) Pensky-Martens Closed Cup

IGNITION TEMPERATURE C: Not applicable

FLAMMABLE LIMITS (in air by volume %): Lower: Not Applicable

Upper: Not Applicable

FIRE EXTINGUISHER MATERIALS AND METHODS: Fire fighting should concentrate on surrounding materials. This material will not contribute to the intensity of the fire or the toxicity of the smoke.

Water Spray: OK

Carbon Dioxide: OK

Foam: OK

Dry Chemical: OK

Halon: OK

SPECIAL FIRE FIGHTING PROCEDURES: Incipient fire responders should wear eye protection. Structural fire fighters must wear self-contained breathing apparatus and full protective equipment. This ink may discolor run-off water.

UNUSUAL FIRE AND EXPLOSION HAZARDS: When subjected to prolonged high temperatures or burning, this product will emit fumes containing carbon monoxide, nitrogen oxides and carbon dioxide.

Explosion Sensitivity to Mechanical Impact: Not sensitive.

Explosion Sensitivity to Static Discharge: Not sensitive.

6. ACCIDENTAL RELEASE MEASURES

SPILL AND LEAK RESPONSE: For incidental spills, use professional equipment such as rubber gloves and rubber apron, splash goggles or safety glasses. Uncontrolled or large releases should be responded to by trained personnel using pre-planned procedures. Proper protective equipment should be used. In case of any spill, clear the affected area, protect people, and respond with trained personnel. Respiratory protection should be used to protect against potentially irritating contaminated dust.

Absorb spilled liquid with polypads or other appropriate materials. Avoid splashing or spraying liquid. Decontaminate area thoroughly by rinsing with water. It may not be possible to decolorize stains. Place all spill residue in a double plastic bag, in appropriate sealed container. Dispose of in accordance with Federal, State, and local waste disposal regulations.

PART III *How can I prevent hazardous situations from occurring?*

7. HANDLING AND STORAGE

WORK PRACTICES AND HYGENE PRACTICES: Avoid getting chemicals ON YOU or IN YOU. Wash hands after handling chemicals. Do not eat or drink while handling chemicals. Avoid breathing mists of this ink.

STORAGE AND HANDLING PRACTICES: Store product in properly labeled, closed, containers in cool location.

PROTECTIVE PRACTICES DURING MAINTENANCE OF CONTAMINATED EQUIPMENT: Follow practices indicated in Section 6 (Accident Release Measures). Make certain application equipment is locked and tagged-out safely. Always use this product in areas where adequate ventilation is provided. Decontaminate equipment using soapy water before maintenance begins. Collect all rinsates and dispose of according to applicable Federal, State, or local procedures.

8. EXPOSURE CONTROLS – PERSONAL PROTECTION

VENTILATION AND ENGINEERING CONTROLS: Use with adequate ventilation. Use a mechanical fan or vent area to outside.

RESPIRATORY PROTECTION: None required under routine conditions of use and proper ventilation. It is advisable to use respiratory protection (NIOSH-Approved) during prolonged exposure.

EYE PROTECTION: Splash goggles or safety glasses.

HAND PROTECTION: Use lightweight rubber or plastic gloves. Check gloves for leaks. Wash hands after removing gloves.

BODY PROTECTION: Use body protection appropriate for task. Cover-alls, rubber aprons, or chemical protective clothing to minimize exposure. Clothing made from natural rubber are generally acceptable, depending upon the task.

9. MATERIAL CHARACTERISTICS

<u>PHYSICAL STATE:</u>	Liquid	<u>ph:</u>	7 – 7.4
<u>VAPOR DENSITY:</u>	> 1 (air = 1.0)	<u>EVAPORATION RATE:</u>	Not Available
<u>SPECIFIC GRAVITY:</u>	1.0-1.2	<u>MELTING POINT OR RANGE:</u>	N/A
<u>SOLUBILITY IN WATER:</u>	Yes	<u>BOILING POINT:</u>	Not Available
<u>VAPOR PRESSURE:</u>	Not Available	<u>VISCOSITY:</u>	> 2 cp
<u>ODOR THRESHOLD:</u>	Not Established	<u>OIL/WATER DISTRIB. COEFFICIENT:</u>	NA

APPEARANCE, ODOR AND COLOR: This ink is a **colored** liquid, having a slight odor.

HOW TO DETECT THIS SUBSTANCE (warning properties): This ink will be readily visible by its color.

10. STABILITY AND REACTIVITY

STABILITY: Stable

CONDITIONS TO AVOID: Extreme heat may cause material to decompose, producing acrid smoke and hazardous byproducts of carbon monoxide, nitrogen oxides and carbon dioxide. This ink is compatible with most chemicals found in the work place. Avoid strong oxidizing agents.

MATERIALS WITH WHICH SUBSTANCE IS INCOMPATIBLE: This material is compatible with chemicals generally found in the industrial work place. The product would not be compatible with water reactive materials.

HAZARDOUS POLYMERIZATION: Will not occur.

HAZARDOUS DECOMPOSITION PRODUCTS: Components may form carbon monoxide during combustion.

PART IV *Is there any other useful information about this material?*

11. TOXICOLOGICAL INFORMATION

SUSPECTED CANCER AGENT: This product's ingredients are not found on the following lists: FEDERAL OSHA 2 LIST, NTP, IARC, CAL/OSHA.

IRRITANCY OF PRODUCT: Listed below are the potential reproductive effects which may occur after exposure to this product.

Mutagenicity: While no data exist for the product, this ink is not expected to cause any fetal toxicity problems related to mutagenicity.

Teratogenicity: While no data exist for this product, this ink is not expected to cause any fetal toxicity problems related to teratogenicity.

Reproductive Toxicity: While no data exist for the product, this ink is not expected to have an adverse effect on the male or female reproductive system or to cause any fetal toxicity problems.

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE: There are no known chemical conditions which would be aggravated by exposure to this product.

Dermal Exposure: Discolors skin and may cause local irritation.

Acute Dermal - None

Ingestion Exposure: May cause gastrointestinal distress.

Acute Oral LD50 >2500 mg/kg - Rat

Inhalation Exposure: Not likely to occur, but may cause irritation.

Acute Inhalation LC50 None

RECOMMENDATIONS TO PHYSICIANS: Treat symptoms. No specific medical procedures are available.

13. DISPOSAL CONSIDERATIONS

PREPARING WASTES FOR DISPOSAL: Waste disposal must be in accordance with appropriate Federal, State, and local regulations. This chemical, if unaltered by handling, may be

disposed of by treatment at a permitted facility or as advised by your local hazardous waste regulatory authority. Discharge into a sanitary sewer or storm drain may violate local ordinance for color or solids.

EPA WASTE NUMBER: Not Applicable. This material is not a RCRA Hazardous Waste for disposal purposes.

14. TRANSPORTATION INFORMATION

THIS MATERIAL IS NOT HAZARDOUS BY THE U.S. DEPARTMENT OF TRANSPORTATION.

PROPER SHIPPING NAME: This ink is not regulated by the U.S. Department of Transportation.

HAZARD CLASS NUMBER AND DESCRIPTION: Not Applicable.

UN IDENTIFICATION NUMBER: Not Applicable.

DOT LABELS REQUIRED: Not Applicable.

PACKAGING GROUP: Not Applicable.

EMERGENCY RESPONSE GUIDE NUMBER: Not Applicable.

CTC DANGEROUS GOODS CHIPPING REGULATIONS: THIS MATERIAL IS NOT CONSIDERED A DANGEROUS GOOD.

15. REGULATORY INFORMATION

SARA REPORTING REQUIREMENTS: No component in this product is subject to the reporting requirements of Section 313 of Title III of the Superfund Amendments and Reauthorization Act.

TSCA INVENTORY STATUS: The chemicals in this compound ARE listed on the TSCA Inventory.

MARINE POLLUTANT: This product contains no chemicals which have been designated by the Department of Transportation to be Marine Pollutants in 49 CFR 172.101, Appendix B.

CALIFORNIA PROPOSITION 65: No component of this solution is on the California Proposition 65 lists.

CERCLA REPORTABLE QUANTITIES (RO): Not Applicable.

STATE REGULATORY INFORMATION: The following chemicals in this product are covered under specific State regulations:

Alaska – Designated Toxic and Hazardous Substance: None.
Pennsylvania – Hazardous Substance List: None.
California – Permissible Exposure Limits: None.

Rhode Island – Hazardous Substance List: None.
Illinois – Toxic Substance List: None.

West Virginia – Hazardous Substance List: None.
North Dakota – List of Hazardous Chemicals Reportable Quantities: None
Wisconsin – Toxic and Hazardous Substances: None.

Massachusetts – Substance List: None.
Minnesota – List of Hazardous Substances: None
Missouri – Employer Information/Toxic Substance List: None.
Florida – Substance List: None
New Jersey – Right to Know Hazardous Substance List: None.
Kansas – Section 302/313 List: None.

LABELING (Precautionary Statements): CAUTION! This material may cause skin and eye irritation. Avoid getting the ink on your skin or in your eyes. In case of exposure, wash thoroughly with water. If irritation occurs, seek medical assistance. This material will not contribute to the intensity of a fire. The product may discolor runoff water. Store containers tightly closed in a cool location. Consult Material Safety Data Sheet.

16. OTHER INFORMATION

PREPARED BY: Digital Design Inc.
67 Sand Park Drive
Cedar Grove, NJ 07009

The information contained herein is furnished without warranty of any kind. Users should consider these data only as a supplement to other information gathered by them and must make independent determinations of suitability and completeness of information from all other sources to assure proper use and disposal of these materials and the safety and health of employees and customers and the protection of the environment.