



Material Safety Data Sheet

Issuing Date 14-Apr-2014

Revision Date 04-Sep-2014

Revision Number 4

1. PRODUCT AND COMPANY IDENTIFICATION

Product Name 5135E
Product Code(s) 5135E
Recommended Use Printing ink

Supplier Address

Markem-Image
150 Congress St. PO Box 2100
Keene, NH 03431
(603) 352-1130

MARKEM-IMAJE USA
100 Chastain Center Blvd
Suite 165

Kennesaw, GA 30144 - USA
Phone: 770-421-7700
Fax: 770-421-7702

Chemical Emergency Phone Number

Chemtrec: 1-800-424-9300 for US/ 703-527-3887 outside US

2. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	CAS-No	Weight %
Methyl ethyl ketone	78-93-3	60-100
Nitrocellulose	9004-70-0	5-10
Amines, C12-14-tert-alkyl, compounds with 1-[[5-(1,1-dimethylpropyl)-2-hydroxy-3-nitrophenyl]azo]-2-naphthalenol 1-[[2-hydroxy-4(or 5)-nitrophenyl]azo]-2-naphthalenol chromium complexes	117527-94-3	5-10
Isopropyl alcohol	67-63-0	3-7

Percentages may not equal 100% since only hazardous components are listed.

3. HAZARDS IDENTIFICATION

DANGER!

Emergency Overview

EXTREMELY FLAMMABLE LIQUID AND VAPOR. VAPOR MAY CAUSE FLASH FIRE

FLAMMABLE LIQUID AND VAPOR

May cause central nervous system depression

Irritating to eyes

Vapors may be irritating to eyes, nose, throat, and lungs

Color Black .

Physical State Liquid.

Odor Solvent.

Potential Health Effects

Principle Routes of Exposure

Inhalation. Skin contact. Eye contact.

Acute Toxicity				
Eyes	Moderately irritating to the eyes. May cause irritation.			
Skin	May cause skin irritation and/or dermatitis. Repeated exposure may cause skin dryness or cracking. Prolonged skin contact may defat the skin and produce dermatitis. Irritating to skin.			
Inhalation	May cause irritation of respiratory tract. May be harmful by inhalation . May be harmful by inhalation . May cause irritation of respiratory tract. May be harmful if inhaled.			
Ingestion	May be harmful if swallowed . Ingestion may cause irritation to mucous membranes.			
Chronic Effects	Repeated or prolonged exposure may cause irritation of eyes and skin. Repeated and prolonged exposure to solvents may cause brain and nervous system damage. Avoid repeated exposure. May cause adverse effects on the bone marrow and blood-forming system. May cause adverse liver effects.			
Aggravated Medical Conditions	Central nervous system. Pre-existing eye disorders. Skin disorders. Respiratory disorders.			
Interactions with Other Chemicals	Use of alcoholic beverages may enhance toxic effects.			
Environmental Hazard	Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment. See Section 12 for additional Ecological Information.			
NFPA	Health Hazard 2	Flammability 3	Stability 0	Reactivity -
HMIS	Health Hazard 2	Flammability 3	Reactivity 0	

4. FIRST AID MEASURES

General Advice	Call 911 or emergency medical service. Remove and isolate contaminated clothing and shoes.
Eye Contact	In case of contact with substance, immediately flush skin or eyes with running water for at least 20 minutes.
Skin Contact	Wash off immediately with plenty of water. Immediate medical attention is not required. Wash off immediately with soap and plenty of water removing all contaminated clothes and shoes. If skin irritation persists, call a physician.
Inhalation	Move victim to fresh air. Apply artificial respiration if victim is not breathing. Administer oxygen if breathing is difficult.
Ingestion	Immediate medical attention is not required. Rinse mouth. Drink plenty of water. Do NOT induce vomiting. Clean mouth with water and afterwards drink plenty of water. Never give anything by mouth to an unconscious person. Consult a physician.
Notes to Physician	Treat symptomatically.
Protection of First-aiders	Remove all sources of ignition. Use personal protective equipment.

5. FIRE-FIGHTING MEASURES

Suitable Extinguishing Media	Dry chemical, CO ₂ , water spray or alcohol-resistant foam. Water spray, fog or alcohol-resistant foam.
Unsuitable Extinguishing Media	CAUTION: All these products have a very low flash point. Do not use dry chemical extinguishers to control fires involving nitromethane or nitroethane. Do not use straight streams.
Specific Hazards Arising from the Chemical	Extremely flammable. Keep product and empty container away from heat and sources of ignition. Risk of ignition.
Protective Equipment and Precautions for Firefighters	Move containers from fire area if you can do it without risk.

6. ACCIDENTAL RELEASE MEASURES

Personal Precautions	ELIMINATE all ignition sources (no smoking, flares, sparks or flames in immediate area). All equipment used when handling the product must be grounded. Do not touch or walk through spilled material. Stop leak if you can do it without risk.
Environmental Precautions	Prevent entry into waterways, sewers, basements or confined areas.
Methods for Containment	Prevent further leakage or spillage if safe to do so.
Methods for Cleaning Up	Use clean non-sparking tools to collect absorbed 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. Use only in area provided with appropriate exhaust ventilation. Wear personal protective equipment. Do not breathe vapors or spray mist. Avoid contact with skin, eyes and clothing.
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. Keep away from heat and sources of ignition. Keep away from heat. Protect from light.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Exposure Guidelines

Chemical Name	ACGIH TLV	OSHA PEL	NIOSH IDLH
Isopropyl alcohol 67-63-0	STEL: 400 ppm TWA: 200 ppm	TWA: 400 ppm TWA: 980 mg/m ³ TWA: 400 ppm	IDLH: 2000 ppm TWA: 400 ppm TWA: 980 mg/m ³ STEL: 500 ppm STEL: 1225 mg/m ³
Methyl ethyl ketone 78-93-3	STEL: 300 ppm TWA: 200 ppm	TWA: 200 ppm TWA: 590 mg/m ³ TWA: 200 ppm	IDLH: 3000 ppm TWA: 200 ppm TWA: 590 mg/m ³ STEL: 300 ppm STEL: 885 mg/m ³
Amines, C12-14-tert-alkyl, compounds with 1-[[5-(1,1-dimethylpropyl)-2-hydroxy-3-nitrophenyl]azo]-2-naphthalenol 1-[[2-hydroxy-4(or 5)-nitrophenyl]azo]-2-naphthalenol chromium complexes 117527-94-3	-	TWA: 0.5 mg/m ³ Cr	IDLH: 25 mg/m ³ Cr(III) TWA: 0.5 mg/m ³ Cr

NIOSH IDLH: Immediately Dangerous to Life or Health.

S*: Skin Notation

Other Exposure Guidelines

Vacated limits revoked by the Court of Appeals decision in AFL-CIO v.

Engineering Measures

Ensure adequate ventilation. Use explosion-proof equipment.

Personal Protective Equipment

Eye/Face Protection

Skin and Body Protection

Respiratory Protection

Tightly fitting safety goggles. Face-shield.

Antistatic boots. Wear fire/flammable resistant/retardant clothing. Impervious gloves. Long sleeved clothing. Chemical resistant apron. Apron.

If exposure limits are exceeded or irritation is experienced, NIOSH/MSHA approved respiratory protection should be worn

Hygiene Measures

When using, do not eat, drink or smoke. Provide regular cleaning of equipment, work area and clothing.



Glasses



Gloves



Boots



Face Mask

9. PHYSICAL AND CHEMICAL PROPERTIES

Color	Black .	Odor	Solvent.
Physical State	Liquid	pH	Not determined
Flash Point	> 16°F / > -9°C	Boiling Point/Range	75°C / 167°F
Autoignition Temperature	Not determined 400°C 752°F	Melting Point/Range	Not determined -85°C -121°F
Flammability Limits in Air	Not determined	Explosion Limits	Not determined
		Upper	12.0
		Lower	1.8
Specific Gravity	0.87	Solubility	Not determined
Evaporation Rate	Not determined	Vapor Pressure	Not determined
Vapor Density	Not determined	VOC Content(%)	84.7126
VOC (lb/gal)	6.17246469	VOC (g/l)	741.180791509964

10. STABILITY AND REACTIVITY

Stability	Stable.
Incompatible Products	Incompatible with oxidizing agents. Incompatible with strong acids and bases.
Conditions to Avoid	Heat, flames and sparks.
Hazardous Decomposition Products	None.
Hazardous Polymerization	no.

11. TOXICOLOGICAL INFORMATION

Acute Toxicity

Component Information

Chemical Name	LD50 Oral	LD50 Dermal	LC50 Inhalation
2-Naphthol	1960 mg/kg (Rat)	10 g/kg (Rabbit)	770 mg/m ³ (Rat) 1 h
Isopropyl alcohol	4396 mg/kg (Rat)	12800 mg/kg (Rat) 12870 mg/kg (Rabbit)	72.6 mg/L (Rat) 4 h
Methyl ethyl ketone	2737 mg/kg (Rat)	6480 mg/kg (Rabbit)	

Chronic Toxicity

Chronic Toxicity

Repeated or prolonged exposure may cause irritation of eyes and skin. Repeated and prolonged exposure to solvents may cause brain and nervous system damage. Avoid repeated exposure. May cause adverse effects on the bone marrow and blood-forming system. May cause adverse liver effects.

Carcinogenicity

The table below indicates whether each agency has listed any ingredient as a carcinogen.

Chemical Name	ACGIH	IARC	NTP	OSHA
Nitrocellulose				X
Amines, C12-14-tert-alkyl, compounds with 1-[[5-(1,1-dimethylpropyl)-2-hydroxy-3-nitrophenyl]azo]-2-naphthalenol 1-[[2-hydroxy-4(or 5)-nitrophenyl]azo]-2-naphthalenol chromium complexes		Group 3		
Isopropyl alcohol		Group 3		X

Sensitization

Not determined

Mutagenic Effects

Not determined

Reproductive Toxicity

Not determined

Developmental Toxicity

Not determined

Teratogenic

Not determined

Target Organ Effects

Central nervous system (CNS), Eyes, Respiratory system, Skin.

12. ECOLOGICAL INFORMATION

Ecotoxicity

Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment

Chemical Name	Toxicity to Algae	Toxicity to Fish	Toxicity to Microorganisms	Daphnia Magna (Water Flea)
Methyl ethyl ketone		3130-3320: 96 h Pimephales promelas mg/L LC50 flow-through		4025 - 6440: 48 h Daphnia magna mg/L EC50 Static 5091: 48 h Daphnia magna mg/L EC50 520: 48 h Daphnia magna mg/L EC50
Isopropyl alcohol	1000: 72 h Desmodesmus subspicatus mg/L EC50 1000: 96 h Desmodesmus subspicatus mg/L EC50	1400000: 96 h Lepomis macrochirus µg/L LC50		13299: 48 h Daphnia magna mg/L EC50

13. DISPOSAL CONSIDERATIONS

Waste Disposal Methods

Dispose of in accordance with local regulations. Should not be released into the environment. Can be landfilled or incinerated, when in compliance with local regulations. This material, as supplied, is a hazardous waste according to federal regulations (40 CFR 261).

Contaminated Packaging

Dispose of in accordance with local regulations. Empty containers should be taken for local recycling, recovery or waste disposal.

14. TRANSPORT INFORMATION

DOT

Proper Shipping Name PRINTING INK
Hazard Class 3
UN-No UN1210
Packing Group II
Description CUST-PRINTING INK

IATA

UN-No Not regulated
Proper Shipping Name UN1210
Hazard Class Printing ink
Packing Group 3
ERG Code II
ERG Code 3L

15. REGULATORY INFORMATION

International Inventories

TSCA Complies

Legend

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory

DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List

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 %
Amines, C12-14-tert-alkyl, compounds with 1-[[5-(1,1-dimethylpropyl)-2-hydroxy-3-nitrophenyl]azo]-2-naphthalenol 1-[[2-hydroxy-4(or 5)-nitrophenyl]azo]-2-naphthalenol chromium complexes	117527-94-3	6.63	1.0
Isopropyl alcohol	67-63-0	2.91	1.0

SARA 311/312 Hazard Categories

Acute Health Hazard	Yes
Chronic Health Hazard	No
Fire Hazard	Yes
Sudden Release of Pressure Hazard	No
Reactive Hazard	No

Clean Water Act

This product contains the following substances which are regulated pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42):

Chemical Name	CWA - Reportable Quantities	CWA - Toxic Pollutants	CWA - Priority Pollutants	CWA - Hazardous Substances
Amines, C12-14-tert-alkyl, compounds with 1-[[5-(1,1-dimethylpropyl)-2-hydroxy-3-nitrophenyl]azo]-2-naphthalenol 1-[[2-hydroxy-4(or 5)-nitrophenyl]azo]-2-naphthalenol chromium complexes		X		

CERCLA

This material, as supplied, contains one or more substances regulated as a hazardous substance under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302):

Chemical Name	Hazardous Substances RQs	Extremely Hazardous Substances RQs	RQ
Methyl ethyl ketone	5000 lb		RQ 5000 lb final RQ RQ 2270 kg final RQ RQ 5000 lb final RQ

U.S. State Regulations**California Proposition 65**

This product contains the following Proposition 65 chemicals:

Chemical Name	CAS-No	California Prop. 65
Naphthalene	91-20-3	Carcinogen

U.S. State Right-to-Know Regulations

Chemical Name	Massachusetts	Pennsylvania	Illinois	Rhode Island
Methyl ethyl ketone	X	X	X	X
Nitrocellulose	X	X		X
Amines, C12-14-tert-alkyl, compounds with 1-[[5-(1,1-dimethylpropyl)-2-hydroxy-3-nitrophenyl]azo]-2-naphthalenol 1-[[2-hydroxy-4(or 5)-nitrophenyl]azo]-2-naphthalenol chromium complexes		X	X	X

Chemical Name	Massachusetts	Pennsylvania	Illinois	Rhode Island
Isopropyl alcohol	X	X		X

Chemical Name	New Jersey
Amines, C12-14-tert-alkyl, compounds with 1-[[5-(1,1-dimethylpropyl)-2-hydroxy-3-nitrophenyl]azo]-2-naphthalenol 1-[[2-hydroxy-4(or 5)-nitrophenyl]azo]-2-naphthalenol chromium complexes	X
Isopropyl alcohol	X
Methyl ethyl ketone	X
Nitrocellulose	X

International Regulations

Mexico - Grade

Serious risk, Grade 3

Chemical Name	Carcinogen Status	Exposure Limits
Methyl ethyl ketone		Mexico: TWA 200 ppm Mexico: TWA 590 mg/m ³ Mexico: TWA 200 ppm Mexico: STEL 300 ppm Mexico: STEL 885 mg/m ³
Isopropyl alcohol		Mexico: TWA 400 ppm Mexico: TWA 980 mg/m ³ Mexico: TWA 400 ppm Mexico: STEL 500 ppm Mexico: STEL 1225 mg/m ³

Canada

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all the information required by the CPR

Chemical Name	NPRI
Methyl ethyl ketone	Part 1, Group 1 Substance Part 5 Substance Part 5, Individual Substance
Isopropyl alcohol	Part 1, Group 1 Substance Part 5 Substance Part 5, Individual Substance

16. OTHER INFORMATION

Prepared By

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Keene, NH 03431
(603) 352-1130

Issuing Date

14-Apr-2014

Revision Date

04-Sep-2014

Revision Note

No information available

General Disclaimer

The information provided on this MSDS is correct to the best of our knowledge, information and belief at the date of its publication

End of Safety Data Sheet