



AKZO
AKZO COATINGS
CHROMATIC SIGN FINISHES

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**MATERIAL
SAFETY
DATA
SHEETS**

This MSDS booklet replaces
all previously dated material.

NOVEMBER 1992

*3295 River Exchange Drive
Suite 500
Norcross, GA 30092*

How To Use The Updated Condensed Version Of Material Safety Data Sheets:

This refers specifically to data on subsequent pages. There are three pages of information regarding the complete range of products. Following is two pages of Hazardous Ingredients with data specific to individual hazardous substances in each product. Next is Health Hazard Data; these pages list precautionary statements by number as given on the data pages. The bulk of the booklet consists of data pages containing information specific to each product or group of products. The last item is an MSDS Glossary of terms used in this booklet.

Section I - Product Classes

Lists all product classes that may be referred to in the data pages under the column heading "Products". This data page column carries the product name, Akzo/Chromatic item number (as shown on the product container), former Chromatic item number and the manufacturing code.

Section II - Hazardous Ingredients

This list is a compilation of hazardous ingredients in each product. Hazardous ingredients are numbered and referred to in the data pages under the column "% by Weight Hazardous Ingredients". Information included on this list is CAS Number, TLV, PEL, and vapor pressure. Most ingredients in the data pages show a range of concentrations. Those numbers that give an exact percentage with an asterisk following the % sign are SARA reportable chemicals. Items marked under the "Calif Prop 65" column are known to the state of California to cause cancer, birth defects or other reproductive harm.

Section III - Physical Data

In all cases the evaporation rate and vapor density will remain the same as shown on the "general" identification page. Information such as WPG, Boiling Range, % Vol may be found on the data pages. VOC information is not included in this booklet as the VOC is not, strictly, Health and Safety information. VOC and exact vapor pressure information for individual products will soon be available in a separate booklet that may be obtained from Akzo/Chromatic Order Entry Department.

Section IV - Fire and Explosion Data

This section lists handling procedures for fire and explosion prevention. Data on LEL, NFPA flammability, and Flash Point for individual products may be found on the data pages.

Section V - Reactivity Data For All Products

This section deals with stability and decomposition products.

Section VI - Health Hazard Data For All Products

This section deals with general information. More detailed information may be found on the data page. This column on the data pages is divided into three parts: "Acute, Chronic and Additional Precautions". Under each sub-column are numbers that refer to the precautionary statements listed under this section.

Section VII - Spill or Leak Precautions For All Products

This section deals with methods of protecting against accidental releases and how to deal with the consequences of a release.

Section VIII - Safe Handling and Use Information

This section deals with personal protective equipment.

Section IX - Special Precautions For All Products

MSDS Glossary - Definitions of terms and abbreviations used in this booklet.

MATERIAL SAFETY DATA SHEETS

Date of Preparation: September 1992

Section I

Manufacturer's Name:

~~Akzo Coatings Inc.~~
1845 Maxwell Street
Troy, MI 48084

Emergency Telephone:

Chemtrec (800) 424-9300
8am-5pm (313) 637-0400
5pm-8am (313) 637-5210

Product Classes: ~~Paint or Paint-Related Material~~

Bulletin Colors

Varnish, Clear Coatings

Fluorescent Bulletin Colors

One-Coat Lettering Enamels

Background Enamels

Industrial Maintenance Enamels

Primers & Block Outs

Vinyl Coatings

Gold Size

Art Poster Colors

Industrial Enamels

Japan Colors

Pictorial Oil Colors

Flow Enhancer & Reducers

Additives, Driers

Section II Hazardous Ingredients

This section includes CAS Number, TLV, PEL, vapor pressure, SARA and California Proposition 65 data.

Section III Physical Data

Evaporation Rate: Slower than ether

Vapor Pressure: Heavier than air

Physical data on boiling range, weight per gallon and percent volatile by volume can be found on the data sheets by product class.

Section IV Fire and Explosion Hazard Data

Extinguishing Media: Foam, carbon dioxide, dry chemicals are desirable. Water spray is less effective.

Unusual Fire and Explosion Hazards: Keep containers tightly closed, isolate from heat, electrical equipment, sparks, and open flame. Closed containers may explode when exposed to extreme heat. Application to hot surfaces requires special precautions. During emergency conditions, overexposure to decomposition products may cause a health hazard. Symptoms may not be immediately apparent. Obtain medical attention.

Special Fire Fighting Procedures: Water should be used to cool containers exposed to fire. Fire fighting personnel should wear self-contained breathing apparatus.

The data on flash point, LEL and NFPA flammability class can be found on the data sheets.

Section V Reactivity Data

Stability: Stable

Incompatibility (materials to avoid): None reasonably foreseeable

Hazardous Decomposition Products: Carbon monoxide, carbon dioxide, oxides of nitrogen and smoke

Hazardous Polymerization: Will not occur

Conditions to Avoid: Not applicable

Section VI Health Hazard Data

Emergency First Aid Procedures:

Inhalation: Move to fresh air, give artificial respiration if necessary.

Skin Contact: Wash with soap and water; do not use organic solvents.

Eye contact: Flush with water for at least 15 minutes, consult a physician.

Ingestion: Drink one or two glasses of water to dilute. Do not induce vomiting. Consult a physician or poison control center immediately. Treat symptomatically.

Medical Conditions Prone to Aggravation: None expected.

Data on acute and chronic health hazards can be found on the data sheets.

Threshold Limit Value: See expanded Section II.

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

Section VII Spill or Leak Procedures

Steps To Be Taken In Case Material Is Released Or Spilled: Refer to protective measures listed in Sections IV, V, VI, VIII, or IX. Remove all sources of ignition. Avoid breathing vapors, ventilate area, remove with inert absorbent using non-sparking tools.

Waste Disposal Method: Dispose of in accordance with federal, state, and local pollution requirements. Rags, filters, paint suits, empty cans, etc., contaminated with product may be hazardous waste. Determine whether contaminated products are hazardous before disposal and dispose of as appropriate.

Section VIII Safe Handling and Use Information

Respiratory Protection: Adequate ventilation is required. Use NIOSH/MSHA approved respirator device. See your safety equipment supplier for evaluation and recommendation. In confined areas use NIOSH/MSHA approved airline respirator or hood.

Ventilation: Provide sufficient ventilation to keep vapor concentration below the given TLV and PEL. For force dried finishes, exhaust vapors which are emitted during heating. Remove decomposition products formed during welding or flame cutting of surfaces coated with this product.

Protective Gloves: Required for prolonged or repeated contact. Refer to safety equipment supplier for effective glove recommendations.

Eye Protection: Use safety eye goggles designed to protect against splash of liquids when spraying, or using open liquids such as mixing or pouring.

Other Protective Equipment: Eye bath and shower should be available. Use chemical resistant apron, boots or other clothing if needed to avoid repeated or frequent skin contact. Liquid may penetrate clothing, shoes and leather causing delayed irritation.

Hygienic Practices: Wash hands before eating, smoking or using the washroom, Launder clothing before reuse.

**Section IX
Special Precautions**

Precautions To Be Taken In Handling And Storage: Store containers out of sun and away from heat, sparks and open flames. Store plastic containers of flammable liquids inside closed, approved containers or safety cabinets. Close all containers after each use. Consult NFPA and local codes for additional storage requirements.

Other Precautions: Do not take internally. Use approved bonding and grounding procedures when transferring liquids. Observe label precautions. Keep closures tight and container upright to prevent leakage. Never use pressure to empty container - drum is not a pressure vessel. Avoid breathing sanding dust. Do not weld or flame cut on empty drum.

DO NOT HANDLE UNTIL THE MANUFACTURER'S SAFETY PRECAUTIONS HAVE BEEN READ AND UNDERSTOOD. REGULATIONS REQUIRE THAT ALL EMPLOYEES BE TRAINED ON MATERIAL SAFETY DATA SHEETS FOR ALL PRODUCTS WITH WHICH THEY COME IN CONTACT.

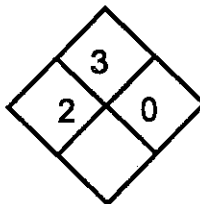
Products which contain chromate pigments must receive special attention. If subject to spray application, engineering and administrative controls must be instituted to maintain an exposure level below 0.05 mg/m^3 . The use of a respirator is necessary.

Products which contain lead pigments must receive special attention. Use NIOSH/MSHA approved respirator with HEPA Dust Cartridges for concentrations below 0.05 mg/m^3 as Pb. For concentrations above 0.05 mg/m^3 as Pb, use full face respirator or air supplied respirator. See OSHA Standard 29 CFR 1910.1025. Launder clothing before reuse.

In cases where no monitoring for airborne contaminants has been carried out, assume maximum exposure and use paint suit, goggles, gloves, and air supplied respiratory equipment.

This information is furnished without warranty, expressed or implied, except that it is accurate to the best knowledge of Akzo Coatings Inc. The data on this sheet applies only to the specific material designated herein. Akzo Coatings Inc. assumes no legal responsibility for use or reliance upon this data.

NFPA 704



SECTION II - HAZARDOUS INGREDIENTS

Hazardous Ingredients	CAS No.	Vapor Press	TLV-ppm	TWA mg/m ³	PEL ppm	TWA mg/m ³	SARA 313 Note 1	Calif Prop65 Note 2
1. Diethylene Glycol Monoethyl Ether	111-90-0	0.1	NE					
2. Aliphatic Hydrocarbon Solvent	64741-41-9	<10.0	-	-	500	-		
3. Aromatic Petroleum 100	64742-95-6	3.0	50	245	500	2000		
4. Calcium Carbonate	1317-65-3	NA	-	5	-	5		
5. Kaolin	1332-58-7	NA	-	-	-	10		
6. Iron Oxide Red	1309-37-1	NA	-	-	-	10		
7. Ethylbenzene	100-41-4	10.0	100	434	100	435	x	
8. Quartz Crystalline Silica	14808-60-7	NA	-	0.1	-	0.1		x
9. Carbon Black	1333-86-4	NA	-	3.5	-	3.5		
10. Mica	12003-38-2	NA	-	3	-	-		
11. Organic Lead Drier	000	NA	as Pb	0.15	-	0.05	x	x
12. Modified Calcium Carbonate	000	NA	-	10	-	-		
13. Hydrated Iron Oxide	20344-49-4	NA	-	-	-	10		
14. Manganese Resinate	9008-34-8	NA	NE					
15. Aromatic Petroleum 150	64742-94-5	1.0	50	-	-	-		
16. Lead Sulfate/Chromate	1344-37-2	NA	-	0.01	-	-	x	x
17. Lead Molybdate/Chromate	12656-85-8	NA	-	0.01	-	-	x	x
18. Light Petroleum Distillate	64742-47-8	2.0	-	-	400	1600		
19. VM & P Naptha	8032-32-4	38.0	300	1370	300	1350		
20. Propylene Glycol Monomethyl Ether Acetate	108-65-6	3.7	NE					
21. Stoddard Solvent	8052-41-3	2.0	100	525	100	525		
22. Talc	14807-96-6	NA	-	2	-	2		
23. Titanium Dioxide	13463-67-7	NA	-	10	-	10		
24. Xylene	1330-20-7	9.5	100	434	100	435	x	
25. Lead Chromate	7758-97-6	NA	-	0.01	-	-	x	x
26. N-methyl-2-Pyrollidone	872-50-4	0.3	100*	-	5*	-		
27. Barium Sulfate	7727-43-7	NA	-	5	-	5		
28. Amorphous Silica	7631-86-9	NA	-	-	-	6		
29. Organophilic Clay	68953-58-2	NA	-	10	-	10		
30. Organic Zirconium Drier	000	NA	-	-	-	5		
31. 2-Butoxyethanol	111-76-2	0.6	-	-	25	120	x	
32. Dibutyl Phthalate	84-74-2	NA	-	5	-	5	x	
33. Aluminum Flake	7429-90-5	NA	-	-	-	10		
34. Calcium Barium Phosphosilicate	66402-68-4	NA	-	-	-	15		
35. Zinc Oxide	1314-13-2	NA	-	5	-	5	x	

Hazardous Ingredients	CAS No.	Vapor Press	TLV-ppm	TWA mg/m ³	PEL ppm	TWA mg/m ³	SARA 313 Note 1	Calif Prop65 Note 2
36. Copper as Cu	7440-50-8	NA	-	-	-	0.1	x	
37. Organic Zinc Drier as Zn	7440-66-6	NA	-	5	-	-		
38. Mineral Spirits	64742-88-7	2.0	-	100	-	500		
39. C. I. Basic Red 1	989-38-8	NA	NE					
40. Ultraviolet Absorber	3864-99-1	NA	NE					
41. Manganese Carboxylate	000	NA	-	5	-	5		
42. Cobalt Carboxylate	000	NA	-	5	-	5		
43. Ethyl Alcohol	64-17-5	44.0	1000	1880	1000	1900		
44. Cadmium Sulfoselenide 108	58339-34-7	NA	-	0.05	-	0.20	x	x
45. Cadmium Sulfide	1306-23-6	NA	-	0.05	-	0.10	x	x
46. Cadmium Sulfide/Zinc Sulfide	12442-27-2	NA	-	0.05	-	0.10	x	x
47. Cadmium Sulfoselenide 20	12656-57-4	NA	-	0.05	-	0.20	x	x
48. Cobalt Aluminate Blue Spinel as Co	1345-16-0	NA	-	0.05	-	0.05	x	
49. Propylene Glycol	57-55-6	0.1	-	-	-	-		
50. Styrene	100-42-5	4.5	50	213	-	-	x	
51. Polypropylene	9003-07-0	NA	10	-	-	-		
52. Paraffin Wax	8002-74-2	NA	-	2	-	2		

PEL TWA source: 29CFR1910-1000

TLV TWA source: American Conference of Governmental Industrial Hygienists

* - Manufacturer's recommended exposure limit

NA - not applicable, these chemicals do not vaporize at ambient temperatures.

NE - no exposure limits established by government agencies or manufacturer.

Note 1: If ingredient is indicated by an "x" in the SARA 313 column, it contains a chemical which is subject to the requirements of Section 313 of the Emergency Planning and Community Right-to-Know Act of 1986 (EPCRA). You may be required to submit this MSDS to state and local emergency response agencies (SERC & LEPC) and to your local fire department. Also, you may be affected by other sections of this law, depending on the chemicals and amounts that you inventory at your location. To learn more about your responsibilities call the EPA hotline 800-535-0202.

Note 2: If ingredient is indicated by an "x" in the Prop 65 column, it contains a chemical which is known to the state of California to cause cancer or reproductive toxicity.

Section VI - Health Hazard Data

The following hazards have been reported to be associated with individual components of these products. These hazards may not all be associated with the finished product.

Acute:

1. Excessive vapor concentration in air, especially in confined spaces, may cause asphyxiation.
2. Excessive inhalation of vapors can cause nasal, throat, and respiratory irritation, dizziness, weakness, fatigue, nausea, headache and possible unconsciousness.
3. Sanding dust or dry spray may cause irritation to the respiratory system.
4. Eye contact with liquid, vapor or spray mist causes irritation, redness, tearing, blurred vision, and a sensation of seeing halos around lights.
5. Dry dust may cause mechanical eye irritation.
6. Prolonged skin contact may lead to extraction of natural oils with resultant dry skin, cracking, irritation and dermatitis.
7. Dust or spray mist may cause skin irritation.
8. Accumulations of sanding dust or dry spray on skin may lead to extraction of natural oils with resultant skin irritation.
9. Swallowing may cause gastrointestinal irritation, nausea, vomiting and diarrhea.
10. Vapors may cause severe eye irritation, redness, tearing, and blurred vision.
11. Excessive inhalation of zinc oxide generated from welding fumes produces symptoms known as "zinc shakes", an acute, self limiting condition without recognized complications or sequelae.
12. Direct inhalation of spray mist causes irritation of mucous membranes and pulmonary fibrosis.
13. Swallowing may cause intoxication characterized by uncoordination, dizziness, drowsiness, headache, nausea, mental confusion, possibly slurred speech and stupor, depending upon the quantity ingested.
14. Excessive inhalation of sanding dust or dry spray may result in pulmonary and kidney dysfunction.

Chronic:

- 1A. Health studies have shown that many petroleum hydrocarbons pose potential human health risks which may vary from person to person. As a precaution, exposure to liquids and vapors should be minimized.
- 2A. Repeated inhalation of sanding dust or spray mist may cause lung damage.
- 3A. Prolonged and continuous exposure to an excessive concentration of dust of any kind may have an adverse pulmonary effect on some people.
- 4A. Crystalline silica is listed by IARC as probably carcinogenic to humans (Group 2A) and NTP as a reasonably anticipated carcinogen.
- 5A. Lead from lead chromate is listed by ACGIH as a suspected human carcinogen (A2) and by IARC as possibly carcinogenic to humans (Group 1).
- 6A. Hexavalent chromium from chromate compounds is listed by ACGIH as a suspected carcinogen to humans (A2), NTP as a known carcinogen and IARC as being carcinogenic to humans (Group 1).
- 7A. Repeated exposure to sanding dust, spray mist or unwashed hands may cause birth defects.
- 8A. Repeated exposure to sanding dust, spray mist or unwashed hands may cause kidney, nervous system and blood damage and lead poisoning.
- 9A. Repeated prolonged inhalation of vapor or spray mist may cause liver and kidney damage.
- 10A. Repeated inhalation of vapor or spray mist may cause cardiac disorders.
- 11A. Repeated inhalation of vapor or spray mist may cause red blood cell and leukocyte disorders which may result in an anemic condition.
- 12A. Repeated inhalation of sanding dust, spray mist or welding fume may cause pneumonia or central nervous system disorders.
- 13A. Prolonged or continuous inhalation of vapors may cause blood cell damage.
- 14A. This product contains less than 0.1% formaldehyde. Vapors may contain formaldehyde in excess of ACGIH TLV (0.3 ppm). Formaldehyde is an animal carcinogen and is a suspected human carcinogen.
- 15A. Cadmium and cadmium compounds are listed by NTP as reasonably anticipated to be carcinogenic and by IARC as probably carcinogenic to humans (Group 2A).

Additional Precautions:

- 1B. Contains hexavalent chromium pigments. If subject to spray applications, engineering and administrative controls must be instituted to maintain an exposure level below 0.05 mg/m^3 . The use of a respirator is required.
- 2B. Contains lead. Use NIOSH/MSHA approved respirator with HEPA dust cartridges for concentrations below 0.05 mg/m^3 as Pb. For concentrations above 0.05 mg/m^3 as Pb, use full face respirator or air supplied respirator. Launder clothing before reuse.

FLOW ENHANCER AND REDUCERS

Product Name Item Number Manuf. Code	WPG	FP	LEL	Boiling Range	NFPA Flam.	% by weight Hazardous Ingredients	Health	Hazard	Data	% Vol
							Acute	Chronic	Add'l Prec.	
Chromaflo 430-3300 RFLO 10AHY33467	7.5	105F 41C	1.0	350-380F	II	15)70-85%	1,2,4 6,9	1A	None	75
Chromasolv HiT 430-3301 RHITEMP 10AHY33466	7.4	90F 32C	0.9	311-380F	II	3)45-60% 15)50-65%	1,2,4 6,9	1A	None	100
Chromasolv LowT 430-3302 RLOWTEMP 10AHY33465	6.9	105F 41C	0.6	277-490F	IC	2)10-25% 7)10.1%* 18)35-50% 24)42.8%*	1,2,4 6,9	1A,9A 10A 11A	None	100
055- Edge 431-1001 R1001 10AHY33483	6.8	105F 41C	1.0	300-385F	II	21)75-90%	1,2,4 6,9	1A	None	80
Splash Transfer 470-4700 Splash ** 10AHW33562	8.3	NA	NA	212F	NA	None	None	None	None	99

ADDITIVES, DRIERS

Product Name Item Number Manuf. Code	WPG	FP	LEL	Boiling Range	NFPA Flam.	% by weight Hazardous Ingredients	Health	Hazard	Data	% Vol
							Acute	Chronic	Add'l Prec.	
Raw Linseed Oil 432-0005 POCRLO ** 10AHO33564	7.7	>200F >93C	0.6	999F	IIIB	None	None	None	None	0
Boiled Linseed Oil 432-0007 POCBLO ** 10AHO33563	7.8	>200F >93C	0.6	999F	IIIB	None	None	None	None	0
Jones' Cream 432-2001 V2001 10AHK33592	7.5	105F 41C	0.6	171- 490F	II	2)10-25% 43)<5% 8)<0.5% 51)<5% 18)30-45% 52)<5% 29)<5%	1-9,13	1A-4A	None	50
Japan Drier 432-0009 VJD 10AHK33586	6.7	105F 41C	0.6	300- 490F	II	2)20-35% 41)2.1%* 18)65-80% 42)1.3%* 21)<5% 30)<5%	1,2,4 6,9	1A,12A	None	94

* SARA 313

** Not DOT Regulated

MSDS GLOSSARY

- **ACGIH** - American Conference of Governmental Industrial Hygienists. Establishes recommended exposure limits for chemical substances. Publishes Threshold Limit Values (TLV).
- **Acute Effect** - Adverse effect on a human or animal that has severe symptoms developing rapidly, and quickly coming to a crisis.
- **Acute Toxicity** - Effects resulting from a single dose or exposure.
- **Asphyxiation** - Death caused by suffocation, lack of oxygen caused by a gas or vapor.
- **CAS No.** - Chemical Abstract Services Number - A number specific to a chemical or mixture.
- **29 CFR Part 1910** - Code of Federal Regulations Title 29 Part 1910 is a compilation of federal regulations relating to the Occupational Safety and Health Administration. Part 1910 Sections 1000 and 1025 deal with limits for air contaminants.
- **Carcinogen** - A substance capable of causing cancer.
- **Chronic Effect** - An adverse effect on a human or animal, with symptoms that develop slowly, over a long period of time, or that recur frequently.
- **Chronic Toxicity** - Adverse effects from repeated doses or overexposure.
- **Flash Point** - The minimum temperature at which a liquid gives off vapor in sufficient concentration to ignite when exposed to an ignition source.
- **Health Hazard** - A substance in which it has been established that acute or chronic effects may occur to those exposed.
- **IARC** - International Agency for Research on Cancer.
- **Irritation** - A chemical, which is not corrosive, causes a reversible inflammatory effect on living tissue at the site of contact.
- **LEL** - Lower explosion limit - The lowest concentration of vapor that will produce a flash fire when an ignition source is present.
- **mg/m³** - Milligrams per cubic meter concentration.
- **MSHA** - Mine Safety and Health Administration.
- **NIOSH** - National Institute for Occupational Safety and Health. NIOSH evaluates medical, biological, engineering, chemical, trade and other information relevant to hazards and recommends preventive measures to reduce or eliminate adverse health and safety effects from these hazards.
- **NFPA Flam** - National Fire Protection Association flammability rating.
- **Non-sparking Tools** - Tools which are made from beryllium-copper, aluminum or bronze greatly reduce the possibility of igniting dusts, gases, or flammable liquid vapors. These tools emit some sparks, but the low heat content of the sparks greatly reduces the probability of ignitions.
- **NTP** - National Toxicity Program.
- **PEL** - Permissible Exposure Limit - Occupational exposure limit established by OSHA. Time weighted average limit or maximum concentration exposure limit.
- **ppm** - Parts per million concentration.
- **% VOL** - Volatile volume percentage of a product or what part of a substance will evaporate.
- **Physical Hazard** - Combustible, flammable, explosive, unstable, pyrophoric (ignites spontaneously in air at 13F or below).
- **SARA** - Superfund Amendments and Reauthorization Act - Certain chemicals defined as toxic are reported under various SARA Titles during each year. This includes releases and inventories.
- **Sensitization** - Causing a substantial proportion of people or animals exposed to develop an allergic reaction.
- **SG** - Specific Gravity or density in kilograms per liter.
- **TLV** - Threshold Limit Value - Airborne concentration to which nearly all persons can be exposed day after day without adverse effects. Time weighted average limit.
- **TWA** - Time Weighted Average - The average allowed exposure (airborne concentration) weighted over an eight hour work shift.
- **WPG /SG** - Weight per Gallon in pounds/Specific Gravity - Density as compared to the weight of water