SENSITIZING THE PAPER

Coating by the rod method requires about 1.5 ml of sensitizer per 8x10. Brush coating requires approximately twice as much chemistry. The glass rod is simply just that, and a better way to coat paper, in our opinion. Try to avoid excess sensitizer, which may pool and crystallize.

Our Micro Mixers (Cat. Nos. 09-0340 through 09-0360) are the perfect tool for measuring small quantities of chemistry. You may coat in the darkroom under a red light, or using a 40 watt light bulb with a shade (subdued light).

One thing noticed is an aging effect of the sensitizer. If used immediately, the sensitizer washed off slightly in the water, and exhibited a slight grainy texture. If a print is made several days after the sensitizer has "ripened" there is a smooth texture and no loss of blue in the wash water. The sensitizer is a slight yellow-green color right after mixing but will turn a more pure yellow in a couple of days.

It is simple to let the sensitized paper dry at room temperature in the dark for about one hour. There should be no difference if you prefer heat drying with a hair dryer. If possible, expose the paper within a few hours of coating.

We recommend using a split-back contact print frame (Cat. Nos. 07-2000 through 07-2020) with GE BL 40 UV light bulbs for exposure. Bulbs may be obtained from a light distributor - check your yellow pages. You will have to determine your own exposure times by testing, but a good starting point for a 4x5 print is 0.5 ml of sensitizer measured with the Micro Mixer, and a constant exposure time of 11 minutes under UV bulbs, three inches from the contact printing frame.

Your final step will consist of "GENTLY" washing your print until the yellow stain is gone - approximately 20 minutes. Hang to dry.

For questions concerning this product, please call the Formulary at 406-754-2891.

Cat. No: 07-0095

PHOTOGRAPHERS' FORMULARY INC.

P.O. Box 950 • Condon MT 59826 • 800-922-5255 • FAX 406-754-2896

" NEW "CYANOTYPE KIT

This kit contains chemicals to prepare 100 ml of sensitizer solution.
Coats approximately 50 8 x 10's when applied with a coating rod

The new cyanotype process is a great improvement over the classic formula in providing a much smoother texture, a more intense blue with Dmax (maximum density) near that of black, and a longer tonal scale. Printing time is cut by approximately two thirds. It also loses little, if any, blue color in the final wash water, and is much more suited to a greater variety of papers. The new formula differs from the old in two significant ways: the chemicals require a certain degree of preparation, and they are more toxic than the classic formula. However, neither poses any significant problem, even if you're not used to grinding and mixing your own chemistry.

CHEMICALS CONTAINED IN THIS KIT

Chemical	Amount
Ferric Ammonium Oxalate	30 g
Potassium Ferricyanide	10 g
Ammonium Dichromate (1.25% Sol.)	10 ml
Citric Acid	10 g
Distilled water to make	100 ml

CHEMICAL SAFETY

All chemicals are dangerous and must be treated with respect. Please read the chemical warnings on each package. The chemicals in this kit needing special attention: Ferric ammonium oxalate, Potassium ferricyanide and Ammonium Dichromate.

Potassium ferricyanide: In spite of the fact that this compound contains cyanide, it is not particularly toxic. The reason is that the cyanide groups are bound to the iron atom and are not free to act as a poison. The cyanide groups can be released as hydrogen cyanide gas if the potassium ferricyanide is placed in a strong acid solution; however, strong acid is not used in the cyanotype process.

Ammonium dichromate: All chromium compounds are extremely dangerous. When mixing, do so in a well-ventilated area and use a surgical or painters filter mask and gloves.

Ferric ammonium oxalate: Do not inhale. Use a dust mask and rubber gloves. This product may irritate eyes and skin upon contact. Use proper protective products.

The user assumes all risks upon accepting these chemicals.
IF FOR ANY REASON YOU DO NOT WANT TO ASSUME ALL RISKS, PLEASE RETURN THE KIT WITHIN THIRTY (30) DAYS FOR A FULL REFUND.

MIXING THE STOCK SOLUTION

FOR BEST RESULTS USE DISTILLED WATER

1. Heat about 30 ml of distilled water to approximately 120°F and dissolve the 30g of ferric ammonium oxalate.
2. Add the 10-ml of ammonium dichromate solution and mix thoroughly. This inhibits decomposition during storage, ensuring a long shelf life. Do this procedure under tungsten light (incandescent) no more than a shaded or subdued 25-watt light bulb.
3. Using a mortar and pestle (cat. No. 09-0130), finely grind the 10g of potassium ferricyanide. Wear a protective dust mask, and pay attention to thoroughly completing this step, done when all the red crystals are crushed to a yellow powder. This is important; the potassium ferricyanide must be well dissolved in step 4.
4. Keeping the solution hot, add 10g of the finely ground potassium ferricyanide, stirring thoroughly, until few (preferably no) red crystals remain and green crystals begin to appear.

Set the solution aside in a dark place to cool for about one hour, to just above room temperature.

5. Separate the liquid from green solids by filtering (use a common paper coffee filter). Discard the green sludge, which is now ferric potassium oxalate. The volume of extracted solution should be about 33 ml.
6. Add distilled water to this solution to make 100ml (Note: the solution can be made more dilute by adding water to make up to 200 ml. Emulsion speed with greater dilution is faster, but produces a less intense blue.)
7. Store the sensitizer solution in a brown bottle in a dark, dry location. Shelf life should be in excess of one year if stored properly.

THE NEGATIVE FOR A CYAN PRINT

"New" cyanotype is a contact printing process. Therefore you will need a negative the size of the print you wish to make. Tests determine a density range of 1.7 works well.

A WORD ON PAPER

Thanks to John Barnier and his experimentation, and Mike Ware for this formula. The favored overall paper for cyanotype is Crane's Parchmont Wove. Crane's platinotype paper keeps a constant deep, rich blue color from sheet to sheet, but was not as consistent in texture. Three other good papers are Bienfang 360-layout paper, Twinrocker White Feather Deckle, and Buxton. Whatever paper you choose, make sure it is acid-free, 100% cotton rag. The "new" cyanotype is an excellent indicator of impurities or other manufacturing defects in the paper. A few hours after coating a sheet of paper check its color. A pale yellow-green is the desired color. If it turns a true green or, worse yet, blue, discard it. These colors indicate chemical additives in the paper's production, or an otherwise unsuitable environment for the "new" cyanotype sensitizer.

CLEARING AGENT

The addition of a solution of citric acid to the sensitizer just before coating will greatly speed up clearing of the image. First, make a 40% solution by adding the packet to enough water to make 25 ml of solution. Add one drop to each 2 ml of sensitizer solution for each print. Keep this additive separate from the sensitizer because when combined it will shorten its shelf life.

SPECTRUM®

GARDENA, CA
NEW BRUNSWICK, N

Material Safety Data Sheet

NFPA	HMIS	Personal Protective Equipment
	Health Hazard 2 Fire Hazard 1 Reactivity 0	 See Section 15.

Section 1. Chemical Product and Company Identification

Common Name/ Trade Name	**Ferric ammonium oxalate**
Manufacturer	SPECTRUM CHEMICAL MFG. CORP. 14422 SOUTH SAN PEDRO STREET GARDENA, CALIFORNIA 90248
Commercial Name(s)	Not available.
Synonym	Not available.
Chemical Name	Not available.
Chemical Family	Not available.
Chemical Formula	(NH4)3Fe(C2O4)3.3H2O
Supplier	SPECTRUM QUALITY PRODUCTS, INC. 14422 SOUTH SAN PEDRO STREET GARDENA, CA 90248

Code	F3089
CAS#	13268-42-3
RTECS	LJ8932000
TSCA	On the TSCA list.
CI#	Not available.

IN CASE OF EMERGENCY
CHEMTREC (24hr) 800-424-9300
Emergency phone: (310)516-8000

Section 2.Composition and Information on Ingredients

		Exposure Limits			
Name	**CAS #**	**TWA (mg/m³)**	**STEL (mg/m³)**	**CEIL (mg/m³)**	**% by Weight**
Ferric ammonium oxalate	13268-42-3	1			100

Toxicological Data on Ingredients

Ferric ammonium oxalate
LD50: Not available.
LC50: Not available.

Section 3. Hazards Identification

Potential Acute Health Effects

Extremely dangerous in case of inhalation. Very dangerous in case of skin contact (irritant), of eye contact (irritant), of ingestion. This product may irritate eyes and skin upon contact. Inflammation of the eye is characterized by redness, watering, and itching. Skin inflammation is characterized by itching, scaling, reddening, or, occasionally, blistering.

Potential Chronic Health Effects

Extremely dangerous in case of inhalation.
Very dangerous in case of skin contact (irritant), of eye contact (irritant).
CARCINOGENIC EFFECTS: Not available. MUTAGENIC EFFECTS: Not available. TERATOGENIC EFFECTS: Not available. The substance is toxic to kidneys, lungs, liver, mucous membranes. Toxicity of the product to the reproductive system: Not available. Repeated or prolonged exposure to the substance can produce target organs damage. Repeated or prolonged inhalation of dust may lead to chronic respiratory irritation.

WARNING: This product contains a chemical known to the State of California to cause cancer.
Chemical ingredient(s) requiring this warning:

NONE

Continued on Next Page

WARNING: This product contains a chemical known to the State of California to cause birth defects or other reproductive harm.
Chemical ingredient(s) requiring this warning:

NONE

Section 4. First Aid Measures

Eye Contact	Check for and remove any contact lenses. IMMEDIATELY flush eyes with running water for at least 15 minutes, keeping eyelids open. COLD water may be used. DO NOT use an eye ointment. Seek medical attention.
Skin Contact	If the chemical got onto the clothed portion of the body, remove the contaminated clothes as quickly as possible, protecting your own hands and body. Place the victim under a deluge shower. If the chemical touches the victim's exposed skin, such as the hands: Gently and thoroughly wash the contaminated skin with running water and non-abrasive soap. Be particularly careful to clean folds, crevices, creases and groin. COLD water may be used. Cover the irritated skin with an emollient. If irritation persists, seek medical attention. Wash contaminated clothing before reusing.
Serious Skin Contact	Wash with a disinfectant soap and cover the contaminated skin with an anti-bacterial cream. Seek medical attention.
Inhalation	Allow the victim to rest in a well ventilated area. Seek immediate medical attention.
Serious Inhalation	No additional information.
Ingestion	Remove dentures if any. Have conscious person drink several glasses of water or milk. INDUCE VOMITING by sticking finger in throat. Lower the head so that the vomit will not reenter the mouth and throat. NEVER give an unconscious person anything to ingest. Seek medical attention.
Serious Ingestion	No additional information.

Section 5. Fire and Explosion Data

Flammability of the Product	Combustible.
Auto-Ignition Temperature	Not available.
Flash Points	Not available.
Flammable Limits	Not available.
Products of Combustion	These products are carbon oxides (CO, CO2), nitrogen oxides (NO, NO2...). Some metallic oxides.
Fire Hazards in Presence of Various Substances	No specific information is available in our database regarding the flammability of this product in presence of various materials.
Explosion Hazards in Presence of Various Substances	Risks of explosion of the product in presence of mechanical impact: Not available. Risks of explosion of the product in presence of static discharge: Not available. No specific information is available in our database regarding the product's risks of explosion in the presence of various materials.
Fire Fighting Media and Instructions	SMALL FIRE: Use DRY chemicals, CO2, water spray or foam. LARGE FIRE: Use water spray, fog or foam. DO NOT use water jet.
Special Remarks on Fire Hazards	No additional remark.
Special Remarks on Explosion Hazards	No additional remark.

Section 6. Accidental Release Measures

Small Spill	Use appropriate tools to put the spilled solid in a convenient waste disposal container. Finish cleaning by spreading water on the contaminated surface and dispose of according to local and regional authority requirements.
Large Spill	Our database contains no additional information in case of a spill and/or a leak of the product. Use a shovel to put the material into a convenient waste disposal container. Finish cleaning by spreading water on the contaminated surface and allow to evacuate through the sanitary system.

Section 7. Handling and Storage

Precautions	Keep away from heat. Keep away from sources of ignition. Empty containers pose a fire risk, evaporate the residue under a fume hood. Ground all equipment containing material. DO NOT ingest. DO NOT breathe dust. In case of insufficient ventilation, wear suitable respiratory equipment. If ingested, seek medical advice immediately and show the container or the label. Avoid contact with skin and eyes.
Storage	Keep container dry. Keep in a cool place. Ground all equipment containing material. Keep container tightly closed. Keep in a cool, well-ventilated place. Combustible materials should be stored away from extreme heat and away from strong oxidizing agents.

Section 8. Exposure Controls/Personal Protection

Engineering Controls	Use process enclosures, local exhaust ventilation, or other engeneering controls to keep airborne levels below recommended exposure limits. If user operations generate dust, fume or mist, use ventilation to keep exposure to airborne contaminants below the exposure limit.
Personal Protection	Splash goggles. Lab coat. Dust respirator. Be sure to use a MSHA/NIOSH approved respirator or equivalent. Gloves (impervious). Wear appropriate respirator when ventilation is inadequate.
Personal Protection in Case of a Large Spill	Splash goggles. Full suit. Dust respirator. Boots. Gloves. A self contained breathing apparatus should be used to avoid inhalation of the product. Suggested protective clothing might not be sufficient; consult a specialist BEFORE handling this product.
Exposure Limits	TWA: 1 (mg/m^3) from ACGIH Consult local authorities for acceptable exposure limits.

Section 9. Physical and Chemical Properties

Physical state and appearance	Solid. (Crystalline solid.)
Molecular Weight	428.07
pH (1% soln/water)	6
Boiling Point	Not available.
Melting Point	Decomposes.
Critical Temperature	Not available.
Specific Gravity	1.78 (Water = 1)
Vapor Pressure	Not available.
Vapor Density	Not available.
Volatility	Not available.
Odor Threshold	Not available.
Water/Oil Dist. Coeff.	Not available.
Ionicity (in Water)	Not available.
Dispersion Properties	See solubility in water.
Solubility	Easily soluble in cold water.

Odor	Not available.
Taste	Not available.
Color	Green.

Section 10. Stability and Reactivity Data

Stability	The product is stable.
Instability Temperature	Not available.
Conditions of Instability	No additional remark.
Incompatibility with various substances	No specific information is available in our database regarding the reactivity of this material in presence of various other materials.
Corrosivity	Non-corrosive in presence of glass.
Special Remarks on Reactivity	No additional remark.
Special Remarks on Corrosivity	No additional remark.

Continued on Next Page

Polymerization	No.

Section 11. Toxicological Information

Routes of Entry	Ingestion. Inhalation.
Toxicity to Animals	LD50: Not available. LC50: Not available.
Chronic Effects on Humans	The substance is toxic to kidneys, lungs, liver, mucous membranes. Toxicity of the product to the reproductive system: Not available.
Other Toxic Effects on Humans	Extremely dangerous in case of inhalation. Very dangerous in case of skin contact (irritant), of eye contact (irritant), of ingestion.
Special Remarks on Toxicity to Animals	No additional remark.
Special Remarks on Chronic Effects on Humans	No additional remark.
Special Remarks on other Toxic Effects on Humans	No additional remark.

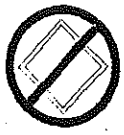
Section 12. Ecological Information

Ecotoxicity	Not available.
BOD5 and COD	Not available.
Products of Biodegradation	These products are carbon oxides (CO, CO2), nitrogen oxides (NO, NO2...). Some metallic oxides.
Toxicity of the Products of Biodegradation	The products of degradation are more toxic.
Special Remarks on the Products of Biodegradation	No additional remark.

Section 13. Disposal Considerations

Waste Disposal	Recycle to process, if possible. Consult your local or regional authorities.

Section 14. Transport Information

DOT Classification	Not a DOT controlled material (United States).
Identification	Not applicable (PIN and PG).
Special Provisions for Transport	Not applicable.
DOT (Pictograms)	

Section 15. Other Regulatory Information and Pictograms

Federal and State Regulations	Not available.
California Proposition 65 Warnings	WARNING: This product contains a chemical known to the State of California to cause cancer. Chemical ingredient(s) requiring this warning: NONE WARNING: This product contains a chemical known to the State of California to cause birth defects or other reproductive harm. Chemical ingredient(s) requiring this warning: NONE

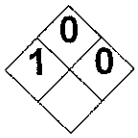
Continued on Next Page

10-1010

SPECTRUM®

ISO 9002 CERTIFIED Gardena, CA

Material Safety Data Sheet

NFPA	HMIS		Personal Protective Equipment
	Health Hazard	2	 See Section 15.
	Fire Hazard	0	
	Reactivity	0	

Section 1. Chemical Product and Company Identification

Common Name/ Trade Name	**Potassium ferricyanide**	Code	P4290
		CAS#	13746-66-2
Manufacturer	SPECTRUM CHEMICAL MFG. CORP. 14422 SOUTH SAN PEDRO STREET GARDENA, CALIFORNIA 90248-9985	RTECS	LJ8225000
		TSCA	On the TSCA list.
Commercial Name(s)	Not available	CI#	Not available.
Synonym	Potassium hexacyanoferrate (III)	In case of emergency	
Chemical Name	potassium ferricyanide	CHEMTREC (24hr) 800-424-9300	
Chemical Family	Not available.	Emergency phone: (310) 516-8000	
Chemical Formula	K3Fe(CN)6		
Supplier	SPECTRUM QUALITY PRODUCTS 14422 S. SAN PEDRO STREET GARDENA, CA 90248-9985		

Section 2. Composition and Information on Ingredients

		Exposure Limits			
Name	CAS#	TWA (mg/m3)	STEL (mg/m3)	CEIL (mg/m3)	% by Weight
Potassium ferricyanide	13746-66-2				100

Toxicological Data on Ingredients Potassium ferricyanide:

Section 3. Hazards Identification

Potential Acute Health Effects Slightly dangerous to dangerous in case of skin contact (irritant), of eye contact (irritant), of ingestion, of inhalation. Very slightly to slightly dangerous in case of skin contact (permeator). This product may irritate eyes and skin upon contact.

Potential Chronic CARCINOGENIC EFFECTS: Not available. MUTAGENIC EFFECTS: Not available. TERATOGENIC EFFECTS: Not available. The substance is toxic to lungs, mucous membranes. Toxicity of the

Health Effects	product to the reproductive system: Not available. Repeated or prolonged exposure to the substance can produce target organs damage.

Section 4. First Aid Measures

Eye Contact	Check for and remove any contact lenses. IMMEDIATELY flush eyes with running water for at least 15 minutes, keeping eyelids open. COLD water may be used. DO NOT use an eye ointment. Seek medical attention.
Skin Contact	If the chemical got onto the clothed portion of the body, remove the contaminated clothes as quickly as possible, protecting your own hands and body. Place the victim under a deluge shower. If the chemical touches the victim's exposed skin, such as the hands: Gently and thoroughly wash the contaminated skin with running water and non-abrasive soap. Be particularly careful to clean folds, crevices, creases and groin. COLD water may be used. Cover the irritated skin with an emollient. If irritation persists, seek medical attention. Wash contaminated clothing before reusing.
Hazardous Skin Contact	Wash with a disinfectant soap and cover the contaminated skin with an anti-bacterial cream. Seek medical attention.
Inhalation	Allow the victim to rest in a well ventilated area. Seek immediate medical attention.
Hazardous Inhalation	No additional information.
Ingestion	Remove dentures if any. Have conscious person drink several glasses of water or milk. INDUCE VOMITING by sticking finger in throat. Lower the head so that the vomit will not reenter the mouth and throat. NEVER give an unconscious person anything to ingest. Seek medical attention.
Hazardous Ingestion	No additional information.

Section 5. Fire and Explosion Data

Flammability of the Product	Non-flammable.
Auto-Ignition Temperature	Not applicable.
Flash Points	Not applicable.
Flammable Limits	Not applicable.

Products of Combustion	Not applicable.
Fire Hazards in Presence of Various Substances	Not applicable.
Explosion in Presence of Various Substances	Risks of explosion of the product in presence of mechanical impact: Not available. Risks of explosion of the product in presence of static discharge: Not available. No specific information is available in our database regarding the product's risks of explosion in the presence of various materials.
Fire Fighting Media and Instructions	Non-flammable.
Special Remarks on Fire Hazards	No additional remark.
Special Remarks on Explosion Hazards	No additional remark.

Section 6. Accidental Release Measures

Small Spill	Use appropriate tools to put the spilled solid in a convenient waste disposal container. Finish cleaning by spreading water on the contaminated surface and dispose of according to local and regional authority requirements.
Large Spill	Our database contains no additional information in case of a spill and/or a leak of the product. Use a shovel to put the material into a convenient waste disposal container. Finish cleaning by spreading water on the contaminated surface and allow to evacuate through the sanitary system.

Section 7. Handling and Storage

Precautions	DO NOT ingest. DO NOT breathe dust. In case of insufficient ventilation, wear suitable respiratory equipment. If ingested, seek medical advice immediately and show the container or the label. Avoid contact with skin and eyes.
Storage	No specific storage is required. Use shelves or cabinets sturdy enough to bear the weight of the chemicals. Be sure that it is not necessary to strain to reach materials, and that shelves are not overloaded.

Section 8. Exposure Controls/Personal Protection

Engineering Controls	Use process enclosures, local exhaust ventilation, or other engeneering controls to keep airborne levels below recommended exposure limits. If user operations generate dust, fume or mist, use ventilation to keep exposure to airborne contaminants below the exposure limit.
Personal Protection	Splash goggles. Lab coat. Dust respirator. Be sure to use a MSHA/NIOSH approved respirator or equivalent. Gloves (impervious). Wear appropriate respirator when ventilation is inadequate.
Personal	Splash goggles. Full suit. Dust respirator. Boots. Gloves. A self contained breathing apparatus

Protection in Case of a Large Spill	sufficient; consult a specialist BEFORE handling this product.
Exposure Limits	Not available.

Section 9. Physical and Chemical Properties

Physical state and appearance	Solid.
Molecular Weight	329.25
pH (1% soln/water)	Not available.
Boiling Point	Not available.
Melting Point	Decomposes.
Critical Temperature	Not available.
Specific Gravity	1.85 (Water = 1)
Vapor Pressure	Not available.
Vapor Density	Not available.
Volatility	Not available.
Odor Threshold	Not available.
Evaporation rate	Not available.
Viscosity	Not available.
Water/Oil Dist. Coeff.	Not available.
Ionicity (in Water)	Not available.
Dispersion Properties	See solubility in water.
Solubility	Soluble in cold water.

Odor	Not available.
Taste	Not available.
Color	Not available.

Section 10. Stability and Reactivity Data

Stability	The product is stable.
Instability Temperature	Not available.
Conditions of Instability	No additional remark.
Incompatibility with Various Substances	No specific information is available in our database regarding the reactivity of this material in presence of various other materials.
Corrosivity	Non-corrosive in presence of glass.
Special Remarks on Reactivity	No additional remark.
Special Remarks on Corrosivity	No additional remark.

Section 11. Toxicological Information

Routes of Entry	Ingestion. Inhalation.

Toxicity to Animals	LD50: Not available. LC50: Not available.
Chronic Effects on Humans	The substance is toxic to lungs, mucous membranes. Toxicity of the product to the reproductive system: Not available.
Other Toxic Effects on Humans	Slightly dangerous to dangerous in case of skin contact (irritant), of eye contact (irritant), of ingestion, of inhalation. Very slightly to slightly dangerous in case of skin contact (permeator).
Special Remarks on Toxicity to Animals	No additional remark.
Special Remarks on Chronic Effects on Humans	No additional remark.
Special Remarks on other Toxic Effects on Humans	No additional remark.

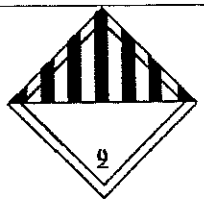
Section 12. Ecological Information

Ecotoxicity	Not available.
BOD5 and COD	Not available.
Products of Biodegradation	Some metallic oxides.
Toxicity of the Products of Biodegradation	The products of degradation are more toxic.
Special Remarks on the Products of Biodegradation	No additional remark.

Section 13. Disposal Considerations

Waste Disposal	Recycle to process, if possible. Consult your local or regional authorities.

Section 14. Transport Information

DOT Classification	DOT CLASS 9: Miscellaneous hazardous material.
Identification	Environmentally hazardous substance, solid, n.o.s. (Potassium ferricyanide) UN3077 III
Special Provisions for Transport	Marine Pollutant
DOT (Pictograms)	

Section 15. Other Regulatory Information and Pictograms

Federal and State Regulations

Superfund Amendments and Reauthorization Act of 1986 (SARA) Title III requires emergency planning based on Threshold Planning Quantities (TPQs) and release reporting based on Reportable Quantities (RQs) in 40 CFR 355 (used for SARA 302, 304, 311 and 312). Components present in this product at a level which could require reporting under the statute are:

NONE

Superfund Amendments and Reauthorization Act of 1986 (SARA) Title III requires submission of annual report release of toxic chemicals that appear in 40 CFR 372 (used for SARA 313). This information must be included in all MSDSs that are copied and distributed for this material. Components present in this product at a level which could require reporting under the statute are:

NONE

WARNING: This product contains a chemical known to the State of California to cause cancer. Chemical ingredient(s) requiring this warning:

NONE

WARNING: This product contains a chemical known to the State of California to cause birth defects or other reproductive harm. Chemical ingredient(s) requiring this warning: NONE

Other Classifications

WHMIS (Canada) WHMIS CLASS D-2A: Material causing other toxic effects (VERY TOXIC).

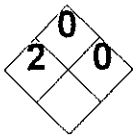
DSCL (EEC) R37- Irritating to respiratory system.
R42- May cause sensitization by inhalation.

Other Classifications	**WHMIS (Canada)**	WHMIS CLASS D-2A: Material causing other toxic effects (VERY TOXIC).
	DSCL (EEC)	R37- Irritating to respiratory system. R42- May cause sensitization by inhalation.

HMIS (U.S.A.)

Health Hazard	1
Fire Hazard	0
Reactivity	0
Personal Protection	

National Fire Protection Association (U.S.A.)



Personal Protective Equipment

Protective Gloves (impervious).

Lab coat.

Dust respirator. Be sure to use a MSHA/NIOSH approved respirator or equivalent. Wear appropriate respirator when ventilation is inadequate.

Splash goggles.

Section 16. Other Information

References	Not available.		
Catalog Number(s)	P1285, P1286		
Other Special Considerations	No additional remark.		
Validated by	E. Brull on 12/17/96.	**Verified by Name**	E. Brull.
Emergency Phone:	(310)516-8000		
Notice to Reader	All chemicals may pose unknown hazards and should be used with caution. This Material Safety Data Sheet (MSDS) applies only to the material as packaged. If this product is combined with other materials, deteriorates, or becomes contaminated, it may pose hazards not mentioned in this MSDS. It shall be the user's responsibility to develop proper methods of handling and personal protection based on the actual conditions of use. While this MSDS is based on technical data judged to be reliable, Spectrum Chemical Mfg. Corp. assumes no responsibility for the completeness or accuracy of the information contained herein.		

10-0120

SPECTRUM®

ISO 9002 CERTIFIED

GARDENA, CA
NEW BRUNSWICK, NJ

Material Safety Data Sheet

NFPA	HMIS	Personal Protective Equipment
	Health Hazard 0 Fire Hazard 1 Reactivity 0	 See Section 15

Section 1. Chemical Product and Company Identification

Common Name/ Trade Name	**Ammonium dichromate**
Manufacturer	SPECTRUM CHEMICAL MFG. CORP. 14422 SOUTH SAN PEDRO STREET GARDENA, CALIFORNIA 90248
Commercial Name(s)	Not available.
Synonym	Not available.
Chemical Name	
Chemical Family	Not available.
Chemical Formula	(NH4)2Cr2O7
Supplier	SPECTRUM QUALITY PRODUCTS, INC. 14422 SOUTH SAN PEDRO STREET GARDENA, CA 90248

Code	A5050
CAS#	7789-09-5
RTECS	HX7650000
TSCA	On the TSCA list.
CI#	Not available.

IN CASE OF EMERGENCY
CHEMTREC (24hr) 800-424-9300
Emergency phone: (310)516-8000

Section 2.Composition and Information on Ingredients

		Exposure Limits			
Name	CAS #	TWA (mg/m³)	STEL (mg/m³)	CEIL (mg/m³)	% by Weight
Ammonium dichromate	7789-09-5	0.05			100

Toxicological Data on Ingredients

Ammonium dichromate
LD50: Not available.
LC50: Not available.

Section 3. Hazards Identification

Potential Acute Health Effects

No specific information is available in our database regarding the other toxic effects of this material for humans.This product is a severe eye irritant. Prolonged exposure may result in skin burns and ulcerations. Over-exposure by inhalation may cause respiratory irritation.

Potential Chronic Health Effects

CARCINOGENIC EFFECTS: Classified A1 by ACGIH. **MUTAGENIC EFFECTS**: Not available. **TERATOGENIC EFFECTS**: Not available. Toxicity of the product to the reproductive system: Not available. There is no known effect from chronic exposure to this product. Repeated or prolonged exposure is not known to aggravate medical condition.

Continued on Next Page

Section 4. First Aid Measures

Eye Contact	IMMEDIATELY flush eyes with running water for at least 15 minutes, keeping eyelids open. COLD water may be used.
Skin Contact	NO known EFFECT according to our database.
Serious Skin Contact	No additional information.
Inhalation	Allow the victim to rest in a well ventilated area. Seek immediate medical attention.
Serious Inhalation	Evacuate the victim to a safe area as soon as possible. Loosen tight clothing such as a collar, tie, belt or waistband. If breathing is difficult, administer oxygen. If the victim is not breathing, perform mouth-to-mouth resuscitation. WARNING: It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation when the inhaled material is toxic, infectious or corrosive. Seek medical attention.
Ingestion	Remove dentures if any. Watch for an obstruction in the victim's mouth. Remove if possible what is causing the obstruction but do not force fingers or a hard object between the victim's teeth. Have conscious person drink several glasses of water or milk. INDUCE VOMITING by sticking finger in throat. Seek immediate medical attention.
Serious Ingestion	Examine the lips and mouth to ascertain whether the tissues are damaged, a possible indication that the toxic material was ingested; the absence of such signs, however, is not conclusive. Remove dentures if any. Watch for an obstruction in the victim's mouth. Remove if possible what is causing the obstruction but do not force fingers or a hard object between the victim's teeth. If a soft pad can be inserted between the victim's teeth, it will protect the tongue from being bitten. A badly bleeding tongue immensely complicates the patient's problems. Have conscious person drink several glasses of water or milk. INDUCE VOMITING by sticking finger in throat. Lower the head so that the vomit will not reenter the mouth and throat. If convulsions occur, do not restrain the victim, but do remove objects with which he (she) might injure himself (herself) or orient the victim to prevent him (her) from striking fixed heavy objects. If the convulsions cease, turn the victim on the side or face down so that any fluid in the mouth will drain. Seek medical attention.

Section 5. Fire and Explosion Data

Flammability of the Product	Combustible.
Auto-Ignition Temperature	Not available.
Flash Points	Not available.
Flammable Limits	Not available.
Products of Combustion	Some metallic oxides.
Fire Hazards in Presence of Various Substances	No specific information is available in our database regarding the flammability of this product in presence of various materials.
Explosion Hazards in Presence of Various Substances	Risks of explosion of the product in presence of mechanical impact: Not available. Risks of explosion of the product in presence of static discharge: Not available. No specific information is available in our database regarding the product's risks of explosion in the presence of various materials.
Fire Fighting Media and Instructions	Oxidizing material. DO NOT use water jet. Cool containing vessels with water jet in order to prevent pressure build-up, autoignition or explosion. Use flooding quantities of water. Avoid contact with organic materials.
Special Remarks on Fire Hazards	No additional remark.
Special Remarks on Explosion Hazards	No additional remark.

Continued on Next Page

Section 6. Accidental Release Measures

Small Spill	Use appropriate tools to put the spilled solid in a convenient waste disposal container.
Large Spill	Oxidizing material. Stop leak if without risk. Avoid contact with a combustible material (wood, paper, oil, clothing...). Keep substance damp using water spray. DO NOT touch spilled material. Prevent entry into sewers, basements or confined areas; dike if needed. Eliminate all sources of ignition. Call for assistance on disposal.

Section 7. Handling and Storage

Precautions	Keep locked up. Keep away from heat. Keep away from sources of ignition. Keep away from combustible materials. Empty containers pose a fire risk, evaporate the residue under a fume hood. Ground all equipment containing material. DO NOT ingest. DO NOT breathe dust. Wear suitable protective clothing. If ingested, seek medical advice immediately and show the container or the label.
Storage	Keep container dry. Keep in a cool place. Ground all equipment containing material. Oxidizing materials should be stored in a separate safety storage cabinet or room.

Section 8. Exposure Controls/Personal Protection

Engineering Controls	Use process enclosures, local exhaust ventilation, or other engeneering controls to keep airborne levels below recommended exposure limits. If user operations generate dust, fume or mist, use ventilation to keep exposure to airborne contaminants below the exposure limit.
Personal Protection	Safety glasses. Lab coat. Dust respirator. Be sure to use a MSHA/NIOSH approved respirator or equivalent. Wear appropriate respirator when ventilation is inadequate.
Personal Protection in Case of a Large Spill	Splash goggles. Full suit. Dust respirator. Boots. Gloves. A self contained breathing apparatus should be used to avoid inhalation of the product. Suggested protective clothing might not be sufficient; consult a specialist BEFORE handling this product.
Exposure Limits	TWA: 0.05 (mg/m^3) from ACGIH Consult local authorities for acceptable exposure limits.

Section 9. Physical and Chemical Properties

Physical state and appearance	Solid.	Odor	Not available.
Molecular Weight	252.1	Taste	Not available.
pH (1% soln/water)	Not available.	Color	Not available.
Boiling Point	Not available.		
Melting Point	Decomposes. (180 °C or 356°F)		
Critical Temperature	Not available.		
Specific Gravity	2.15 (Water = 1)		
Vapor Pressure	Not available.		
Vapor Density	Not available.		
Volatility	Not available.		
Odor Threshold	Not available.		
Water/Oil Dist. Coeff.	Not available.		
Ionicity (in Water)	Not available.		
Dispersion Properties	See solubility in water.		
Solubility	Soluble in cold water, hot water.		

Continued on Next Page

Section 10. Stability and Reactivity Data

Stability	Unstable.
Instability Temperature	Not available.
Conditions of Instability	No additional remark.
Incompatibility with various substances	No specific information is available in our database regarding the reactivity of this material in presence of various other materials.
Corrosivity	Non-corrosive in presence of glass.
Special Remarks on Reactivity	No additional remark.
Special Remarks on Corrosivity	No additional remark.
Polymerization	No.

Section 11. Toxicological Information

Routes of Entry	Ingestion.
Toxicity to Animals	LD50: Not available. LC50: Not available.
Chronic Effects on Humans	**CARCINOGENIC EFFECTS**: Classified A1 by ACGIH. Toxicity of the product to the reproductive system: Not available.
Other Toxic Effects on Humans	No specific information is available in our database regarding the other toxic effects of this material for humans.
Special Remarks on Toxicity to Animals	No additional remark.
Special Remarks on Chronic Effects on Humans	No additional remark.
Special Remarks on other Toxic Effects on Humans	No additional remark.

Section 12. Ecological Information

Ecotoxicity	Not available.
BOD5 and COD	Not available.
Products of Biodegradation	Some metallic oxides.
Toxicity of the Products of Biodegradation	The products of degradation are less toxic than the product itself.
Special Remarks on the Products of Biodegradation	No additional remark.

Section 13. Disposal Considerations

Waste Disposal	Recycle to process, if possible. Consult your local or regional authorities.

Continued on Next Page

Section 14. Transport Information

DOT Classification	DOT CLASS 5.1: Oxidizer.
Identification	Ammonium dichromate UN1439 II
Special Provisions for Transport	No additional remark.
DOT (Pictograms)	

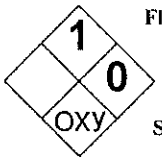
Section 15. Other Regulatory Information and Pictograms

Federal and State Regulations	The following product(s) is (are) listed by the State of California: [Cancer] **Ammonium dichromate** The following product(s) is (are) listed on SARA 313: **Ammonium dichromate** The following product(s) is (are) listed by the State of Massachusetts: **Ammonium dichromate** The following product(s) is (are) listed by the State of Pennsylvania: **Ammonium dichromate** The following product(s) is (are) listed on TSCA: **Ammonium dichromate**
California Proposition 65 Warnings	WARNING: This product contains a chemical known to the State of California to cause cancer. Chemical ingredient(s) requiring this warning: **Ammonium dichromate** WARNING: This product contains a chemical known to the State of California to cause birth defects or other reproductive harm. Chemical ingredient(s) requiring this warning: NONE
Other Regulations	OSHA: Hazardous by definition of Hazard Communication Standard (29 CFR 1910.1200).
Other Classifications	**WHMIS (Canada)** WHMIS CLASS C: Oxidizing material. WHMIS CLASS D-2A: Material causing other toxic effects (VERY TOXIC).
	DSCL (EEC) R8- Contact with combustible material may cause fire. R9- Explosive when mixed with combustible material. R39- Danger of very serious irreversible effects. R45- May cause cancer.

HMIS (U.S.A.)

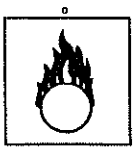
Health Hazard	0
Fire Hazard	1
Reactivity	0
Personal Protection	a

National Fire Protection Association (U.S.A.)



WHMIS (Canada) (Pictograms)

DSCL (Europe) (Pictograms)



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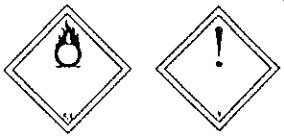
TDG (Canada) (Pictograms)	
ADR (Europe) (Pictograms)	
Protective Equipment	 Lab coat.  Dust respirator. Be sure to use a MSHA/NIOSH approved respirator or equivalent. Wear appropriate respirator when ventilation is inadequate.  Safety glasses.

Section 16. Other Information

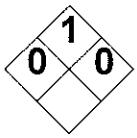
Catalog Number(s)	**A1178, A1179**
References	Not available.
Other Special Considerations	No additional remark.
Validated by E. Brull on 12/17/96.	**Verified by E. Brull.** **Printed 12/17/96.**
Emergency phone: (310)516-8000	

10-0410

SPECTRUM®

ISO 9002 CERTIFIED
Gardena, CA

Material Safety Data Sheet

NFPA	HMIS		Personal Protective Equipment
	Health Hazard	3	
	Fire Hazard	1	
	Reactivity	0	See Section 15.

Section 1. Chemical Product and Company Identification

Common Name/ Trade Name	**Citric acid**	**Code**	C4370
		CAS#	77-92-9
Manufacturer	SPECTRUM CHEMICAL MFG. CORP. 14422 SOUTH SAN PEDRO STREET GARDENA, CALIFORNIA 90248-9985	**RTECS**	GE7350000
		TSCA	On the TSCA list.
Commercial Name(s)	Not available	**CI#**	Not available.
Synonym	2-Hydroxy-1,2,3-	**In case of emergency**	
Chemical Name	Not available.	**CHEMTREC (24hr) 800-424-9300**	
Chemical Family	Not available.	**Emergency phone: (310) 516-8000**	
Chemical Formula	C6H8O7		
Supplier	SPECTRUM QUALITY PRODUCTS 14422 S. SAN PEDRO STREET GARDENA, CA 90248-9985		

Section 2. Composition and Information on Ingredients

		Exposure Limits			
Name	**CAS#**	**TWA (mg/m3)**	**STEL (mg/m3)**	**CEIL (mg/m3)**	**% by Weight**
Citric acid	77-92-9				100

Toxicological Data on Ingredients Citric acid:
ORAL (LD50): Acute: 5040 mg/kg (Mouse), 6730 mg/kg (Rat).

Section 3. Hazards Identification

Potential Acute Health Effects Slightly dangerous to dangerous in case of ingestion, of inhalation. Very slightly to slightly dangerous in case of skin contact (irritant, permeator), of eye contact (irritant). Corrosive to eyes and skin. The amount of tissue damage depends on length of contact. Eye contact can result in corneal damage or blindness. Skin contact can produce inflammation and blistering. Inhalation of dust will produce irritation to gastro-intestinal or respiratory tract, characterized by burning, sneezing and coughing. Severe over-exposure can produce lung damage, choking, unconsciousness or death. This product may irritate eyes and skin upon contact.

Potential Chronic CARCINOGENIC EFFECTS: Not available. MUTAGENIC EFFECTS: Not available. TERATOGENIC EFFECTS: Not available. The substance is toxic to mucous membranes. Toxicity of the product

Health Effects	to the reproductive system: Not available. Repeated or prolonged exposure to the substance can produce target organs damage. Repeated exposure of the eyes to a low level of dust can produce eye irritation. Repeated skin exposure can produce local skin destruction, or dermatitis. Repeated inhalation of dust can produce varying degree of respiratory irritation or lung damage.

Section 4. First Aid Measures

Eye Contact	Check for and remove any contact lenses. IMMEDIATELY flush eyes with running water for at least 15 minutes, keeping eyelids open. COLD water may be used. DO NOT use an eye ointment. Seek medical attention.
Skin Contact	If the chemical got onto the clothed portion of the body, remove the contaminated clothes as quickly as possible, protecting your own hands and body. Place the victim under a deluge shower. If the chemical touches the victim's exposed skin, such as the hands: Neutralize exposed skin with a dilute solution of sodium carbonate. Gently and thoroughly wash the contaminated skin with running water and non-abrasive soap. Be particularly careful to clean folds, crevices, creases and groin. COLD water may be used. If irritation persists, seek medical attention. Wash contaminated clothing before reusing.
Hazardous Skin Contact	Wash with a disinfectant soap and cover the contaminated skin with an anti-bacterial cream. Seek medical attention.
Inhalation	Allow the victim to rest in a well ventilated area. Seek immediate medical attention.
Hazardous Inhalation	Evacuate the victim to a safe area as soon as possible. Loosen tight clothing such as a collar, tie, belt or waistband. If breathing is difficult, administer oxygen. If the victim is not breathing, perform mouth-to-mouth resuscitation. WARNING: It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation when the inhaled material is toxic, infectious or corrosive. Seek immediate medical attention.
Ingestion	DO NOT induce vomiting. Have conscious person drink several glasses of water or milk. Seek immediate medical attention.
Hazardous Ingestion	DO NOT induce vomiting. Examine the lips and mouth to ascertain whether the tissues are damaged, a possible indication that the toxic material was ingested; the absence of such signs, however, is not conclusive. Loosen tight clothing such as a collar, tie, belt or waistband. If the victim is not breathing, perform mouth-to-mouth resuscitation. Seek medical attention.

Section 5. Fire and Explosion Data

Flammability of the Product	Combustible.
Auto-Ignition Temperature	Not available.
Flash Points	Not available.
Flammable Limits	LOWER: 3.6% UPPER: 29%

Products of Combustion	These products are carbon oxides (CO, CO2).
Fire Hazards in Presence of Various Substances	No specific information is available in our database regarding the flammability of this product in presence of various materials.
Explosion in Presence of Various Substances	Risks of explosion of the product in presence of mechanical impact: Not available. Risks of explosion of the product in presence of static discharge: Not available. No specific information is available in our database regarding the product's risks of explosion in the presence of various materials.
Fire Fighting Media and Instructions	SMALL FIRE: Use DRY chemicals, CO2, water spray or foam. LARGE FIRE: Use water spray, fog or foam. DO NOT use water jet.
Special Remarks on Fire Hazards	No additional remark.
Special Remarks on Explosion Hazards	No additional remark.

Section 6. Accidental Release Measures

Small Spill	Use appropriate tools to put the spilled solid in a convenient waste disposal container. If necessary: Neutralize the residue with a dilute solution of sodium carbonate.
Large Spill	Corrosive solid. Stop leak if without risk. DO NOT get water inside container. DO NOT touch spilled material. Use water spray to reduce vapors. Prevent entry into sewers, basements or confined areas; dike if needed. Eliminate all sources of ignition. Call for assistance on disposal. Neutralize the residue with a dilute solution of sodium carbonate.

Section 7. Handling and Storage

Precautions	Keep container dry. Keep away from heat. Keep away from sources of ignition. Empty containers pose a fire risk, evaporate the residue under a fume hood. Ground all equipment containing material. DO NOT breathe dust. Never add water to this product. Wear suitable protective clothing. In case of insufficient ventilation, wear suitable respiratory equipment. If you feel unwell, seek medical attention and show the label when possible.
Storage	Keep container dry. Keep in a cool place. Ground all equipment containing material. Corrosive materials should be stored in a separate safety storage cabinet or room.

Section 8. Exposure Controls/Personal Protection

Engineering Controls	Use process enclosures, local exhaust ventilation, or other engeneering controls to keep airborne levels below recommended exposure limits. If user operations generate dust, fume or mist, use ventilation to keep exposure to airborne contaminants below the exposure limit.
Personal Protection	Splash goggles. Synthetic apron. Vapor and dust respirator. Be sure to use a MSHA/NIOSH approved respirator or equivalent. Gloves. Wear appropriate respirator when ventilation is inadequate.
Personal	Splash goggles. Full suit. Vapor and dust respirator. Boots. Gloves. A self contained breathing

Protection in Case of a Large Spill	not be sufficient; consult a specialist BEFORE handling this product.
Exposure Limits	Not available.

Section 9. Physical and Chemical Properties

Physical state and appearance	Solid.
Molecular Weight	192.13
pH (1% soln/water)	1
Boiling Point	Decomposes.
Melting Point	153.C (307.4.F)
Critical Temperature	Not available.
Specific Gravity	1.665 (Water = 1)
Vapor Pressure	0 mm of Hg (@ 20.C)
Vapor Density	Not available.
Volatility	Not available.
Odor Threshold	Not available.
Evaporation rate	Not available.
Viscosity	Not available.
Water/Oil Dist. Coeff.	52.5
Ionicity (in Water)	Not available.
Dispersion Properties	See solubility in water.
Solubility	Easily soluble in cold water.

Odor	Not available.
Taste	Not available.
Color	Not available.

Section 10. Stability and Reactivity Data

Stability	The product is stable.
Instability Temperature	Not available.
Conditions of Instability	No additional remark.
Incompatibility with Various Substances	No specific information is available in our database regarding the reactivity of this material in presence of various other materials.
Corrosivity	Non-corrosive in presence of glass.
Special Remarks on Reactivity	No additional remark.
Special Remarks on Corrosivity	No additional remark.

Section 11. Toxicological Information

Routes of Entry	Ingestion. Inhalation.

Toxicity to Animals	Acute oral toxicity (LD50): 5040 mg/kg (Mouse).
Chronic Effects on Humans	The substance is toxic to mucous membranes. Toxicity of the product to the reproductive system: Not available.
Other Toxic Effects on Humans	Slightly dangerous to dangerous in case of ingestion, of inhalation. Very slightly to slightly dangerous in case of skin contact (irritant, permeator), of eye contact (irritant).
Special Remarks on Toxicity to Animals	No additional remark.
Special Remarks on Chronic Effects on Humans	No additional remark.
Special Remarks on other Toxic Effects on Humans	No additional remark.

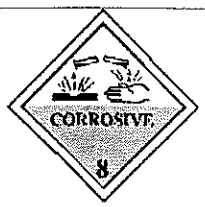
Section 12. Ecological Information

Ecotoxicity	Not available.
BOD5 and COD	Not available.
Products of Biodegradation	These products are carbon oxides (CO, CO2).
Toxicity of the Products of Biodegradation	The products of degradation are more toxic.
Special Remarks on the Products of Biodegradation	No additional remark.

Section 13. Disposal Considerations

Waste Disposal	Recycle to process, if possible. Consult your local or regional authorities.

Section 14. Transport Information

DOT Classification	DOT CLASS 8: Corrosive solid.
Identification	
Special Provisions for Transport	No additional remark.
DOT (Pictograms)	

Section 15. Other Regulatory Information and Pictograms

Federal and State Regulations

Superfund Amendments and Reauthorization Act of 1986 (SARA) Title III requires emergency planning based on Threshold Planning Quantities (TPQs) and release reporting based on Reportable Quantities (RQs) in 40 CFR 355 (used for SARA 302, 304, 311 and 312). Components present in this product at a level which could require reporting under the statute are:

NONE

Superfund Amendments and Reauthorization Act of 1986 (SARA) Title III requires submission of annual report release of toxic chemicals that appear in 40 CFR 372 (used for SARA 313). This information must be included in all MSDSs that are copied and distributed for this material. Components present in this product at a level which could require reporting under the statute are:

NONE

Pensylvania Right-To-Know, Hazardous substance List, Hazardous Substances and Special hazardous Substances on the list must be identified when present in products. Components present in this product at a level which could require reporting under the statute are:

NONE

Massachusetts Right-To-Know, Substance List (MSL) Hazardous Substances and Extraordinarily Hazardous Substances on the MSL must be identified when present in products. Components present in this product at a level which could require reporting under the statute are:

NONE

Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA) requires notification of the National Response Center of release of quantities of Hazardous Substances equal or greater than the reportable quantities (RQs) in 40 CFR 302.4. Components present in this product at a level which could require reporting under the statute are:

NONE

WARNING: This product contains a chemical known to the State of California to cause cancer. Chemical ingredient(s) requiring this warning:

NONE

WARNING: This product contains a chemical known to the State of California to cause birth defects or other reproductive harm. Chemical ingredient(s) requiring this warning: NONE

Other Classifications

WHMIS (Canada)

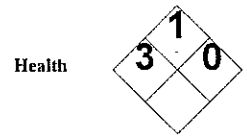
DSCL (EEC)

Other Classifications	WHMIS (Canada)
	DSCL (EEC)

HMIS (U.S.A.)

Health Hazard	0
Fire Hazard	1
Reactivity	0
Personal Protection	

National Fire Protection Association (U.S.A.)



Personal Protective Equipment

Protective Gloves.

Synthetic apron.

Vapor and dust respirator. Be sure to use a MSHA/NIOSH approved respirator or equivalent. Wear appropriate respirator when ventilation is inadequate.

Splash goggles.

Section 16. Other Information

References	Not available.		
Catalog Number(s)	C1280, C1281, CI131, CI133		
Other Special Considerations	No additional remark.		
Validated by	E. Brull on 12/17/96.	**Verified by Name**	E. Brull.
Emergency Phone:			
Notice to Reader	All chemicals may pose unknown hazards and should be used with caution. This Material Safety Data Sheet (MSDS) applies only to the material as packaged. If this product is combined with other materials, deteriorates, or becomes contaminated, it may pose hazards not mentioned in this MSDS. It shall be the user's responsibility to develop proper methods of handling and personal protection based on the actual conditions of use. While this MSDS is based on technical data judged to be reliable, Spectrum Chemical Mfg. Corp. assumes no responsibility for the completeness or accuracy of the information contained herein.		