MATERIAL SAFETY DATA SHEET

For 1Shot/Chromatic® Liquid Coatings and Associated Liquid Materials

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Revision Date : 09/03/07 Version 5.3 Supercedes : All Previous

I. CHEMICAL PRODUCT IDENTIFICATION

Product Name: **Chromatic® Bulletin Colors** (including 4010021 through 4010195)

II. COMPOSITION/INFORMATION ON INGREDIENTS - *(EXPOSURE LIMITS - SEE SECTION VIII)*

INGREDIENT NAME	CAS #	%	
Stoddard Solvent	8052-41-3	<45	
Ethylbenzene	100-41-4	< 1	
1,2,4-Trimethylbenzene	95-63-6	< 5	
THE ITEMS LISTED BELOW ARE NOT CONTAINED IN ALL COLORS. SEE THE TABLE ON PAGE 2 TO DETERMINE WHICH COLORS CONTAIN THESE INGREDIENTS AND % WT.			
1,3,5-Trimethylbenzene	108-67-8	-	
Barium Sulfate	7727-43-7	-	
Benzimidazolone Compound(s)	TS16251056	-	
Benzimidazolone & Azo Compounds	TS162510583	-	
Carbon black	1333-86-4	-	
Light Aromatic Solvent Naphtha	64742-95-6	-	
Nickel Antimony Titanium Rutile	8007-18-9	-	
Solvent Naphtha (petroleum), medium aliphatic	64742-88-7	-	
Titanium dioxide	13463-67-7	-	
Xylene	1330-20-7	-	
Other	---	-	See Tables, page 2.

III. HAZARDS IDENTIFICATION

	HMIS
HEALTH	2 *
FLAMMABILITY	2
REACTIVITY	0

0 = Least 1 = Slight 2 = Moderate 3 = High 4 = Extreme

* = Chronic Health Effects

ADDITIONAL INGREDIENTS OF CHROMATIC BULLETIN COLORS -- Weight %

PRODUCT#	DENSITY LBS/GL	V.O.C.‡ LBS/GL	CARBON BLACK	TITANIUM DIOXIDE	SOLVENT NAPHTHA (PETROLEUM) MED. ALIPHATIC	XYLENE	BARIUM SULFATE	LIGHT AROMATIC SOLVENT NAPHTHA	NICKEL ANTIMIONY TITNAIUM RUTILE	1,3,5-TRIMETHYLBENZENE	BENZIMIDAZOLONE COMPOUND(S)	OTHER
4010021	7.8	3.4	< 5		< 5							
4010021F	12.2	2.9	< 5									*
4010100	9.6	3.8			< 5	< 5				< 1		*
4010101	10.0	3.1		<30	< 5							
4010101SW	10.2	2.9		<30	< 5	< 5						
4010102	9.4	3.7			< 5	< 5				< 1		*
4010104	9.2	3.3			< 5	< 5				< 1		
4010106	8.1	3.2				< 5						*
4010108	8.3	3.3			< 5	< 5		< 5		< 1		*
4010114	8.9	3.5	< 5		< 5	< 5						
4010115	8.9	3.4	< 5		< 5	< 5						
4010116	10.1	3.2		<30	< 5	< 5						
4010124	10.5	3.5		< 5	< 5	< 5	< 5	< 5		< 1		*
4010130	11.4	4.0		<15	< 5	< 5	< 5			< 1		
4010132	8.9	2.9		<10	< 5	< 5	< 5			< 1		
4010134	11.3	4.4		<10	< 5	< 5						
4010140	10.3	3.7		<10		< 5		< 5	< 5	< 1		*
4010142	9.1	3.7		< 5	< 5	< 5			< 5	< 1	<10	
4010143	8.3	3.1		< 5	< 5	< 5						
4010144	9.0	3.6			< 5	< 5			< 5	< 1	< 5	
4010148	8.4	3.3			< 5	< 5			< 5	< 1	< 5	
4010150	8.7	3.5		<10	< 5	< 5						
4010152	8.2	3.3		< 5	< 5	< 5						
4010153	8.4	3.4		<10	< 5	< 5						
4010156	8.1	3.3		< 5	< 5	< 5						*
4010158	8.4	3.2		< 5	< 5	< 5						
4010162	8.3	3.3		< 5	< 5	< 5						
4010163	8.7	3.3		<15	< 5	< 5						
4010164	8.8	3.4		<15	< 5	< 5						
4010166	8.0	3.6		<10	< 5	< 5						
4010195	9.9	2.9	< 1	<25	< 5	< 5						
Carcinogenicity: IARC			Yes	Yes	No	No	No	No	No	No	No	*
NTP			No	No	No	No	No	No	No	No	No	*
OSHA			No	No	No	No	No	No	No	No	No	*

‡ The VOC content is determined by using a percent solids basis, less water and exempt solvents, for adhesives, coatings and inks and the calculations of EPA Reference Method 24 or equivalent ASTM method approved by the executive office.

* List of Other Additional Ingredients:

PRODUCT#	OTHER INGREDIENT	CAS#	%	CARCINOGENICITY
4010021F	Calcium Carbonate	471-34-1	<40	No
	Crystalline Silica	14808-60-7	< 1	Yes (IARC, NTP only)
	Talc	14807-96-6	<10	No
4010100	Barium Chloride	10361-37-2	< 5	No
4010102	Barium Chloride	10361-37-2	< 5	No
4010106	Calcium Carbonate	471-34-1	<40	No
	Linseed Oil	8001-26-1	< 5	No
4010108	Crystalline Silica	14808-60-7	< 1	Yes (IARC, NTP only)
	Iron Oxide	1309-37-1	< 5	No
4010124	Kaolin	1332-58-7	< 5	No
4010140	Calcium Carbonate	471-34-1	<40	No
	Petroleum Spirits	8032-32-4	< 5	No
	Benzimidizolone & Azo Compounds	TS162510583	< 5	No
4010156	Naphtha, Hydrodesulfurized Heavy	64742-82-1	< 5	No

Routes of Entry: Inhalation, Absorption.

Medical Conditions Aggravated: Eye disease, Skin disease including eczema and sensitization, Kidney disease, Liver disease, Lung disease.

Immediate (Acute) Health Effects:

Inhalation: Can cause moderate respiratory irritation, dizziness, weakness, fatigue, nausea and headache.

Skin Contact: Can cause minor skin irritation, defatting, and dermatitis.

Eye Contact: Can cause moderate irritation, tearing and reddening, but not likely to permanently injure eye tissue.

Skin Absorption: Skin absorption may be a significant source of exposure.

Ingestion: Harmful if swallowed. May cause systemic poisoning. Can cause abdominal discomfort, nausea, vomiting and diarrhea. Aspiration of material into the lungs can cause chemical pneumonitis.

Target Organ Acute Toxicity: Eyes, Skin, Respiratory System, Kidneys, Nervous System, Liver, Thyroid, Pituitary, Testes.

Long-Term (Chronic) Health Effects:

Inhalation: Upon prolonged and/or repeated exposure, can cause moderate respiratory irritation, dizziness, weakness, fatigue, nausea and headache.

Skin Contact: Upon prolonged or repeated contact, can cause moderate skin irritation, defatting, and dermatitis. Not likely to cause permanent damage.

Eye Contact: Upon prolonged or repeated contact, can cause moderate irritation, tearing and reddening, but not likely to permanently injure eye tissue.

Skin Absorption: Upon prolonged or repeated exposure, harmful if absorbed through the skin. May cause severe irritation and systemic damage.

Carcinogenicity: See Table on page 2.

Target Organ Chronic Toxicity: Nervous System, Eyes, Skin, Respiratory System, Kidneys, Liver, Pituitary, Testes.

NOTICE - Reports have associated repeated and prolonged occupational overexposure to solvents with brain and nervous system damage. Intentional misuse by deliberately concentrating and inhaling the contents may be harmful or fatal.

Lifetime inhalation exposure of rats and mice to high concentrations of ethylbenzene (750 ppm) resulted in increases in certain types of cancer, including kidney, lung and liver tumors. Testicular adenomas were increased as were thyroid effects in rats at 750 ppm. Pituitary effects were observed in female mice at 250 ppm. These effects were absent when exposure was below 75 ppm ethylbenzene. The study does not address the relevance of these results to humans.

IARC has recently re-evaluated titanium dioxide as possibly carcinogenic to humans (Group 2B) based on animal studies. However, human studies available to date do not suggest that occupational exposure to titanium dioxide increases cancer risk. The ACGIH classifies titanium dioxide as A4 (not classifiable as a human carcinogen). NTP does not classify it as carcinogenic. IARC's evaluation shows inadequate evidence of carcinogenicity in humans, but sufficient evidence of carcinogenicity in experimental animals. The evidence shows that high concentrations of powdered and ultrafine titanium dioxide dust caused respiratory tract cancer in rats exposed by either natural inhalation or direct introduction into the lungs. However, the same results are observed in people working in dusty environments. Therefore, IARC extended this idea to workers with exposures to titanium dioxide dust, if there are insufficient dust control measures in place. Based on the IARC decision, Canadian officials have agreed that titanium dioxide is classifiable as WHMIS D2A (carcinogen), and that it is not necessary to wait for release of the full monograph. OSHA requires the status on US MSDSs to change within 90 days of publication in the IARC monograph volume 93.

Products 4010021F and 4010108 contain Crystalline Silica (see List of Other Additional Ingredients, page 2): Cutting, sanding or grinding dried or cured material may release particles of crystalline silica (quartz). Exposure to airborne particles may cause lung damage including a risk of cancer. Chronic exposure may result in chest pain, difficulty breathing, lung damage and silicosis. (Silicosis is the permanent deposition of silica in lung tissue that results in lung damage.) There may exist a relationship between silicosis and certain cancers.

Some products contain pigments which may become a dust nuisance when removed by abrasive blasting, sanding or grinding. See Section II.

IV. FIRST AID

Inhalation: Remove to fresh air. If breathing is difficult, have a trained individual administer oxygen. Seek medical attention if symptoms persist.

Eyes: Immediately flush eyes with plenty of luke warm water for at least 20 minutes retracting eyelids often. Tilt the head to prevent chemical from transferring to the uncontaminated eye. Get immediate medical attention and monitor the eye daily as advised by your physician.

Skin Contact: Wash with soap and water. Remove contaminated clothing and launder. Get medical attention if irritation develops or persists.

Ingestion: Seek medical advice immediately. Provide ingredients information from Section II of this MSDS to the medical care provider. Contact your local Poison Control Center (listed in the telephone book), or dial the local "Emergency" (911) number for additional information. Do not induce vomiting unless instructed to do so by a physician or other competent medical personnel. Never give anything by mouth to an unconscious person.

V. FIRE FIGHTING MEASURES

Flammability Summary: **Combustible**

Flash Point: 41 ° C; 106 ° F

Autoignition Temperature: 226 ° C; 439 ° F

Lower Flammable/Explosive Limit, % in air: 1.0 **Upper Flammable/Explosive Limit, % in air:** 6.8

Fire Hazards: Vapors may be ignited by sparks, flames or other sources of ignition if material is above the flash point giving rise to a fire (Class B). Vapors are heavier than air and may travel to a source of ignition and flash back. This product, when dried or cured, may support combustion when subjected to sources of ignition or heat in sufficient amount.

Extinguishing Media: Use alcohol resistant foam, carbon dioxide, dry chemical, or water spray when fighting fires. Water or foam may cause frothing if liquid is burning but it still may be a useful extinguishing agent if carefully applied to the fire. Do not direct a water stream directly into the hot burning liquid.

Fire Fighting Instructions: Do not enter fire area without proper protection including self-contained breathing apparatus and full protective equipment. Fight fire from a safe distance and a protected location due to the potential of hazardous vapors and decomposition products. Flammable component(s) of this material may be lighter than water and burn while floating on the surface.

Hazardous Combustion Products: Carbon dioxide, Carbon monoxide,nitrogen containing gases.

VI. ACCIDENTAL RELEASE MEASURES

Health Consideration for Spill Response: Exposure to the spilled material may be irritating or harmful. Follow personal protective equipment recommendations found in Section VIII of this MSDS. Additional precautions may be necessary based on special circumstances created by the spill including: the material spilled, the quantity of the spill, and the area in which the spill occurred. Also consider the expertise of employees in the area responding to the spill. Evaporation of volatile substances can lead to the displacement of air creating an environment that can cause asphyxiation.

Spill Mitigation Procedures:

General Methods: Prevent the spread of any spill to minimize harm to health and the environment if safe to do so. Wear proper personal protective equipment following the recommendations of Section VIII. Dike with suitable absorbent material like granulated clay. Gather and store in a sealed container pending a waste disposal evaluation.

Air Release: Ventilate the area by opening door and/or turning on fans and blowers.

Water Release: Avoid runoff into storm sewers and ditches that lead to waterways. If runoff occurs, notify proper authorities as required, that a spill has occurred.

Land Spills: Avoid runoff into storm sewers and ditches that lead to waterways.

VII. HANDLING AND STORAGE

Handling: Harmful or irritating; avoid overexposure to the material. Use only in a well ventilated area. Use spark-proof tools and explosion-proof equipment.

Storage: Store in a cool dry place. Isolate from incompatible materials. Keep away from sources of ignition.

VIII. ENGINEERING CONTROLS, PERSONAL PROTECTIVE EQUIPMENT AND EXPOSURE LIMITS

Engineering Controls: Local exhaust ventilation or other engineering controls are normally required when handling or using this product to avoid overexposure. See table at the end of this Section VIII below for exposure limits.

Protective Equipment:

Respiratory Tract: If general or local exhaust ventilation is not available or sufficient to reduce exposure to below acceptable levels, then respiratory protection is required to avoid overexposure when handling this product.

Eyes: Wear safety glasses with side shields when handling this product. When the possibility exists for eye contact with splashing or spraying liquid, or airborne material, wear additional eye protection such as chemical splash goggles and/or face shield. Do not wear contact lenses. Have an eye wash station available.

Skin: Not normally considered a significant skin irritant. Where use can result in skin contact, practice good personal hygiene and wear a barrier cream and/or impervious gloves. Wash hands and other exposed areas with mild soap and water before eating, drinking, and when leaving work.

Protective Clothing: Wear chemically resistant gloves and apron. (Consult your safety equipment supplier).

CHEMICAL NAME	CAS #	ACGIH TLV	OSHA PEL	IDLH
1,2,4-Trimethylbenzene	95-63-6	No TLV	No PEL established	Not determined.
1,3,5-Trimethylbenzene	108-67-8	No TLV	No PEL established	Not determined.
Aluminum	7429-90-5	10 mg/m3 TWA (metal dust)	15 mg/m3 TWA (total dust); 5 mg/m3 TWA (respirable fraction)	Not determined.
Barium Sulfate	7727-43-7	10 mg/m3 TWA (The value is for the total dust containing no asbestos and <1% crystalline silica)	15 mg/m3 TWA (total dust); 5 mg/m3 TWA (respirable fraction)	Not determined.
Calcium carbonate	471-34-1	No TLV	No PEL established	Not determined.
Carbon black	1333-86-4	3.5 mg/m3 TWA	3.5 mg/m3 TWA	1750 mg/m3 IDLH
Copper	7440-50-8	fume: 0.2 mg/m3 TWA; dusts and mists, as Cu: 1 mg/m3 TWA	0.1 mg/m3 TWA (fume); 1 mg/m3 TWA (dusts and mists)	dusts & mists as Cu: 100 mg/m3 IDLH
Crystalline Silica	14464-46-1	0.05 MG/M3 TWA (THIS TLV IS FOR THE RESPIRABLE FRACTION OF DUST)	SEE TABLE Z-3	Not determined.
Ethylbenzene	100-41-4	100 ppm TWA 125 ppm STEL	100 ppm TWA; 435 mg/m3 TWA	800 ppm IDLH (10 percent lower explosive limit)
Iron oxide	1309-37-1	as Fe: 5 mg/m3 TWA (welding fumes, dust, total particulate (N.O.C.))	10 mg/m3 TWA	as Fe: 2500 mg/m3 IDLH
Kaolin	1332-58-7	respirable fraction: 2 mg/m3 TWA (The value is for particulate matter containing no asbestos and < 1% crystalline silica)	15 mg/m3 TWA (total dust); 5 mg/m3 TWA (respirable fraction)	Not determined.
Light Aromatic Solvent Naphtha	64742-95-6	No TLV	No PEL established	Not determined.
Nickel Antimony Titanium Rutile	8007-18-9	0.2 mg/m3 (inhalable fraction of insoluble nickel compound); As Sb: 0.5 mg/m3	As Ni: 1 mg/m3 8hr TWA; As Sb: 0.5 mg/m3 8hr TWA	Not determined.
Paraffinic solvent	64742-47-8	No TLV	No PEL established	Not determined.
Titanium dioxide	13463-67-7	10 mg/m3 TWA	15 mg/m3 TWA (total dust)	Potential NIOSH carcinogen.
Zinc	7440-66-6	No TLV	No PEL established	Not determined.

IX. PHYSICAL DATA

Appearance: Liquid.
pH: N/A
Octanol/Water Coeff: Not Determined.
Solubility in Water: Minimal.
Vapor Density: Heavier than air. Vapors that evolve from this product will tend to settle and accumulate near the floor.
Evaporation Rate: Slower than n-Butyl Acetate.

Density See Table on page 2.
V.O.C. See Table on page 2.

Initial Boiling Point 154 ° C; 309 ° F
Initial Freezing Point N/A

X. STABILITY AND REACTIVITY

Stability Information: Stable under normal conditions.
Conditions to Avoid: Temperatures above flash point in combination with sparks, open flames, or other sources of ignition.
Chemical Incompatibility: Strong oxidizing agents.
Hazardous Decomposition Products: Carbon dioxide, Carbon monoxide,nitrogen containing gases.

XI. TOXICOLOGICAL INFORMATION

Chemical Name	LD50/LC50
Benzene, 1,2,4-trimethyl-	Inhalation LC50 Rat : 18 gm/m3/4H; Oral LD50 Rat : 5 gm/kg
Benzene, ethyl-	Oral LD50 Rat : 3500 mg/kg; Dermal LD50 Rabbit : 17800 uL/kg
Carbon black	Oral LD50 Rat : >15400 mg/kg; Dermal LD50 Rabbit : >3 gm/kg
Carbonic acid, calcium salt (1:1)	Oral LD50 Rat : 6450 mg/kg

XII. ECOLOGICAL INFORMATION

Overview: Care should be taken to minimize releases of any industrial chemicals to the environment.

XIII. DISPOSAL CONSIDERATIONS

Waste Description for Spent Product: Spent or discarded material is a hazardous waste. The waste is ignitable.
Disposal Methods: Information in this MSDS is provided only as a guide. Consult with competent authority to determine proper waste disposal procedures. Clean up and dispose of waste and clean-up materials in accordance with all federal, state, and local environmental regulations.

XIV. TRANSPORTATION INFORMATION

Agency	Basic Description and Label
DOT	DOT by Land Transport: Not Regulated; DOT by Air and IATA (all modes): Paint, 3, UN1263, PG III, Label Required: Flammable Liquid

XV. REGULATORY INFORMATION

Regulation

SARA 313 Reportable : Ethyl benzene, 1,2,4-Trimethylbenzene, Barium Compounds, Xylene (mixed isomers), Nickel Compound

TSCA Inventory : All components of this product are listed in, or exempt from, the TSCA 8(b) Inventory.

M.S.D.S. Reportable HAP(s) : Ethyl benzene, Xylenes (isomers and mixture).

California Proposition 65 : The following statement is made in order to comply with the California Safe Drinking Water and Toxic Enforcement Act of 1986 - Proposition 65: "WARNING: This product contains chemical(s) known to the State of California to cause cancer and birth defects or other reproductive harm."

XVI. ADDITIONAL INFORMATION

Major References: VENDOR'S MSDS's, PAINT & COATINGS HANDBOOK, EPA's LIST OF LISTS, AND OTHER PUBLISHED MATERIALS.