			Cat No: 07-0050
solution until the desired of then dry.	color is achieved. V	solution until the desired color is achieved. Wash in running water for 15 minutes, then dry.	Photographers' Formulary
TROUBLESHOOTING	·		Cvanotype Kit
Problem		Explanation	
Areas of the coated surface were pre-exposed even before printing	surface were sfore printing.	The areas where the support was dried is too humid, OR the chemicals are too old.	This kit contains the chemicals to prepare 1000 ml of sensitizer solution
The emulsion on the negative was caten away during exposure	e negative ng exposure	The support was still damp when exposed.	to do application and the second from full cale and distinctive
The print started to develop in sunlight.	develop in	Coated surface too damp and started to activate the chemicals prematurely.	blue color. The process can be used to produce a pale white image on a blue blue color. The process can be used to produce a pale white image on a blue background or a blue image on a white background. Cyanotype is an ultraviolet contact printing process that requires a negative the same size as the print you wish.
Lintire print turned blue and overexposed while drying.	blue and Irying.	It was not washed enough. To prevent this, rinse well, and dry print in darkened room.	The image can be transferred to a variety of media; paper, cloth, leather, etc. The blue color of the print is due to Prussian blue formed from the reaction of ferrous ions (from photo reduction of the ferric ammonium citrate) and potassium
Stains remained in the skin after washing and would not come out.	he skin after not conte	Stains can be removed only by scrubbing with strong soap. Rubber gloves will prevent skin stains.	The restriction of the second first constructions are integered by perturbative, interest of the second first construction is the second second first concerned first second first construction between the second se
			CHEMICALS CONTAINED IN THIS KIT
ſ			This kit contains the following chemicals:       Amount         Chemical       Amount         arrowroot starch       20 g         potassium ferricyanide       40 g         ferric ammonium citrate (green scale)*       100 g         potassium dichromate       1 g         • Ferric ammonium citrate (green scale) is somewhat light sensitive and should be stored in the dark.
			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 need special attention:
		· .	potassium ferricyanide and potassium 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 are horizon account one for the contexium ferriculation is a dropt acid
			as nytrogen cyantoe gas it the polassium terrogantoe is preced in a strong act solution; however, strong acid is not used in the cyanotype process. To dispose of excess potassium ferricyanide (solid or in solution), wash the
	-		material down the sink with excess water. Potassium dichromate is both toxic and an oxidizer (supplies oxygen to a fire). To dispose of excess solid potassium dichromate always wash the solid down a drain with a large volume of water. Never dispose of the compound in a wastepaper
			basket. Spillage of a dichromate solution on the skin will cause a chemical burn, which will appear as an ulceration. In addition, all chromium salts are potential carcino- gens. We strongly advise you to use disposable rubber gloves when handling this compound or its solutions. Clean all trays and containers thoroughly with water
y ada J	Photographers' Formulary 800.922-5255	Formulary 5255 Cyanotype Kit	Photographers' Formulary Cvenotype Kit 800-922-5255

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# Material Safety Data Sheet

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

Section 1. Chemic	cal Product and Company Identi	fication				
Common Name/	Starch		. <u> </u>	Code	S4830	
Trade Name	Arrowroot	Starch		CAS#	9005-25-8	
Manufacturer	SPECTRUM CHEM	ICAL MFG. CORP.		RTECS	GM5090000	·····
	14422 SOUTH SAN			TSCA	On the TSCA li	st,
	GARDENA, CALIFO	DRNIA 90248-9985	<b>,</b>			
Commercial Name(	s) Not available			CI#	Not available.	
Synonym	Not available.			In case of emerg	ency.	
Chemical Name	Not available. Ama	Vrant Star	-ch	CHEMTREC (2	<u>4hr) 800-424-930</u>	<u>10</u>
Chemical Family	Not available.			Emergency pho	ne: (310) 516-800	A
Chemical Formula	Not available.			- Energency pro-		
Supplier	SPECTRUM QUALITY				ć	
N <sub>N</sub>	14422 S. SAN PEDRO GARDENA, CA 90248				1	1
Section 2. Comp	osition and Information on Ingre	adients				
				Exposure Limits		
Name		CAS#	TWA (mg/m3)	STEL (mg/m3)	CEIL (mg/m3)	.1
Starch		9005-25-8				100
Toxicological Data on Ingredients	Starch:					
Section 3. Hazar	ds Identification			- · ·		
Potential Acute Health Effects	Very slightly to slightly dangero of inhalation.	ous in case of skin	contact (irritant), of	eye contact (irri	tant), of ingestio	on,
						ì.
Potential Chronic	CARCINOGENIC EFFECTS: I EFFECTS: Not available. Toxi	Not available. MUT city of the product	AGENIC EFFECTS to the reproductive	S: Not available. system: Not ava	TERATOGENIC	C

Health Effects

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Section 4. First /	Aid Measures		· · · · · · · · · · · · · · · · · · ·	 			
Eye	NO known EFFECT o	n eye contact, rinse	with water for a	few minutes.			
Contact							
Skin Contact	If the chemical got on as possible, protectin chemical touches the contaminated skin wi crevices, creases and medical attention. Wa	g your own hands ar victim's exposed ski th running water and d groin. Cover the irri	nd body. Place t in, such as the l non-abrasive s itated skin with a	he victim unde nands: Gently : oap. Be partici an emollient. If	r a deluge sh and thoroughi Jarly careful t	ower. It the y wash the o clean folds,	
				·			
Hazardous Skin	No additional informa	tion.					
Contact							
Inhalation	Allow the victim to re	st in a well ventilated	l area. Seek imi	nediate medic	al attention.		
Hazardous J	No additional informa	ation.			4 M		
•							
Ingestion	Remove dentures if VOMITING by stickir and throat. NEVER g	na finaer in throat. Lo	ower the head s	o that the vom	it will not reen	ter the mouth	
<b>TT J</b> #	No additional inform	ation	1	······································			- 
Hazardous Ingestion	No additional inform						
		· .	:				
-							÷
		<u></u>	· · ·			<u></u>	- Warkers and the Sugar State
Section 5. Fire	and Explosion Data						, <sup>-</sup> .
Flamn	nability of the Product	Combustible.				-	
Auto	-Ignition Temperature	Not available.					
	Flash Points	Not available.					
	Flammable Limits	Not available.					

Produ	icts of Combustion	Not available.
	ards in Presence of Various Substances	No specific information is available in our database regarding the flammability of this product in presence of various materials.
	osion 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.
F	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.
on	Special Remarks Explosion Hazards	No additional remark.
East Accide	ental Release Measur	
Small Spill	Lies engrapriata tao	ils to put the spilled solid in a convenient waste disposal container. Finish ng water on the contaminated surface and dispose of according to local
Large opin	Line a abovel to put	ains no additional information in case of a spill and/or a leak of the product. the material into a convenient waste disposal container. Finish cleaning on the contaminated surface and allow to evacuate through the sanitary
n N <sub>a</sub>		
Section 7 Handl	ling and Storage	
Precautions	Koon away from he	eat. Keep away from sources of ignition. Empty containers pose a fire risk, due under a fume hood. Ground all equipment containing material. DO NOT
Storage	tightly closed. Keet	/. Keep in a cool place. Ground all equipment containing material. Keep container p in a cool, well-ventilated place. Combustible materials should be stored e heat and away from strong oxidizing agents.
	- In Doro	
Section 8. Expu	osure Controls/Perso	losures, local exhaust ventilation, or other engeneering controls to keep airborne
Engineering Controls	levels below reco use ventilation to	pmmended exposure limits. If user operations generate dust, tume or mist, keep exposure to airborne contaminants below the exposure limit.
Personal Protection		.ab coat.
	Splash goggles.	Full suit. Boots. Gloves. Suggested protective clothing might not be sufficient;

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### Protection in Case of a Large Spill

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Exposure TWA: 10 (mg/m) from ACGIH [1995] Consult local authorities for acceptable exposure limits. Limits

Section 9. Physical and Chemical	Properties			
		Odor	Not available.	
Physical state and appearance	Solid.	Taste	Not available.	
Molecular Weight	Not available.	Color	Not available.	
pH (1% soln/water)	Not available.			
Boiling Point	Not available.			
Melting Point	Decomposes.			
Critical Temperature	Not available.		- · · · · · · · · · · · · · · · · · · ·	
Specific Gravity	Not available.			
Vapor Pressure	Not available.			
Vapor Density	Not available.	·······		
Volatility	Not available.			
Odor Threshold	Not available.			
Evaporation rate	Not available.			
Viscosity Water/Oil Dist. Coeff.	Not available.			
Ionicity (in Water)	Not available.			
Dispersion Properties	Not available.			
Solubility	Not available.		· · · · · · · · · · · · · · · · · · ·	
Section 10. Stability and Reactivi	ty 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 ou of this material in presence of various of	r databas her mater	e regarding the reactivity ials.	
Corrosivity	Non-corrosive in presence of glass.			
Special Remarks on Reactivity	No additional remark.			
Special Remarks on Corrosivity	No additional remark.			
Section 11, Toxicological Inform	ation		· · · · · · · · · · · · · · · · · · ·	······································

Routes of Entry Ingestion.

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:

#### Starch

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

WHMIS (Canada)

DSCL (EEC)

Chronic Effects on Humans	Toxicity of the product to the reproductive system: Not available.
Other Toxic Effects on Humans	Very slightly to slightly dangerous in case of skin contact (irritant), of eye contact (irritant), of ingestion, of inhalation.
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	Nuisance dust.
ection 12. Ecological Information	7
Ecotoxicity	Not available.
BOD5 and COD	Not available.
Products of Biodegradation	Not available.
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 Considerati	ons
Waste Disposal	Recycle to process, if possible. Consult your local or regional authorities.
Section 14. Transport Informatio	n
DOT Classification	Not a DOT controlled material (United States).
Identification	Not applicable (PIN and PG).
Special Provisions for Transport	Not applicable.
DOT (Pictograms)	

Other Classifications	WHMIS (Canada)				
		· .			
	DSCL (EEC)				
				с (	
HMIS (U.S.A.)	Health Hazard	() National I	Fire Protection	-	<u>,</u>
	Fire Hazard	Associatio	n (U.S.A.)		Flammability
	Reactivity	0	Health		Reactivity
	Personal Protection				Specific hazard
					·····
	. :				
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Parsonal Protective Equipme	,				
Personal Protective Equipme	,				
Personal Protective Equipme	ent (V)				
Personal Protective Equipme	ent (V)				
Personal Protective Equipme	ent Lab co				
Personal Protective Equipme	ent Lab co	oat.		· · · · · · · · · · · · · · · · · · ·	
Personal Protective Equipme	ent Lab co	oat.			
Personal Protective Equipme	ent Lab co	oat.			
Personal Protective Equipme	ent Lab co	oat.	· · ·		
Personal Protective Equipme	ent Lab co	oat.	· · · · · · · · · · · · · · · · · · ·		
Personal Protective Equipme	ent Lab co	oat.			
Personal Protective Equipme	ent Lab co	oat.	· · · · · · · · · · · · · · · · · · ·		
Personal Protective Equipme	ent Lab co	oat.	· · · · · · · · · · · · · · · · · · ·		
Personal Protective Equipme	ent Lab co	oat.			

	References	Not available.				·
			•			
		· · · · · · · · · · · · · · · · · · ·				
		04554 04550 04550 04554 0	4667			
(	Catalog Number(s)	S1551, S1552, S1553, S1554, S	1557			
<b></b> .	Other Special	No additional remark.				
	Considerations				· · · · · · · · · · · · · · · · · · ·	
	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 Safety Data Sheet (MSDS) appli	es only to the materi	al as package	d. If this produ	ict
		is combined with other materials hazards not mentioned in this M	SDS. It shall be the u	user's responsi	bility to develo	op proper
	<i>i.</i>	methods of handling and person	al protection based o	on the actual co	onditions of us	se. While
		this MSDS is based on technica Corp. assumes no responsibility	for the completenes	s or accuracy	of the informa	tion
		contained herein.	•	•		
<u> </u>				- · · · · · · · · · · · · · · · · · · ·		
			- -	•	•	
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10-1010





# **Material Safety Data Sheet**

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

Common Name/	Potassium ferric	yanide		Code	P4290	
Trade Name	· ·			CAS#	13746-66-2	
Manufacturer	SPECTRUM CHEM	ICAL MFG. CORP.		RTECS	LJ8225000	
				TSCA	On the TSCA li	st.
Commercial Name(s)	Not available		<u></u>	 CI#	Not available.	
Synonym	Potassium hexacyanof	errate (III)	· · · · · · · · · · · · · · · · · · ·	In case of emerg	епсу	
Chemical Name	potassium ferricyanide	ut tay er		CHEMTREC (2	<u>4hr) 800-424-930</u>	<u>0</u>
Chemical Family	Not available.		-	- F	no. (310) 516 800	n
Chemical Formula	K3Fe(CN)6			- Emergency pro	ae. (310) 310-800	0
Supplier	SPECTRUM QUALITY	PRODUCTS				
	14422 S. SAN PEDRO	STREET		·		
	GARDENA, GA 90248	-9985				
Section 2 Composition	and Information on Ingr	edients				
	······································			Francisco Finita		
	SPECTRUM CHEMICAL MFG. CORP. 14422 SOUTH SAN PEDRO STREET GARDENA, CALIFORNIA 90248-9985       RTECS       LJ8225000         Not available       TSCA       On the TSCA list.         Potassium ferricyanide       CI#       Not available.         Potassium ferricyanide       CHEMTREC (24hr) 800-424-9300         Not available.       Emergency         Potassium ferricyanide       CHEMTREC (24hr) 800-424-9300         K3Fe(CN)6       Emergency phone: (310) 516-8000         SPECTRUM QUALITY PRODUCTS 14422 S. SAN PEDRO STREET GARDENA, GA 90248-9985					
SFECTROMONICATION PEDRO STREET GARDENA, CALIFORNIA 90248-9985       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       Emergency phone: (310) 516-8000         Supplier       SPECTRUM QUALITY PRODUCTS 14422 S. SAN PEDRO STREET GARDENA, GA 90248-9985 • •          Section 2. Composition and Information on Ingredients       Exposure Limits       100         Name       CAS#       TWA (mg/m3)       STEL (mg/m3)       CEIL (mg/m3)       % by W						
Potassium ferricyanide		13746-66-2				100
Toxicological Data	Potassium ferricya	nide:			·····	
_						
Parties 7 Herordo Ida						
			1 ( ( ) ( ) - ( ) - ( )			
of inh	ly dangerous to dangero	us in case of skin c lightly dangerous in	ontact (irritant), or o case of skin conta	eye contact (irrita act (permeator)	int), of ingestion This product	1,
, icuto movie	rritate eves and skin upo	n contact.	Case of skin conte	iot (pornicator).	nio produot	
11cartin -	······································		·			
Effects						
				·		
			ν.			
Potential CAR	CINOGENIC EFFECTS:	Not available MUT	AGENIC FEFECTS	S: Not available	TERATOGENIC	

Effects	can produce target or	gans damage.					
				. 1			
2 L	: · · ·						
	·			·			
Section 4. First .		· · · · · · · · · · · · · · · · · · ·					
Eye Contact	Check for and remove at least 15 minutes, k ointment. Seek medic	eeping eyelids al attention.	open. COLD wa	ter may be use	d. DO NOT use	e an eye	
Skin Contact	If the chemical got on as possible, protectin chemical touches the contaminated skin wi crevices, creases and If irritation persists, so	g your own har victim's expos th running wate d groin, COLD v	nds and body. Pl ed skin, such as er and non-abras water may be us	ace the victim t the hands: Ge ive soap. Be pa ed. Cover the i	under a deluge ntly and thorou articularly caref rritated skin wit	shower. If the ghly wash the ful to clean folds, h an emollient.	
Hazardous Skin	Wash with a disinfect medical attention.	ant soap and c	cover the contam	inated skin with	n an anti-bacte	rial cream. Seek	
Contact							
Inhalation	Allow the victim to re	st in a well ven	tilated area. See	k immediate m	edical attention	l.	
Innasation		· · · · · · · · · · · · · · · · · · ·	-	· .			
Hazardous	No additional information	ation.					
Inhalation			_				
Ingestion	Remove dentures if a VOMITING by stickir and throat. NEVER g	ha finaer in thro	at. Lower the he	àd so that the ۱	vomit will not re	enter the mouth	
Hazardous Ingestion	No additional information of the second seco	ation.					
	· ·						
-							
-							
·				<u></u>			
Section 5. Fire	and Explosion Data						
	and Explosion Data	Non-flammal	ble.				
Flamr							
Flamr	nability of the Product	Non-flammal Not applicab Not applicab	le.				

Produ	cts of Combustion	Not applicable.		
	ards in Presence of arious 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.		
F	ire Fighting Media and Instructions	Non-flammable.		
	Special Remarks on Fire Hazards	No additional remark.		
on	Special Remarks Explosion Hazards	No additional remark.		
ection 6. Accide	ental Release Measu	Ires		
	I la anavanista ta	ols to put the spilled solid in a convenient waste disposal container. Finish ling water on the contaminated surface and dispose of according to local		
Large Spill		ains no additional information in case of a spill and/or a leak of the product. It the material into a convenient waste disposal container. Finish cleaning r on the contaminated surface and allow to evacuate through the sanitary		
		• • •		
ection 7. Hand	ling and Storage			
Precautions	DO NOT ingest. D equipment. If inge Avoid contact with	DO NOT breathe dust. In case of insufficient ventilation, wear suitable respiratory sted, seek medical advice immediately and show the container or the label. In skin and eyes.		
Storage	No specific storag the chemicals. Be are not overloade	ge is required. Use shelves or cabinets sturdy enough to bear the weight of e sure that it is not necessary to strain to reach materials, and that shelves ed.		
Section 8. Expc	sure Controls/Pers			
Engineering Controls	levels below rec use ventilation to	closures, local exhaust ventilation, or other engeneering controls to keep airborne commended exposure limits. If user operations generate dust, fume or mist, o keep exposure to airborne contaminants below the exposure limit.		
Personal Protection	C American C	. Lab coat. Dust respirator. Be sure to use a MSHA/NIOSH approved respirator sloves (impervious). Wear appropriate respirator when ventilation is inadequate.		

Case of a Suncient, consi Large Spill	It a specialist BEFORE handling this pro		
Exposure Not available. Limits			-
Section 9. Physical and Chemical	Properties		
Physical state	Solid.	Odor Not available.	
and appearance		Taste Not available.	
Molecular Weight	329.25		
pH (1% soln/water)	Not available.	Color Not available.	
Boiling Point	Not available.		WINDOW 10 - 1
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.		<u> </u>
Solubility	Soluble in cold water.	· · · · · · · · · · · · · · · · · · ·	
Section 10. Stability and Reactivi	ty Data		
Stability	The product is stable.		
Instability Temperature	Not available.		THE T
Conditions of Instability	No additional remark.		
Incompatibility with Various Substances	No specific information is available in o of this material in presence of various o		
Corrosivity	Non-corrosive in presence of glass.	:	
Special Remarks on Reactivity	No additional remark.		
Special Remarks on Corrosivity	No additional remark.	·	
Section 11. Toxicological Inform	ation		
Routes of Entry	Ingestion. Inhalation.		<u></u>

Toxicity to Animals	LD50: Not available. LC50: Not available.
a anna an an an Anna an Anna an Anna an Anna an Anna an Anna	· · · · · · · · · · · · · · · · · · ·
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	n
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 Consideration	ons
Waste Disposal	Recycle to process, if possible. Consult your local or regional authorities.
Section 14. Transport Information	n
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)	

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.

		toxic effects (VERY TOXIC).
	DSCL (EEC)	R37- Irritating to respiratory system. R42- May cause sensitization by inhalation.
	Health Hazard	
HMIS (U.S.A.)	Fire Hazard Reactivity Personal Protection	1     National Fire Protection Association (U.S.A.)     Flammability       0     2     0     Reactivity       1     1     1     1       1     1
Personal Protective Equipmen	t Pro	tective Gloves (impervious).
		o coat.
		st respirator. Be sure to use a MSHA/NIOSH proved respirator or equivalent. Wear appropriate pirator when ventilation is inadequate.
	Spi	ash goggles.

References	Not available.			
10101010000				
-				
	D4005 D4000			
Catalog Number(s)	P1285, P1286			
Other Special	No additional remark.			
Considerations	No additional remark.			
Considerations				
Validated by	E, Brull on 12/17/96.	Verified by E. E	Brull.	
•		Name		
<b>Emergency Phone:</b>	(310)516-8000			
Notice to Reader	All chemicals may pose unknown	hazards and should be u	used with caution. This Materia	al
<u></u>	All chemicals may pose unknown Safety Data Sheet (MSDS) applie	s only to the material as	packaged. If this product	al
<u></u>	All chemicals may pose unknown Safety Data Sheet (MSDS) applie is combined with other materials.	s only to the material as deteriorates, or becomes	packaged. If this product s contaminated, it may pose	
<u></u>	All chemicals may pose unknown Safety Data Sheet (MSDS) applie is combined with other materials, bazards not mentioned in this MS	s only to the material as deteriorates, or becomes DS, It shall be the user's	packaged. If this product s contaminated, it may pose s responsibility to develop prop	ber
<u></u>	All chemicals may pose unknown Safety Data Sheet (MSDS) applie is combined with other materials, hazards not mentioned in this MS methods of handling and persona	s only to the material as deteriorates, or becomes DS. It shall be the user's I protection based on the	packaged. If this product s contaminated, it may pose responsibility to develop prop actual conditions of use. Whi	ber
<u></u>	All chemicals may pose unknown Safety Data Sheet (MSDS) applie is combined with other materials, hazards not mentioned in this MS methods of handling and persona this MSDS is based on technical of	s only to the material as deteriorates, or becomes DS. It shall be the user's I protection based on the data judged to be reliable	packaged. If this product s contaminated, it may pose responsibility to develop prop actual conditions of use. Whi s, Spectrum Chemical Mfg.	ber
	All chemicals may pose unknown Safety Data Sheet (MSDS) applie is combined with other materials, hazards not mentioned in this MS methods of handling and persona this MSDS is based on technical of Corp. assumes no responsibility f	s only to the material as deteriorates, or becomes DS. It shall be the user's I protection based on the data judged to be reliable	packaged. If this product s contaminated, it may pose responsibility to develop prop actual conditions of use. Whi s, Spectrum Chemical Mfg.	ber
<u></u>	All chemicals may pose unknown Safety Data Sheet (MSDS) applie is combined with other materials, hazards not mentioned in this MS methods of handling and persona this MSDS is based on technical of	s only to the material as deteriorates, or becomes DS. It shall be the user's I protection based on the data judged to be reliable	packaged. If this product s contaminated, it may pose responsibility to develop prop actual conditions of use. Whi s, Spectrum Chemical Mfg.	er
	All chemicals may pose unknown Safety Data Sheet (MSDS) applie is combined with other materials, hazards not mentioned in this MS methods of handling and persona this MSDS is based on technical of Corp. assumes no responsibility f	s only to the material as deteriorates, or becomes DS. It shall be the user's I protection based on the data judged to be reliable	packaged. If this product s contaminated, it may pose responsibility to develop prop actual conditions of use. Whi s, Spectrum Chemical Mfg.	er
<u></u>	All chemicals may pose unknown Safety Data Sheet (MSDS) applie is combined with other materials, hazards not mentioned in this MS methods of handling and persona this MSDS is based on technical of Corp. assumes no responsibility f	s only to the material as deteriorates, or becomes DS. It shall be the user's I protection based on the data judged to be reliable	packaged. If this product s contaminated, it may pose responsibility to develop prop actual conditions of use. Whi s, Spectrum Chemical Mfg.	er
<u></u>	All chemicals may pose unknown Safety Data Sheet (MSDS) applie is combined with other materials, hazards not mentioned in this MS methods of handling and persona this MSDS is based on technical of Corp. assumes no responsibility f	s only to the material as deteriorates, or becomes DS. It shall be the user's I protection based on the data judged to be reliable	packaged. If this product s contaminated, it may pose responsibility to develop prop actual conditions of use. Whi s, Spectrum Chemical Mfg.	er
<u></u>	All chemicals may pose unknown Safety Data Sheet (MSDS) applie is combined with other materials, hazards not mentioned in this MS methods of handling and persona this MSDS is based on technical of Corp. assumes no responsibility f	s only to the material as deteriorates, or becomes DS. It shall be the user's I protection based on the data judged to be reliable	packaged. If this product s contaminated, it may pose responsibility to develop prop actual conditions of use. Whi s, Spectrum Chemical Mfg.	er
	All chemicals may pose unknown Safety Data Sheet (MSDS) applie is combined with other materials, hazards not mentioned in this MS methods of handling and persona this MSDS is based on technical of Corp. assumes no responsibility f	s only to the material as deteriorates, or becomes DS. It shall be the user's I protection based on the data judged to be reliable	packaged. If this product s contaminated, it may pose responsibility to develop prop actual conditions of use. Whi s, Spectrum Chemical Mfg.	ber
	All chemicals may pose unknown Safety Data Sheet (MSDS) applie is combined with other materials, hazards not mentioned in this MS methods of handling and persona this MSDS is based on technical of Corp. assumes no responsibility f	s only to the material as deteriorates, or becomes DS. It shall be the user's I protection based on the data judged to be reliable	packaged. If this product s contaminated, it may pose responsibility to develop prop actual conditions of use. Whi s, Spectrum Chemical Mfg.	ber
<u></u>	All chemicals may pose unknown Safety Data Sheet (MSDS) applie is combined with other materials, hazards not mentioned in this MS methods of handling and persona this MSDS is based on technical of Corp. assumes no responsibility f	s only to the material as deteriorates, or becomes DS. It shall be the user's I protection based on the data judged to be reliable	packaged. If this product s contaminated, it may pose responsibility to develop prop actual conditions of use. Whi s, Spectrum Chemical Mfg.	er
<u></u>	All chemicals may pose unknown Safety Data Sheet (MSDS) applie is combined with other materials, hazards not mentioned in this MS methods of handling and persona this MSDS is based on technical of Corp. assumes no responsibility f	s only to the material as deteriorates, or becomes DS. It shall be the user's I protection based on the data judged to be reliable	packaged. If this product s contaminated, it may pose responsibility to develop prop actual conditions of use. Whi s, Spectrum Chemical Mfg.	er
<u></u>	All chemicals may pose unknown Safety Data Sheet (MSDS) applie is combined with other materials, hazards not mentioned in this MS methods of handling and persona this MSDS is based on technical of Corp. assumes no responsibility f	s only to the material as deteriorates, or becomes DS. It shall be the user's I protection based on the data judged to be reliable	packaged. If this product s contaminated, it may pose responsibility to develop prop actual conditions of use. Whi s, Spectrum Chemical Mfg.	er

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# Material Safety Data Sheet

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

Section 1. Chemic	cal Product and Company Ider	tification			*		
Common Name/	Ferric ammoni	um citrate	Allan	Code	F3087		
Trade Name				CAS#	1185-57-5		
Manufacturer		1 CHEMICAL MFG. CORP.		RTECS	GE7540000		
178411411111111111111111111111111111111		14422 SOUTH SAN PEDRO STREET			On the TSCA lis	st.	
	-	FORNIA 90248-9985					
	- , ,				Not available.		
Commercial Name(				Cl#	Not available.		
Synonym	Not available.			In case of emergency			
Chemical Name			-	CHEMTREC (2	24hr) 800-424-930	0	
Chemical Family	Not available.			-			
Chemical Formula Not available.				Emergency pho	ne: (310) 516-8000	)	
		7/70000070			-		
Supplier SPECTRUM QUA 14422 S. SAN PE		TY PRODUCTS					
1. 1. 1.	GARDENA, CA 902						
Section 2. Comp	osition and Information on Ing	gredients	-				
	, , , , , , , , , , , , , , , , , , ,			Exposure Limits			
Name		CAS#	TWA (mg/m3)	STEL (mg/m3)	CEIL (mg/m3)	% by Weight	
Ferric ammoniur	n citrate	1185-57-5	÷ -			100	
Toxicological Dat: on Ingredients	a Ferric ammoniun	n citrate:					
Section 3. Hazai	rds Identification						
Potential Acute Health Effects	Very dangerous in case of e contact (irritant), of ingestior eyes and skin upon contact. itching.	of inhalation. This	product is an eye in	ritant. This produ	ict may irritate	·.	
Potential Chronic	Very dangerous in case of e contact (irritant), of ingestio	eye contact (irritant). n, of inhalation. CAR	Slightly dangerous	to dangerous in CTS: Not availal	case of skin ble. MUTAGENI	С	

	alth fects	EFFECTS: Not available. TERATOGENIC El reproductive system: Not available.	FFECTS: Not available. Toxicity of the product to the
· .			
		de la companya de la	••
ction 4.	First 7	Nd Measures	
<u></u>	Eye	Check for and remove any contact lenses. Il	MMEDIATELY flush eyes with running water for
Сог	ntact	at least 15 minutes, keeping eyelids open. C ointment. Seek medical attention.	COLD water may be used. DO NOT use an eye
	Skin ntact	as possible, protecting your own hands and chemical touches the victim's exposed skin, contaminated skin with running water and no crevices, creases and groin COLD water m	of the body, remove the contaminated clothes as quickly I body. Place the victim under a deluge shower. If the , such as the hands: Gently and thoroughly wash the ion-abrasive soap. Be particularly careful to clean folds, hay be used. Cover the irritated skin with an emollient. Wash contaminated clothing before reusing.
Hazar	dous Skin	Wash with a disinfectant soap and cover the medical attention.	e contaminated skin with an anti-bacterial cream. Seek
	ntact		
Inhal	ation	Allow the victim to rest in a well ventilated a	area. Seek immediate medical attention.
Hazaı	rdous	No additional information.	
Inhal	lation		
No.			
Inge	estion	is causing the obstruction but do not force t	truction in the victim's mouth. Remove if possible what fingers or a hard object between the victim's teeth. Have water or milk. INDUCE VOMITING by sticking finger n.
	rdous estion	No additional information.	
		· · · · · · · · · · · · · · · · · · ·	
Section	5. Fire	and Explosion Data	
Section		and Explosion Data nability of the Product Combustible.	
Section	Flam	nability of the ProductCombustible.Ignition TemperatureNot available.	
ection	Flam	nability of the Product Combustible.	
ection	Flam	nability of the ProductCombustible.Ignition TemperatureNot available.	

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	s of Combustion	Not available.			
	ds in Presence of rious 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.			
Fir	e 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.			
on E	Special Remarks xplosion Hazards	No additional remark.			
ation 6 Acciden	tal Release Measu	//es			
Small Spill U		ols to put the spilled solid in a convenient waste disposal container. Finish ing water on the contaminated surface and dispose of according to local			
Large Spill C	Our database cont Jse a shovel to pu	ains no additional information in case of a spill and/or a leak of the product. t the material into a convenient waste disposal container.			
х х					
ection 7. Handlir	ig and Storage				
r recautions	evaporate the resingest. DO NOT b Ingested, seek n with skin and eyes				
Otorage	tightly closed. Kee	y. Keep in a cool place. Ground all equipment containing material. Keep container ep in a cool, well-ventilated place. Combustible materials should be stored he heat and away from strong oxidizing agents.			
Section 8. Expos	ure Controls/Pers	onal Protection			
Engineering	levels below rec use ventilation t	closures, local exhaust ventilation, or other engeneering controls to keep airborne commended exposure limits. If user operations generate dust, fume or mist, o keep exposure to airborne contaminants below the exposure limit.			
Controls		the second secon			
Controls Personal Protection	Out-there are less	Lab coat. Dust respirator. Be sure to use a MSHA/NIOSH approved respirator loves (impervious). Wear appropriate respirator when ventilation is inadequate.			

Large Spill				
Exposure TWA: 1 CEIL: 2 Limits	2 (mg/m3) Consult local authorities for acceptable exposure limits.			
ion 9. Physical and Chemical	Properties			
Physical state	Solid. Odor Not available.			
and appearance	Taste Not available.			
Molecular Weight	Not available.			
pH (1% soln/water)	Not available.			
Boiling Point	Not available.			
Melting Point	Decomposes.			
Critical Temperature	Not available.			
Specific Gravity	Not available.			
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.			
	·			
tion 10. Stability and Reactive	rity Data -			
Stability	The product is stable.			
Instability Temperature	Not available.	·		
Conditions of Instability	No additional remark.			
Incompatibility with	No specific information is available in our database regarding the reactivity			
Various Substances	of this material in presence of various other materials.			
Corrosivity	No specific information is available in our database regarding the corrosivity of this product in presence of various materials.			
Special Remarks on Reactivity				
Special Remarks on Corrosivity				

Routes of Entry Ingestion. Inhalation.

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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:

### Ferric ammonium citrate

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:

### Ferric ammonium citrate

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:

### Ferric ammonium citrate

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-2B: Material causing other toxic effects (TOXIC).

on Humans Other Toxic V Effects on Humans in Special Remarks on N Toxicity to Animals Special Remarks N on Chronic Effects on Humans Special Remarks N on other Toxic Effects on Humans Section 12. Ecological Information Ecotoxicity N BOD5 and COD M Products of M Biodegradation	Toxicity of the product to the reproductive system: Not available.         /ery dangerous in case of eye contact (irritant). Slightly dangerous to dangerous n case of skin contact (irritant), of ingestion, of inhalation.         No additional remark.         Not available.         Not available.         Not available.         Not available.         The products of degradation are more toxic.
on Humans Other Toxic V Effects on Humans in Special Remarks on N Toxicity to Animals Special Remarks N on Chronic Effects on Humans Special Remarks N on other Toxic Effects on Humans Section 12. Ecological Information Ecotoxicity N BOD5 and COD N Products of M Biodegradation	Very dangerous in case of eye contact (irritant). Slightly dangerous to dangerous in case of skin contact (irritant), of ingestion, of inhalation. No additional remark. No additional remark. No additional remark. No additional remark. Not available. Not available. Not available.
Effects on Humans in Special Remarks on N Toxicity to Animals Special Remarks N on Chronic Effects on Humans Special Remarks N on other Toxic Effects on Humans Section 12. Ecological Information Ecotoxicity N BOD5 and COD N Products of M Biodegradation Toxicity of the Products of	n case of skin contact (irritant), of ingestion, or innalation. No additional remark. No additional remark. No additional remark. Not available. Not available.
Toxicity to Animals Special Remarks N on Chronic Effects on Humans Special Remarks N on other Toxic Effects on Humans Section 12. Ecological Information Ecotoxicity N BOD5 and COD N Products of M Biodegradation Toxicity of the Products of	No additional remark. No additional remark. Not available. Not available. Not available.
Special Remarks N on Chronic Effects on Humans Special Remarks N on other Toxic Effects on Humans Section 12. Ecological Information Ecotoxicity N BOD5 and COD N Products of M Biodegradation Toxicity of the Products of	No additional remark. Not available. Not available. Not available.
on other Toxic Effects on Humans Section 12. Ecological Information Ecotoxicity BOD5 and COD Products of Biodegradation Toxicity of the Products of	Not available. Not available. Not available.
Ecotoxicity BOD5 and COD Products of Biodegradation Toxicity of the Products of	Not available. Not available. Not available.
BOD5 and COD Products of Biodegradation Toxicity of the Products of	Not available. Not available.
Products of Biodegradation Toxicity of the Products of	Not available.
Biodegradation Toxicity of the Products of	Not available.
Products of	The products of degradation are more toxic.
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Special Remarks on the Products of Biodegradation	No additional remark.
Section 13. Disposal Consideration	
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	NA9118 III
Special Provisions for Transport	Not applicable.
DOT (Pictograms)	

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	WHMIS (Canada) WHMIS CLASS D-2B: Material causing other toxic effects (TOXIC).	
	DSCL (EEC) R36- Irritating to eyes.	
HMIS (U.S.A.)	Health Hazard     2     National Fire Protection       Fire Hazard     1     Association (U.S.A.)       Reactivity     0     Health       Personal Protection     Specific hazar	
Personal Protective Equipme	ent Protective Gloves (impervious).	
·	Lab coat.	
	approved respirator or equivalent. Wear appropriate respirator when ventilation is inadequate.         Splash goggles.	

References	Not available.		
		• .	
		·	•
Catalog Number(s)	F1000, F1001, FE105		
_	· · · · · · · · · · · · · · · · · · ·		
Other Special	No additional remark.		
Considerations			۰ <i>٤</i>
Validated by	E. Brull on 12/17/96.	Verified by E. Brull.	
		Name	
Emergency Phone:	(310)516-8000		
Notice to Reader	All chemicals may pose unknow	n hazards and should be used with ca	ution. This Material
	<ul> <li>Safety Data Sheet (MSDS) appl</li> </ul>	lies only to the material as packaged. If	r this product
	is combined with other materials	s, deteriorates, or becomes contaminat	ed, it may pose
$e_{\rm e} = e_{\rm e}$	methods of handling and persor	ISDS. It shall be the user's responsibili nal protection based on the actual conc	litions of use. While
	this MSDS is based on technica	at data judged to be reliable. Spectrum	Chemical Witg.
	Corp. assumes no responsibility	for the completeness or accuracy of t	he information
	contained herein.		
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## **Material Safety Data Sheet**

HMIS		Personal Protective Equipment		
Health Hazard	(2)			
Fire Hazard	(0)			
Reactivity	0	See Section 15.		
-	Fire Hazard	Fire Hazard O		

Common Name/	Potassium dichromate	Code	P4280	
Trade Name		CAS#	7778-50-9	
Manufacturer	SPECTRUM CHEMICAL MFG. CORP.	RTECS	HX7680000	
	14422 SOUTH SAN PEDRO STREET	TSCA	On the TSCA list.	
	GARDENA, CALIFORNIA 90248-9985			
Commercial Name(s)	Not available	CI#	Not available.	
Synonym	Not available.	In case of em	In case of emergency	
Chemical Name	Not available.	CHEMTRE	CHEMTREC (24hr) 800-424-9300	
Chemical Family	Not available.	Emergency	ohone: (310) 516-8000	
Chemical Formula	K2Cr2O7			
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 dichromate	7778-50-9				100
Toxicological Data Potassi	um dichromate:			<u></u>	

on Ingredients

Section 3. Hazards Identification

Potential<br/>AcuteVery dangerous in case of skin contact (irritant), of eye contact (irritant), of ingestion. Slightly dangerous<br/>to dangerous in case of inhalation. Very slightly to slightly dangerous in case of skin contact (corrosive,<br/>permeator). This product may irritate eyes and skin upon contact. Inflammation of the eye is characterized<br/>by redness, watering, and itching. Skin inflammation is characterized by itching, scaling, reddening,<br/>or, occasionally, blistering.

Potential Chronic CARCINOGENIC EFFECTS: Classified A1 by ACGIH. 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 Check for and remove any contact lenses. IMMEDIATELY flush eyes with running water for Eye at least 15 minutes, keeping eyelids open. COLD water may be used. DO NOT use an eye Contact ointment. Seek medical attention. If the chemical got onto the clothed portion of the body, remove the contaminated clothes as quickly Skin as possible, protecting your own hands and body. Place the victim under a deluge shower. If the Contact 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. Wash with a disinfectant soap and cover the contaminated skin with an anti-bacterial cream. Seek Hazardous medical attention. Skin Contact Allow the victim to rest in a well ventilated area. Seek immediate medical attention. Inhalation No additional information. Hazardous Inhalation Remove dentures if any. Have conscious person drink several glasses of water or milk. INDUCE Ingestion 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. 14 No additional information. Hazardous Ingestion 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.

Produ	cts of Combustion	Not applicable.			
—	ards in Presence of Jarious Substances	Not applicable.			
-	sion in Presence of /arious 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.			
qq	ire Fighting Media and Instructions	Non-flammable.			
	Special Remarks on Fire Hazards	No additional remark.			
on	Special Remarks Explosion Hazards	No additional remark.			
Section F. Accide	ental Release Measu	res			
		ols to put the spilled solid in a convenient waste disposal container. Finish ng water on the contaminated surface and dispose of according to local			
Large Spill	I I hours it in put	ains no additional information in case of a spill and/or a leak of the product. the material into a convenient waste disposal container. Finish cleaning on the contaminated surface and allow to evacuate through the sanitary			
Section 7. Handl	ing and Storage				
Precautions	Keep locked up. D suitable respiratory	O NOT ingest. DO NOT breathe dust. In case of insufficient ventilation, wear equipment. If ingested, seek medical advice immediately and show the bel. Avoid contact with skin and eyes. Keep away from incompatibles as ombustible materials, organic materials.			
Storage	Carcinogenic, tera storage cabinet or	togenic or mutagenic materials should be stored in a separate locked safety room.			
Section 8. Expo	sure Controls/Perso	nal Protection			
Engineering Controls	Use process end levels below reco use ventilation to	losures, local exhaust ventilation, or other engeneering controls to keep airborne ommended exposure limits. If user operations generate dust, fume or mist, keep exposure to airborne contaminants below the exposure limit.			
Personal Protection	Outesta acadoo	Lab coat. Dust respirator. Be sure to use a MSHA/NIOSH approved respirator over (impervious). Wear appropriate respirator when ventilation is inadequate.			
Personal	Splash goggles.	Full suit. Dust respirator. Boots. Gloves. A self contained breathing apparatus			

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sufficient; consult a specialist BEFORE handling this product. Case of a *r* -Large Spill e.

TWA: 0.05 (mg/m) from ACGIH Consult local authorities for acceptable exposure limits. Exposure Limits

Section 9. Physical and Chemical	Properties	
Physical state	Solid.	Odor Not available.
and appearance	204.0	Taste Not available.
Molecular Weight	294.2	Color Not available.
pH (1% soln/water)	Not available.	
Boiling Point	Decomposes. (500 .C or 932.F)	
Melting Point	398.C (748.4.F)	
Critical Temperature	Not available.	·
Specific Gravity	2.676 (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, hot water.	· · · · · · · · · · · · · · · · · · ·
- \Y <sup>2</sup> -		· · ·
Section 10. Stability and Reactivi	ity Data	**
Stability	The product is stable.	
Instability Temperature	Not available.	
Conditions of Instability	No additional remark.	
Incompatibility with	Slightly reactive to reactive with redu	icing agents, combustible materials, organic
Various Substances	materials.	· · · ·
Corrosivity	Non-corrosive in presence of glass.	
Special Remarks	No additional remark.	
on Reactivity		
Special Remarks on Corrosivity	No additional remark.	
Section 11. Toxicological Inform		
Routes of Entry	Ingestion. Inhalation.	

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	LD50; Not available, LC50; Not available,
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Chronic Effects on Humans	CARCINOGENIC EFFECTS: Classified A1 by ACGIH. The substance is toxic to lungs, mucous membranes. Toxicity of the product to the reproductive system: Not available.
Other Toxic Effects on Humans	Very dangerous in case of skin contact (irritant), of eye contact (irritant), of ingestion. Slightly dangerous to dangerous in case of inhalation. Very slightly to slightly dangerous in case of skin contact (corrosive, permeator).
Special Remarks on Toxicity to Animals	No additional remark.
Special Remarks on Chronic Effects on Humans	Passes through the placental barrier in animal.
Special Remarks on other Toxic Effects on Humans	No additional remark.
Section 12. Ecological Informatio	<i>n</i>
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 Consideration	ons
Waste Disposal	Recycle to process, if possible. Consult your local or regional authorities.
Section 14. Transport Information	
DOT Classification	DOT CLASS 5.1: Oxidizer.
Identification	Oxidizing solid, n.o.s. (Potassium dichromate) UN1479 III
Special Provisions for Transport	No additional remark.
DOT (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:

Potassium dichromate

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

Potassium 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 Classifications

WHMIS (Canada)

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

DSCL (EEC)

R39- Danger of very serious irreversible effects. R42- May cause sensitization by inhalation.

Other Classifications	WHMIS (Canat	da) WHMIS CLASS D-2A: Material causing other toxic effects (VERY TOXIC).
	DSCL (EEC) R39- Danger of very serious irreversible effects. R42- May cause sensitization by inhalation. R45- May cause cancer. R36/37/38- Irritating to eyes, respiratory system and skin.	
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HMIS (U.S.A.)	Health Hazard Fire Hazard Reactivity Personal Protecti	Image: Constraint of the constr
Personal Protective Equipmen	t C	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.
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	References	Not available.	•			: .	
	Catalog Number(s)	P1281, P1282, P1283					
· · ·	Other Special	No additional remark.					
	Considerations	No additional remark.					
	Consider ations					1	
	Validated by	E. Brull on 12/17/96.	Verified by	E. Brull.			
			Name				
	Emergency Phone:	(310)516-8000					
	~	(310)310-0000					
·····	Notice to Reader	Notice to Reader All chemicals may	v nose unknown ha	azards and sho	uld he use	d with	
		caution. This Material Safety Data	Sheet (MSDS) app	lies only to the	material a	s packade	1.
		If this product is combined with other	er materials, deteri	orates, or beco	omes conta	minated,	
		it may pose hazards not mentioned					
		to develop proper methods of hand	ling and personal (	protection base	ed on the a	ctual condi	tions
		of use. While this MSDS is based of Chemical Mfg. Corp. assumes no r					
		Onenical mig. Corp. assumes no r		e completenes.			
		the information contained herein					
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