

8280

INK - MARKING

8280

Chemical Identity



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**MARKEM®**

## Ink Material Safety Data Sheets

Enclosed are copies of Markem Ink MSDS Forms designed to meet the requirements of the OSHA Hazard Communication Standard 29 CFR 1910.1200.

Markem Inks are made of many components, some of which are considered to be hazardous within the meaning of the Hazard Communication Act. Rather than characterize each ink mixture as a whole, Markem has elected to provide MSDS information for each hazardous ingredient separately. By using the MSDS Cross-Reference List, you may select the MSDS forms which apply to the hazardous ingredients in any Markem Ink. This combination of MSDS forms satisfies the MSDS requirements of the Hazard Communication Act.

Since these forms describe every Markem Ink, you will not need separate forms for each series and color that you use.

Please note that there have been no changes either in the contents of our inks or in the process by which they are made, nor do these MSDS forms describe new hazards for our products.

MSDS forms for Markem cleaners and thinners will continue to be sent individually with each shipment.

We value you as a customer and want to be sure you have our current safety information. We ask that you destroy all earlier undated Markem Ink MSDS forms as they have now been superseded by this new package. Please let us know if you require additional copies of the MSDS package or if you have any questions about the safe use of our products.

MARKEM CORPORATION

Henry B. Malone  
Health & Environmental Chemist



MARKEM INK MSDS CROSS-REFERENCE LIST. This ink cross-reference list has been compiled to enable you to select the appropriate MSDS forms for any MARKEM ink. The name of each MARKEM ink consists of a series number and a color descriptor. The complete MSDS designation for any MARKEM ink is determined by selecting, from the tables below, the MSDS forms for the series and for the color descriptor. The MSDS forms for ink series are identified by letters, and the MSDS forms for color descriptors are identified by numbers. This combination of forms will identify all hazardous ingredients in the ink within the meaning of the OSHA Hazard Communication Act, 29 CFR 1910.1200.

Examples: 7224 Brown 550-B MSDS Forms J, 3  
6634 Black 65-A MSDS Forms A, 2

INK SERIES	MSDS CODES	INK SERIES	MSDS CODES	INK SERIES	MSDS CODES	INK SERIES	MSDS CODES	INK SERIES	MSDS CODES	INK SERIES	MSDS CODES	INK SERIES	MSDS CODES
1000 D	1104 J	2410 J	3624 J	4253 J	6835 I	6972 D	7251 J	7351 I	7555 J	8271 J	29135 I		
1002 D	1200 D	2424 J	3625 J	4261 H	6862 I	6973 D	7253 J	7405 G	7572 D	8272 D	29145 HI		
1005 D	1202 D	2427 J	3661 J	4403 J	6868 J	7150 I	7259 J	7407 G	7600 D	8550 G	29169 J		
1006 D	1203 D	2430 I	3682 J	4404 H	6874 J	7155 B	7261 J	7409 G	7730 I	8615 D	29174 J		
1009 D	1206 D	2471 J	4035 H	4429 F	6875 G	7204 J	7263 J	7410 J	7901 F	8616 D	29186 J		
1012 D	1210 J	2488 G	4040 H	6304 J	6893 FJ	7215 J	7286 J	7420 J	7903 J	8635 H	29500 J		
1026 D	1220 D	2492 H	4065 G	6431 C	6896 J	7222 J	7290 J	7422 G	7904 J	8637 H	29600 J		
1027 D	2061 J	2505 G	4066 J	6621 D	6904 B	7224 J	7307 I	7450 J	7908 J	8658 J			
1029 D	2062 J	2506 G	4120 D	6633 D	6926 B	7226 J	7314 I	7451 J	7912 B	8848 G			
1030 F	2074 J	2574 J	4150 G	6800 F	6931 I	7227 J	7322 J	7461 I	7929 H	29116 J	All other ink series A		
1070 D, G	2124 J	2824 F	4166 J	6831 I	6955 J	7231 J	7332 J	7463 J	8250 J	29120 J			
1083 D, F	2405 G	3145 HI	4240 G	6833 I	6962 J	7235 J	7333 J	7550 G	8265 E	29122 J			

COLOR DESCRIPTOR	MSDS CODES	COLOR DESCRIPTOR	MSDS CODES	COLOR DESCRIPTOR	MSDS CODES	COLOR DESCRIPTOR	MSDS CODES	COLOR DESCRIPTOR	MSDS CODES	COLOR DESCRIPTOR	MSDS CODES	COLOR DESCRIPTOR	MSDS CODES
457-F	2	463-F	2	#569	2	64-D	2	DEW	3	718-C	3	MILL	2
AMBER	2,3	469-F	2	13538	2	72-D	2	MARAMIC	3	722-C	2	MING	2,3
Amber	2	491-F	3	14062	2	75-D	2	PURPLE	3	723-C	2	REX	2
BLACK	2	492-F	3	14090	3	76-D	2	37142	4	726-C	2	DP TOMATO	2
65-A	2	494-F	2	14092	3	80-D	2	RED	2	727-C	2	VAL	4
BLUE	2	497-F	2	14110	2	82-D	2	Red	2	728-C	2	VIVID	2
387-G	4	500-F	2	14115	2	84-D	2	57-C	2	729-C	2	TAN	2
463-G	2	510-F	2	14187	2	85-D	2	268-C	3	731-C	4	OT52	2
554-G	3	513-F	2	24159	2	87-D	2	303-C	2,3	732-C	3	LT CORK	2
635-G	2	519-F	2	24272	2	90-D	2	308-C	2	734-C	2	LUGGAGE	2
764-G	2	537-F	2	34108	2	91-D	2	347-C	2	735-C	2	VIOLET	2
813-G	2	542-F	2	34227	2,3	312-D	2	364-C	2	736-C	3	335-H	3
885-G	2	544-F	2	34325	2	314-D	2,3	370-C	2	737-C	2,3	357-H	3
912-G	2	551-F	3	34558	2	316-D	2	371-C	3	738-C	2	363-H	3
921-G	2	556-F	3	36440	3	321-D	2	376-C	2	743-C	2	365-H	4
15080	2	557-F	2	BR EMERALD	2	330-D	2	388-C	3	744-C	2	367-H	2
25414	2	575-F	3	BRILLIANT	2	332-D	2	394-C	4	745-C	2	368-H	4
BROWN	2	576-F	3	DARK	2	334-D	2	395-C	2,4	749-C	2	369-H	3
42-B	2	592-F	2	FLORENCE	3	340-D	3	396-C	3	752-C	2	370-H	3
66-B	3	596-F	2	GIL	2	343-D	2	399-C	4	753-C	3	371-H	3
71-B	2	601-F	2	GORDON	2	345-D	2	402-C	4	754-C	2,4	376-H	4
78-B	3	613-F	2	KELLY	2	348-D	2	406-C	4	755-C	3	388-H	4
81-B	3	614-F	2	KRAFT	2	356-D	2	408-C	2,3	756-C	2	WHITE	2
82-B	2	617-F	2	LEE	3	359-D	2	426-C	3	757-C	2,4	57-K	3
86-B	2	618-F	2	LIGHT	2	360-D	2	443-C	3,4	760-C	2	63-K	3
95-B	2	619-F	2	LINCOLN	2	366-D	2	456-C	4	764-C	3	70-K	3
306-B	2,3	649-F	2	MICHIGAN	2	370-D	2	460-C	2	766-C	2,3	86-K	3
308-B	2,3	650-F	2	GREY	2	371-D	2	463-C	2	771-C	2	27855	3
318-B	3	653-F	2	9-J	3	372-D	2	470-C	3	776-C	2	YELLOW	2
320-B	2	663-F	2	67-J	2	373-D	2	479-C	4	782-C	4	Yellow	2
324-B	2	667-F	3	76-J	3	385-D	2	482-C	2	784-C	4	67-E	2
330-B	2,3	670-F	2	89-J	3	386-D	2	486-C	3	785-C	4	72-E	2,3
341-B	2	671-F	2	90-J	2,3	390-D	2	495-C	4	791-C	2	79-E	2
345-B	3	678-F	2	95-J	3	391-D	2	498-C	2	795-C	3	84-E	3
351-B	2	689-F	2	97-J	3	392-D	2	527-C	3	800-C	3	87-E	3
356-B	3	690-F	2	303-J	3	393-D	2	530-C	2,3	805-C	4	88-E	2
359-B	2	693-F	2	307-J	3	398-D	3,4	535-C	4	808-C	4	92-E	2
360-B	2	698-F	2	311-J	3	400-D	2	540-C	2	809-C	4	93-E	2,3
364-B	2	706-F	2	318-J	3	403-D	2	541-C	2	812-C	3	96-E	2
366-B	2	707-F	2	326-J	2	404-D	2	543-C	3,4	813-C	2	97-E	2
369-B	2	708-F	2	328-J	3	405-D	2	554-C	3	815-C	2	99-E	2
372-B	3	711-F	2	332-J	3	#708	2	568-C	3	821-C	4	303-E	2
377-B	3	713-F	2	334-J	2,3	#709	2	581-C	3,4	823-C	2	304-E	2
379-B	2,3	717-F	2	336-J	3	#718	2	587-C	2	825-C	2	309-E	2
386-B	3	719-F	2	338-J	3	#733	2	595-C	3	826-C	3	312-E	2
396-B	2	720-F	2,3	342-J	3	#744	2	600-C	2	833-C	2	315-E	2
407-B	2	721-F	3	348-J	2	#745	2	604-C	3	835-C	4	319-E	2
414-B	2	730-F	2	350-J	3	#746	2	606-C	2	838-C	2,3	320-E	2
415-B	2	731-F	2	354-J	3	#754	3	608-C	3	840-C	4	323-E	2
422-B	2	736-F	2	355-J	3	12197	2	613-C	2	849-C	3,4	334-E	2
428-B	2	740-F	2	357-J	3	12246	2	622-C	3	854-C	2	339-E	2
429-B	2	741-F	2	368-J	3	12473	3	623-C	4	855-C	3	340-E	2
434-B	2	742-F	2	373-J	3	22190	2	634-C	3	866-C	2,3	343-E	2
435-B	2	743-F	2	378-J	3	22203	2	637-C	3	868-C	2	345-E	3
440-B	2	744-F	2	381-J	4	22246	2	640-C	3	873-C	2	346-E	2
447-B	2	748-F	2	392-J	2	22510	2,3	649-C	3	874-C	2	347-E	3
448-B	3	750-F	2	402-J	3	22544	2	656-C	4	876-C	4	353-E	2
456-B	3	751-F	2	403-J	3	26187	3	660-C	2	#0801	4	355-E	2
457-B	3	753-F	2	#407	3,4	32246	2	663-C	2	#0805	2	358-E	2
459-B	2	754-F	2	16307	2	BURNT	3	668-C	3	#878	2	365-E	2
460-B	3	755-F	2	26306	3	FLAME	2	669-C	3	11105	2,3	371-E	2
461-B	2	757-F	2	F	3	FLAME #2	2	670-C	3	11136	4	380-E	2
462-B	3	759-F	2,3	IVORY	3	FURY	2,3	673-C	3	21105	4	396-E	2
465-B	3	763-F	2	Ivory	3	GLDN POPPY	3	674-C	3	21302	2	397-E	2
466-B	2	767-F	2	OLIVE DRAB	2	JUPITER	3	679-C	2,3	31158	2	399-E	2
468-B	2,3	768-F	2	#2	2	LIGHT	2	684-C	2	31302	3	400-E	2
471-B	2,3	780-F	2	ORANGE	2	MARAMIC	3	692-C	4	BLOOD	4	401-E	2
473-B	2	784-F	2	Orange	2	RED 844	2	697-C	2	BRT CHERRY	2	404-E	2
475-B	2	786-F	2	3-D	2,3	REX TINT	2	700-C	4	CASTILLIAN	2	409-E	2
477-B	3	788-F	2	49-D	2	SIGNAL	2	702-C	3	DUP	2	411-E	2
478-B	2	793-F	2	52-D	2	SUNSET	2	706-C	4	KIM	2	413-E	2
480-B	2	797-F	2	59-D	2	VIVID	2	712-C	2	LANTA	3	415-E	2
487-B	3	802-F	2	60-D	2,3	PINK	2	714-C	2	MEDIUM	3	416-E	2
489-B	3	#510	2	63-D	2	0165	3	715-C	2	MED BRICK	2	418-E	2
490-B	2,3												

All other ink colors 1



## SECTION VI - REACTIVITY DATA

STABLE

UNSTABLE

CONDITIONS TO AVOID:

NA

HAZARDOUS POLYMERIZATION  WILL OCCUR  WILL NOT OCCUR

HAZARDOUS DECOMPOSITION PRODUCTS:

NA

INCOMPATIBILITY - MATERIALS TO AVOID:

NA

## SECTION VII - ENVIRONMENTAL PROTECTION PROCEDURES

SPILL RESPONSE:

Absorb spilled material with vermiculite or floor absorbent.

WASTE DISPOSAL METHOD:

Under the Resource Conservation & Recovery Act (RCRA), it is the responsibility of the generator of the waste material to determine, at the time of disposal, whether the waste generated meets Federal or State Hazardous Waste Criteria. This is because uses, transformations, mixtures, processes, etc. may render the resulting material hazardous. As a result, consult Federal, state and local authorities for disposal information.

## SECTION VIII - SPECIAL PROTECTION INFORMATION

EYE PROTECTION:

Goggles

RESPIRATORY PROTECTION:

Respirator if TLV is exceeded

SKIN PROTECTION:

PVA gloves

VENTILATION RECOMMENDATIONS:

Sufficient to keep exposure below TLV

OTHER PROTECTION:

None

## SECTION IX - OTHER INFORMATION

None

0872965 (1/86)

It is expressly understood that any information furnished by Markem Corporation with reference to its products is given gratis and that Markem Corporation assumes no obligation or liability for the information given or results obtained, all such information being given and accepted at customer's risk. These data are offered in good faith as typical values and not as a product specification. The recommended handling procedures are believed to be generally applicable; however, each user should review these recommendations in the specific context of the intended use.

## SECTION VI - REACTIVITY DATA

<input checked="" type="checkbox"/> STABLE	<input type="checkbox"/> UNSTABLE	HAZARDOUS POLYMERIZATION <input type="checkbox"/> WILL OCCUR <input checked="" type="checkbox"/> WILL NOT OCCUR
CONDITIONS TO AVOID: NA		HAZARDOUS DECOMPOSITION PRODUCTS: NA
INCOMPATIBILITY - MATERIALS TO AVOID: NA		

## SECTION VII - ENVIRONMENTAL PROTECTION PROCEDURES

SPILL RESPONSE: Absorb spilled material with vermiculite or floor absorbent.
WASTE DISPOSAL METHOD: Under the Resource Conservation & Recovery Act (RCRA), it is the responsibility of the generator of the waste material to determine, at the time of disposal, whether the waste generated meets Federal or State Hazardous Waste Criteria. This is because uses, transformations, mixtures, processes, etc. may render the resulting material hazardous. As a result, consult Federal, state and local authorities for disposal information.

## SECTION VIII - SPECIAL PROTECTION INFORMATION

EYE PROTECTION: Goggles
RESPIRATORY PROTECTION: Respirator if TLV is exceeded
SKIN PROTECTION: PVA gloves
VENTILATION RECOMMENDATIONS: Sufficient to keep exposure below TLV
OTHER PROTECTION: None

## SECTION IX - OTHER INFORMATION

None
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0872965 (1/86)

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# MARKEM MATERIAL SAFETY DATA SHEET

MARKEM CORPORATION • 150 CONGRESS STREET • KEENE, NH 03431

EMERGENCY TELEPHONE No.  
**(603)352-1130**

DATE OF PREPARATION: 12/85

## SECTION I - IDENTIFICATION

This is MARKEM Ink MSDS Form D.

MARKEM inks are mixtures of various components. This MSDS applies to one component present in many MARKEM inks. Complete identification of the OSHA-defined hazardous components of any MARKEM ink is obtained by selecting the various individual MSDS forms as indicated on the MARKEM INK MSDS CROSS-REFERENCE LIST or on the container of the ink. If you need further assistance, or more copies of this MSDS package, please call (603) 352-1130.

## SECTION II - PRINCIPAL HAZARDOUS COMPONENTS

HAZARDOUS COMPONENT	PERCENT RANGE	CAS No.
Cresols (mixed)	30-70%	1319-77-3

## SECTION III - PHYSICAL DATA

BOILING POINT: 374° to 428°F	SPECIFIC GRAVITY (H <sub>2</sub> O = 1): 1.03
VAPOR PRESSURE, mm Hg: 1 at 120°F	PERCENT VOLATILE: NE
VAPOR DENSITY (AIR = 1): 3.72	EVAPORATION RATE: (n-Butyl acetate = 1) NE
SOLUBILITY IN WATER: 5% at 212°F	pH: 5.5
APPEARANCE: clear to amber	ODOR: sweet, antiseptic, tarlike

## SECTION IV - FIRE AND EXPLOSION HAZARD DATA

FLASH POINT: 187°F TCC	FLAMMABLE LIMITS: LEL 1.06% UEL NE
AUTOIGNITION TEMPERATURE: NE	EXTINGUISHING MEDIA: water fog, CO <sub>2</sub> , dry chemical
UNUSUAL FIRE AND EXPLOSION HAZARDS: None	
SPECIAL FIREFIGHTING METHODS: Self-contained breathing apparatus	

## SECTION V - HEALTH HAZARD DATA

TLV 5 ppm	PEL 5 ppm
CARCINOGEN: NTP <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	IARC <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO
EFFECTS OF OVEREXPOSURE: <ul style="list-style-type: none"><li>• EYES: Chemical burns - severe eye damage</li><li>• SKIN: Chemical burns - may be fatal</li><li>• INHALATION: Irritation - may be fatal</li><li>• INGESTION: Burning pain - may be fatal</li></ul>	EMERGENCY FIRST AID: <ul style="list-style-type: none"><li>• EYES: Call physician immediately. Flush with large amounts of water.</li><li>• SKIN: Remove contaminated clothing. Flush with large amounts of water.</li><li>• INHALATION: Remove to fresh air. Begin resuscitation.</li><li>• INGESTION: Drink large amounts of milk or water.</li></ul>
PRIMARY ROUTES OF ENTRY: All of above	
NOTES TO PHYSICIAN: None	



## SECTION VI - REACTIVITY DATA

STABLE                       UNSTABLE                      HAZARDOUS POLYMERIZATION  WILL OCCUR  WILL NOT OCCUR  
CONDITIONS TO AVOID:                      Heat, flame                      HAZARDOUS DECOMPOSITION PRODUCTS:                      Toxic fumes  
INCOMPATIBILITY - MATERIALS TO AVOID:                      Strong oxidizers or alkalis

## SECTION VII - ENVIRONMENTAL PROTECTION PROCEDURES

SPILL RESPONSE:  
Avoid skin contact. Stay upwind. Absorb spilled material immediately with vermiculite or floor absorbent.

### WASTE DISPOSAL METHOD:

Under the Resource Conservation & Recovery Act (RCRA), it is the responsibility of the generator of the waste material to determine, at the time of disposal, whether the waste generated meets Federal or State Hazardous Waste Criteria. This is because uses, transformations, mixtures, processes, etc. may render the resulting material hazardous. As a result, consult Federal, state and local authorities for disposal information.

## SECTION VIII - SPECIAL PROTECTION INFORMATION

EYE PROTECTION:                      Face shield  
RESPIRATORY PROTECTION:                      Respirator  
SKIN PROTECTION:                      Chemical gloves  
VENTILATION RECOMMENDATIONS:                      Sufficient to keep exposure below TLV  
OTHER PROTECTION:                      None

## SECTION IX - OTHER INFORMATION

None

0872964 (1/86)

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EMERGENCY TELEPHONE No.  
**(603)352-1130**

DATE OF PREPARATION: 12/85

## SECTION I - IDENTIFICATION

This is MARKEM Ink MSDS Form C.

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## SECTION II - PRINCIPAL HAZARDOUS COMPONENTS

HAZARDOUS COMPONENT	PERCENT RANGE	CAS No.
Ethanol, denatured	30 - 70%	64175

## SECTION III - PHYSICAL DATA

BOILING POINT: 173°F	SPECIFIC GRAVITY (H <sub>2</sub> O = 1): 0.79
VAPOR PRESSURE, mm Hg: 42 at 20°C	PERCENT VOLATILE: 100%
VAPOR DENSITY (AIR = 1): 1.6	EVAPORATION RATE: (n-Butyl acetate = 1) 2.8
SOLUBILITY IN WATER: complete	pH: NA
APPEARANCE: colorless liquid	ODOR: Alcohol

## SECTION IV - FIRE AND EXPLOSION HAZARD DATA

FLASH POINT: 55°F TCC	FLAMMABLE LIMITS: LEL 3.3% UEL 19%
AUTOIGNITION TEMPERATURE: 793°F	EXTINGUISHING MEDIA: CO <sub>2</sub> , dry chemical, water fog
UNUSUAL FIRE AND EXPLOSION HAZARDS: NA	
SPECIAL FIREFIGHTING METHODS: Water may not be effective	

## SECTION V - HEALTH HAZARD DATA

TLV 1000 ppm	PEL 1000 ppm
CARCINOGEN: NTP <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	IARC <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO
EFFECTS OF OVEREXPOSURE: • EYES: irritant	EMERGENCY FIRST AID: • EYES: Flush with plenty of water. Call a physician.
• SKIN: mild irritant	• SKIN:
• INHALATION: drowsiness, nausea, vomiting	• INHALATION: Remove to fresh air. Begin resuscitation. Call a physician.
• INGESTION: inebriation, headache, nausea, vomiting, blindness	• INGESTION: Induce vomiting at once. Call a physician.
PRIMARY ROUTES OF ENTRY: ingestion, inhalation	
NOTES TO PHYSICIAN: None	



## SECTION VI - REACTIVITY DATA

STABLE

UNSTABLE

HAZARDOUS POLYMERIZATION  WILL OCCUR  WILL NOT OCCUR

CONDITIONS TO AVOID:

Heat, fire, sparks

HAZARDOUS DECOMPOSITION PRODUCTS:

CO, CO<sub>2</sub>

INCOMPATIBILITY - MATERIALS TO AVOID:

Concentrated acids, oxidizers

## SECTION VII - ENVIRONMENTAL PROTECTION PROCEDURES

SPILL RESPONSE:

Eliminate all sources of ignition.  
Absorb spilled material with vermiculite or floor absorbent.

WASTE DISPOSAL METHOD:

Under the Resource Conservation & Recovery Act (RCRA), it is the responsibility of the generator of the waste material to determine, at the time of disposal, whether the waste generated meets Federal or State Hazardous Waste Criteria. This is because uses, transformations, mixtures, processes, etc. may render the resulting material hazardous. As a result, consult Federal, state and local authorities for disposal information.

## SECTION VIII - SPECIAL PROTECTION INFORMATION

EYE PROTECTION: Goggles

RESPIRATORY PROTECTION: Fresh-air mask if TLV is exceeded

SKIN PROTECTION: Plastic Gloves

VENTILATION RECOMMENDATIONS: Sufficient to keep exposure below TLV

OTHER PROTECTION:  
NA

## SECTION IX - OTHER INFORMATION

None

0872963 (1/86)

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## SECTION I - IDENTIFICATION

This is MARKEM Ink MSDS Form B.

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## SECTION II - PRINCIPAL HAZARDOUS COMPONENTS

HAZARDOUS COMPONENT	PERCENT RANGE	CAS No.
Xylene	40% maximum	1330-20-7

## SECTION III - PHYSICAL DATA

BOILING POINT: 280°F	SPECIFIC GRAVITY (H <sub>2</sub> O = 1): 0.87
VAPOR PRESSURE, mm Hg: 25 at 25°C	PERCENT VOLATILE: 100%
VAPOR DENSITY (AIR = 1): 3.7	EVAPORATION RATE: (n-Butyl acetate = 1) 0.7
SOLUBILITY IN WATER: Negligible	pH: NA
APPEARANCE: clear water-white liquid	ODOR: aromatic hydrocarbon

## SECTION IV - FIRE AND EXPLOSION HAZARD DATA

FLASH POINT: 80°F TCC	FLAMMABLE LIMITS: LEL 1% UEL 7%
AUTOIGNITION TEMPERATURE: greater than 930°F	EXTINGUISHING MEDIA: foam, dry chemical, CO <sub>2</sub>
UNUSUAL FIRE AND EXPLOSION HAZARDS: None	
SPECIAL FIREFIGHTING METHODS: Use self-contained breathing apparatus	

## SECTION V - HEALTH HAZARD DATA

TLV 100 ppm	PEL 100 ppm
CARCINOGEN: NTP <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	IARC <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO
EFFECTS OF OVEREXPOSURE: • EYES: irritation • SKIN: irritation • INHALATION: irritation, headache, dizziness • INGESTION: low order of oral toxicity	EMERGENCY FIRST AID: • EYES: flush with water for 15 minutes • SKIN: remove contaminated clothing - wash skin • INHALATION: remove from exposure - call a physician - begin resuscitation • INGESTION: Do <u>not</u> induce vomiting - call a physician
PRIMARY ROUTES OF ENTRY: inhalation, absorption	
NOTES TO PHYSICIAN: NA	



## SECTION VI - REACTIVITY DATA

STABLE       UNSTABLE      HAZARDOUS POLYMERIZATION  WILL OCCUR  WILL NOT OCCUR  
CONDITIONS TO AVOID:      Heat and flame      HAZARDOUS DECOMPOSITION PRODUCTS:      None  
INCOMPATIBILITY - MATERIALS TO AVOID:      strong oxidants - chlorine, concentrated oxygen

## SECTION VII - ENVIRONMENTAL PROTECTION PROCEDURES

SPILL RESPONSE: Eliminate all ignition sources. Recover free product. Add absorbent to spill area. Minimize breathing vapors. Minimize skin contact. Ventilate confined areas. Keep product out of sewers and watercourses. Assure conformity with governmental regulations. Observe precautions for flammable vapors from absorbed material.

### WASTE DISPOSAL METHOD:

Under the Resource Conservation & Recovery Act (RCRA), it is the responsibility of the generator of the waste material to determine, at the time of disposal, whether the waste generated meets Federal or State Hazardous Waste Criteria. This is because uses, transformations, mixtures, processes, etc. may render the resulting material hazardous. As a result, consult Federal, state and local authorities for disposal information.

## SECTION VIII - SPECIAL PROTECTION INFORMATION

### EYE PROTECTION:

Use splash goggles or face shield when eye contact may occur.

### RESPIRATORY PROTECTION:

Use supplied-air respiratory protection in confined areas if needed.

### SKIN PROTECTION:

Use chemical-resistant gloves if needed. Avoid repeated or prolonged skin contact.

### VENTILATION RECOMMENDATIONS:

Use with ventilation to prevent exceeding exposure limit or buildup of vapors.

### OTHER PROTECTION:

No smoking or open lights.

## SECTION IX - OTHER INFORMATION

None

0872962 (1/86)

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# MARKEM MATERIAL SAFETY DATA SHEET

MARKEM CORPORATION • 150 CONGRESS STREET • KEENE, NH 03431

EMERGENCY TELEPHONE No.  
**(603)352-1130**

DATE OF PREPARATION: 12/85

## SECTION I - IDENTIFICATION

This is MARKEM Ink MSDS Form F.

MARKEM inks are mixtures of various components. This MSDS applies to one component present in many MARKEM inks. Complete identification of the OSHA-defined hazardous components of any MARKEM ink is obtained by selecting the various individual MSDS forms as indicated on the MARKEM INK MSDS CROSS-REFERENCE LIST or on the container of the ink. If you need further assistance, or more copies of this MSDS package, please call (603) 352-1130.

## SECTION II - PRINCIPAL HAZARDOUS COMPONENTS

HAZARDOUS COMPONENT	PERCENT RANGE	CAS No.
Ethyl acetate	30 - 70%	141786

## SECTION III - PHYSICAL DATA

BOILING POINT: 168°F	SPECIFIC GRAVITY (H <sub>2</sub> O = 1): .90
VAPOR PRESSURE, mm Hg: 76 at 68°F	PERCENT VOLATILE: 100%
VAPOR DENSITY (AIR = 1): 3.0	EVAPORATION RATE: (n-Butyl acetate = 1) 6.2
SOLUBILITY IN WATER: 10%	pH: NA
APPEARANCE: colorless liquid	ODOR: fragrant

## SECTION IV - FIRE AND EXPLOSION HAZARD DATA

FLASH POINT: 26°F CC	FLAMMABLE LIMITS: LEL 2.2% UEL 11.5%
AUTOIGNITION TEMPERATURE: 800°F	EXTINGUISHING MEDIA: alcohol foam, CO <sub>2</sub> , dry chemical
UNUSUAL FIRE AND EXPLOSION HAZARDS: None	
SPECIAL FIREFIGHTING METHODS: Self-contained breathing apparatus	

## SECTION V - HEALTH HAZARD DATA

TLV 400 ppm	PEL 400 ppm
CARCINOGEN: NTP <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	IARC <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO
EFFECTS OF OVEREXPOSURE: • EYES: severe irritation	EMERGENCY FIRST AID: • EYES: Flush with water. Call a physician.
• SKIN: moderate irritation, defatting	• SKIN: Remove contaminated clothing. Wash skin.
• INHALATION: irritation, headache, nausea, dizziness	• INHALATION: Remove from exposure. Begin resuscitation. Call a physician.
• INGESTION: irritation, nausea, vomiting	• INGESTION: Induce vomiting. Call physician.
PRIMARY ROUTES OF ENTRY: inhalation, skin absorption	
NOTES TO PHYSICIAN: None	



## SECTION VI - REACTIVITY DATA

STABLE

UNSTABLE

CONDITIONS TO AVOID:

Heat and flame

HAZARDOUS POLYMERIZATION  WILL OCCUR  WILL NOT OCCUR

HAZARDOUS DECOMPOSITION PRODUCTS:

CO, CO<sub>2</sub>

INCOMPATIBILITY - MATERIALS TO AVOID:

Strong oxidizing agents, alkalis, mineral acids

## SECTION VII - ENVIRONMENTAL PROTECTION PROCEDURES

SPILL RESPONSE:

Absorb spilled material with vermiculite or spill absorbent.

WASTE DISPOSAL METHOD:

Under the Resource Conservation & Recovery Act (RCRA), it is the responsibility of the generator of the waste material to determine, at the time of disposal, whether the waste generated meets Federal or State Hazardous Waste Criteria. This is because uses, transformations, mixtures, processes, etc. may render the resulting material hazardous. As a result, consult Federal, state and local authorities for disposal information.

## SECTION VIII - SPECIAL PROTECTION INFORMATION

EYE PROTECTION:

Goggles

RESPIRATORY PROTECTION:

Respirator only if TLV is exceeded

SKIN PROTECTION:

Neoprene gloves

VENTILATION RECOMMENDATIONS:

Sufficient to keep exposure level below TLV

OTHER PROTECTION:

None

## SECTION IX - OTHER INFORMATION

None

0872966 (1/86)

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DATE OF PREPARATION: 12/85

## SECTION I - IDENTIFICATION

This is MARKEM Ink MSDS Form G.

MARKEM inks are mixtures of various components. This MSDS applies to one component present in many MARKEM inks. Complete identification of the OSHA-defined hazardous components of any MARKEM ink is obtained by selecting the various individual MSDS forms as indicated on the MARKEM INK MSDS CROSS-REFERENCE LIST or on the container of the ink. If you need further assistance, or more copies of this MSDS package, please call (603) 352-1130.

## SECTION II - PRINCIPAL HAZARDOUS COMPONENTS

HAZARDOUS COMPONENT	PERCENT RANGE	CAS No.
Isophorone	30 - 70%	78591

## SECTION III - PHYSICAL DATA

BOILING POINT: 419°F	SPECIFIC GRAVITY (H <sub>2</sub> O = 1): 0.92
VAPOR PRESSURE, mm Hg: less than 1 at 68°F	PERCENT VOLATILE: 100%
VAPOR DENSITY (AIR = 1): 4.7	EVAPORATION RATE: (n-Butyl acetate = 1) 0.03
SOLUBILITY IN WATER: slight	pH: NA
APPEARANCE: water-white liquid	ODOR: similar to camphor

## SECTION IV - FIRE AND EXPLOSION HAZARD DATA

FLASH POINT: 179°F TCC	FLAMMABLE LIMITS: LEL 0.8% UEL NE
AUTOIGNITION TEMPERATURE: NE	EXTINGUISHING MEDIA: foam, water fog, CO <sub>2</sub> , dry chemical
UNUSUAL FIRE AND EXPLOSION HAZARDS: None	
SPECIAL FIREFIGHTING METHODS: Self-contained breathing apparatus	

## SECTION V - HEALTH HAZARD DATA

TLV 5 ppm	PEL 25 ppm
CARCINOGEN: NTP <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	IARC <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO
EFFECTS OF OVEREXPOSURE: • EYES: severe irritation	EMERGENCY FIRST AID: • EYES: Flush with water. Call a physician.
• SKIN: irritation	• SKIN: Remove contaminated clothing. Wash skin.
• INHALATION: irritation, dizziness, nausea, headache	• INHALATION: Remove from exposure. Begin resuscitation. Call a physician.
• INGESTION: irritation, nausea, vomiting	• INGESTION: Induce vomiting. Call physician.
PRIMARY ROUTES OF ENTRY: Inhalation	
NOTES TO PHYSICIAN: None	



## SECTION VI - REACTIVITY DATA

STABLE       UNSTABLE      HAZARDOUS POLYMERIZATION  WILL OCCUR  WILL NOT OCCUR  
CONDITIONS TO AVOID: Heat and flame      HAZARDOUS DECOMPOSITION PRODUCTS: CO, CO<sub>2</sub>  
INCOMPATIBILITY - MATERIALS TO AVOID: Strong alkalis, mineral acids

## SECTION VII - ENVIRONMENTAL PROTECTION PROCEDURES

### SPILL RESPONSE:

Absorb spilled material with vermiculite or floor absorbent.

### WASTE DISPOSAL METHOD:

Under the Resource Conservation & Recovery Act (RCRA), it is the responsibility of the generator of the waste material to determine, at the time of disposal, whether the waste generated meets Federal or State Hazardous Waste Criteria. This is because uses, transformations, mixtures, processes, etc. may render the resulting material hazardous. As a result, consult Federal, state and local authorities for disposal information.

## SECTION VIII - SPECIAL PROTECTION INFORMATION

### EYE PROTECTION:

Goggles

### RESPIRATORY PROTECTION:

Respirator if TLV is exceeded

### SKIN PROTECTION:

PVC gloves

### VENTILATION RECOMMENDATIONS:

sufficient to keep exposure level below TLV

### OTHER PROTECTION:

None

## SECTION IX - OTHER INFORMATION

None

0872967 (1/86)

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DATE OF PREPARATION: 12/85

## SECTION I - IDENTIFICATION

This is MARKEM Ink MSDS Form H.

MARKEM Inks are mixtures of various components. This MSDS applies to one component present in many MARKEM inks. Complete identification of the OSHA-defined hazardous components of any MARKEM ink is obtained by selecting the various individual MSDS forms as indicated on the MARKEM INK MSDS CROSS-REFERENCE LIST or on the container of the ink. If you need further assistance, or more copies of this MSDS package, please call (603) 352-1130.

## SECTION II - PRINCIPAL HAZARDOUS COMPONENTS

HAZARDOUS COMPONENT	PERCENT RANGE	CAS No.
Ethylene glycol monobutyl ether	30 - 70%	111-76-2

## SECTION III - PHYSICAL DATA

BOILING POINT:	340°F	SPECIFIC GRAVITY (H <sub>2</sub> O = 1):	0.90
VAPOR PRESSURE, mm Hg:	0.88 at 77°F	PERCENT VOLATILE:	100%
VAPOR DENSITY (AIR = 1):	4.1	EVAPORATION RATE: (n-Butyl acetate = 1)	less than 1
SOLUBILITY IN WATER:	complete	pH:	NA
APPEARANCE:	colorless liquid	ODOR:	pleasant, mild

## SECTION IV - FIRE AND EXPLOSION HAZARD DATA

FLASH POINT:	140°F TCC	FLAMMABLE LIMITS:	LEL 1.1% UEL NE
AUTOIGNITION TEMPERATURE:	unk.	EXTINGUISHING MEDIA:	water fog, CO <sub>2</sub> , dry chemical
UNUSUAL FIRE AND EXPLOSION HAZARDS:	None		
SPECIAL FIREFIGHTING METHODS:	Self-contained breathing apparatus		

## SECTION V - HEALTH HAZARD DATA

TLV	25 ppm	PEL	50 ppm
CARCINOGEN:	NTP <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	IARC	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO
EFFECTS OF OVEREXPOSURE:	EMERGENCY FIRST AID:		
• EYES: severe irritation	• EYES: Flush with water. Call a physician.		
• SKIN: moderate irritation, defatting	• SKIN: Remove contaminated clothing. Wash skin.		
• INHALATION: irritation, dizziness, nausea, vomiting	• INHALATION: Remove from exposure. Begin resuscitation. Call a physician.		
• INGESTION: irritation, nausea, vomiting	• INGESTION: Induce vomiting. Call a physician.		
PRIMARY ROUTES OF ENTRY:	inhalation, skin contact		
NOTES TO PHYSICIAN:	None		



## SECTION VI - REACTIVITY DATA

STABLE  
CONDITIONS TO AVOID:

UNSTABLE

Heat and flame

HAZARDOUS POLYMERIZATION  WILL OCCUR  WILL NOT OCCUR

HAZARDOUS DECOMPOSITION PRODUCTS:

CO, CO<sub>2</sub>

INCOMPATIBILITY - MATERIALS TO AVOID: strong alkalis, strong oxidizing agents

## SECTION VII - ENVIRONMENTAL PROTECTION PROCEDURES

SPILL RESPONSE:

Absorb spilled material with vermiculite or floor absorbent

WASTE DISPOSAL METHOD:

Under the Resource Conservation & Recovery Act (RCRA), it is the responsibility of the generator of the waste material to determine, at the time of disposal, whether the waste generated meets Federal or State Hazardous Waste Criteria. This is because uses, transformations, mixtures, processes, etc. may render the resulting material hazardous. As a result, consult Federal, state and local authorities for disposal information.

## SECTION VIII - SPECIAL PROTECTION INFORMATION

EYE PROTECTION:

Goggles

RESPIRATORY PROTECTION:

Respirator if TLV is exceeded

SKIN PROTECTION:

Neoprene gloves

VENTILATION RECOMMENDATIONS:

sufficient to keep exposure level below TLV

OTHER PROTECTION:

None

## SECTION IX - OTHER INFORMATION

None

0872968 (1/86)

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## SECTION I - IDENTIFICATION

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## SECTION II - PRINCIPAL HAZARDOUS COMPONENTS

HAZARDOUS COMPONENT	PERCENT RANGE	CAS No.
Ethylene glycol monoethyl ether acetate	30 - 70%	111159

## SECTION III - PHYSICAL DATA

BOILING POINT:	313°F	SPECIFIC GRAVITY (H <sub>2</sub> O = 1):	0.98
VAPOR PRESSURE, mm Hg:	2 at 68°F	PERCENT VOLATILE:	100%
VAPOR DENSITY (AIR = 1):	4.7	EVAPORATION RATE: (n-Butyl acetate = 1)	1
SOLUBILITY IN WATER:	complete	pH:	NA
APPEARANCE:	colorless liquid	ODOR:	mild, pleasant

## SECTION IV - FIRE AND EXPLOSION HAZARD DATA

FLASH POINT:	117°F C0C	FLAMMABLE LIMITS:	LEL 1.7 UEL NE
AUTOIGNITION TEMPERATURE:	715°F	EXTINGUISHING MEDIA:	water fog, CO <sub>2</sub> , dry chemical
UNUSUAL FIRE AND EXPLOSION HAZARDS:	None		
SPECIAL FIREFIGHTING METHODS:	Self-contained breathing apparatus		

## SECTION V - HEALTH HAZARD DATA

TLV	5 ppm - skin	PEL	100 ppm
CARCINOGEN:	NTP <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	IARC	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO
EFFECTS OF OVEREXPOSURE:		EMERGENCY FIRST AID:	
• EYES:	severe irritation	• EYES:	Flush with water. Call a physician.
• SKIN:	moderate irritation, defatting	• SKIN:	Remove contaminated clothing. Wash skin with soap and water.
• INHALATION:	irritation, dizziness, nausea, headache	• INHALATION:	Remove from exposure. Begin resuscitation. Call a physician.
• INGESTION:	irritation, nausea, vomiting	• INGESTION:	Induce vomiting. Call a physician.
PRIMARY ROUTES OF ENTRY:	Inhalation, skin contact		
NOTES TO PHYSICIAN:	None		



## SECTION VI - REACTIVITY DATA

STABLE

UNSTABLE

CONDITIONS TO AVOID:

Heat and flame

HAZARDOUS POLYMERIZATION  WILL OCCUR  WILL NOT OCCUR

HAZARDOUS DECOMPOSITION PRODUCTS:

None

INCOMPATIBILITY - MATERIALS TO AVOID:

Strong oxidizing agents

## SECTION VII - ENVIRONMENTAL PROTECTION PROCEDURES

SPILL RESPONSE:

Absorb with vermiculite or floor absorbent.

WASTE DISPOSAL METHOD:

Under the Resource Conservation & Recovery Act (RCRA), it is the responsibility of the generator of the waste material to determine, at the time of disposal, whether the waste generated meets Federal or State Hazardous Waste Criteria. This is because uses, transformations, mixtures, processes, etc. may render the resulting material hazardous. As a result, consult Federal, state and local authorities for disposal information.

## SECTION VIII - SPECIAL PROTECTION INFORMATION

EYE PROTECTION:

Chemical splash goggles

RESPIRATORY PROTECTION:

Sufficient to maintain exposure below TLV

SKIN PROTECTION:

Neoprene gloves

VENTILATION RECOMMENDATIONS:

Sufficient to maintain exposure below TLV

OTHER PROTECTION:

Avoid repeated and prolonged skin contact

## SECTION IX - OTHER INFORMATION

None

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DATE OF PREPARATION: 12/85

## SECTION I - IDENTIFICATION

This is MARKEM Ink MSDS Form J.

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## SECTION II - PRINCIPAL HAZARDOUS COMPONENTS

HAZARDOUS COMPONENT	PERCENT RANGE	CAS No.
Tributyl phosphate	30 - 70%	126-73-8

## SECTION III - PHYSICAL DATA

BOILING POINT: 560°F	SPECIFIC GRAVITY (H <sub>2</sub> O = 1): 0.98
VAPOR PRESSURE, mm Hg: 7.3 at 302°F	PERCENT VOLATILE: 0
VAPOR DENSITY (AIR = 1): 9.2	EVAPORATION RATE: (n-Butyl acetate = 1) less than 0.1
SOLUBILITY IN WATER: 0.1%	pH: NA
APPEARANCE: colorless to light straw liquid	ODOR: odorless

## SECTION IV - FIRE AND EXPLOSION HAZARD DATA

FLASH POINT: 295°F COC	FLAMMABLE LIMITS: LEL NE UEL NE
AUTOIGNITION TEMPERATURE: 770°F	EXTINGUISHING MEDIA: water fog, CO <sub>2</sub> , dry chemical
UNUSUAL FIRE AND EXPLOSION HAZARDS: slight fire or explosion hazard	
SPECIAL FIREFIGHTING METHODS: self-contained breathing apparatus	

## SECTION V - HEALTH HAZARD DATA

TLV 0.2 ppm	PEL 5 ppm
CARCINOGEN: NTP <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	IARC <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO
EFFECTS OF OVEREXPOSURE: • EYES: mild irritant • SKIN: severe irritant • INHALATION: slight irritant • INGESTION: slight irritant	EMERGENCY FIRST AID: • EYES: Flush with water for 15 minutes. Call a physician. • SKIN: Remove contaminated clothing. Wash skin. • INHALATION: Remove from exposure. Call a physician. • INGESTION: Call a physician - induce vomiting.
PRIMARY ROUTES OF ENTRY: skin contact	
NOTES TO PHYSICIAN: Possesses only extremely weak anticholinesterase activity which should not require specific treatment.	



## SECTION VI - REACTIVITY DATA

STABLE

UNSTABLE

CONDITIONS TO AVOID:

Heat and flame

HAZARDOUS POLYMERIZATION  WILL OCCUR  WILL NOT OCCUR

HAZARDOUS DECOMPOSITION PRODUCTS:  
Phosphorus oxides

INCOMPATIBILITY - MATERIALS TO AVOID: Strong oxidizing agents

## SECTION VII - ENVIRONMENTAL PROTECTION PROCEDURES

SPILL RESPONSE:

Absorb spilled material with vermiculite or floor absorbent.

WASTE DISPOSAL METHOD:

Under the Resource Conservation & Recovery Act (RCRA), it is the responsibility of the generator of the waste material to determine, at the time of disposal, whether the waste generated meets Federal or State Hazardous Waste Criteria. This is because uses, transformations, mixtures, processes, etc. may render the resulting material hazardous. As a result, consult Federal, state and local authorities for disposal information.

## SECTION VIII - SPECIAL PROTECTION INFORMATION

EYE PROTECTION:

safety goggles

RESPIRATORY PROTECTION:

Not needed if exposure is below TLV

SKIN PROTECTION:

Rubber gloves

VENTILATION RECOMMENDATIONS:

To keep exposure below TLV

OTHER PROTECTION:

None

## SECTION IX - OTHER INFORMATION

None

0872970 (1/86)

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EMERGENCY TELEPHONE No.  
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DATE OF PREPARATION: 12/85

## SECTION I - IDENTIFICATION

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## SECTION II - PRINCIPAL HAZARDOUS COMPONENTS

HAZARDOUS COMPONENT	PERCENT RANGE	CAS No.
Cadmium mercury sulfide	40% maximum	1345-09-1

## SECTION III - PHYSICAL DATA

BOILING POINT: NA	SPECIFIC GRAVITY (H <sub>2</sub> O = 1): 5.1
VAPOR PRESSURE, mm Hg: NA	PERCENT VOLATILE: 0
VAPOR DENSITY (AIR = 1): NA	EVAPORATION RATE: (n-Butyl acetate = 1) NA
SOLUBILITY IN WATER: Negligible	pH: NA
PEARANCE: Red powder	ODOR: odorless

## SECTION IV - FIRE AND EXPLOSION HAZARD DATA

FLASH POINT: NA	FLAMMABLE LIMITS: LEL NA UEL NA
AUTOIGNITION TEMPERATURE: NA	EXTINGUISHING MEDIA: water
UNUSUAL FIRE AND EXPLOSION HAZARDS:	may generate Cadmium oxide fumes. May be fatal.
SPECIAL FIREFIGHTING METHODS:	self-contained breathing apparatus

## SECTION V - HEALTH HAZARD DATA

TLV as Cd: 0.05 mg/m <sup>3</sup> as Hg: 0.10 mg/m <sup>3</sup>	PEL as Cd: 0.2 mg/m <sup>3</sup> as Hg: 0.1 mg/m <sup>3</sup>
CARCINOGEN: NTP <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	IARC <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO
EFFECTS OF OVEREXPOSURE: • EYES: not an irritant • SKIN: not an irritant • INHALATION: Repeated and prolonged exposure: Cadmium and mercury poisoning • INGESTION: Repeated and prolonged exposure: Cadmium and mercury poisoning	EMERGENCY FIRST AID: • EYES: Flush with water for 15 minutes. Call a physician • SKIN: Wash with soap and water. Call a physician. • INHALATION: Remove to fresh air. Call a physician • INGESTION: Give large amounts of water. Induce vomiting. Call a physician
PRIMARY ROUTES OF ENTRY: inhalation, ingestion	
NOTES TO PHYSICIAN: None	



## SECTION VI - REACTIVITY DATA

STABLE

UNSTABLE

HAZARDOUS POLYMERIZATION  WILL OCCUR  WILL NOT OCCUR

CONDITIONS TO AVOID: Fire conditions

HAZARDOUS DECOMPOSITION PRODUCTS:  
SO<sub>2</sub>, cadmium oxide, H<sub>2</sub>S

INCOMPATIBILITY - MATERIALS TO AVOID: strong acids, strong oxidizing agents

## SECTION VII - ENVIRONMENTAL PROTECTION PROCEDURES

SPILL RESPONSE:

Vacuum or use wet clean-up techniques. Do not sweep. Avoid dusting.

WASTE DISPOSAL METHOD:

Under the Resource Conservation & Recovery Act (RCRA), it is the responsibility of the generator of the waste material to determine, at the time of disposal, whether the waste generated meets Federal or State Hazardous Waste Criteria. This is because uses, transformations, mixtures, processes, etc. may render the resulting material hazardous. As a result, consult Federal, state and local authorities for disposal information.

## SECTION VIII - SPECIAL PROTECTION INFORMATION

EYE PROTECTION: safety glasses or goggles

RESPIRATORY PROTECTION: Respirator with dust, fume and mist cartridge

SKIN PROTECTION: Rubber or neoprene gloves

VENTILATION RECOMMENDATIONS: Adequate localized ventilation

OTHER PROTECTION: Avoid contamination of footwear worn away from workplace.

## SECTION IX - OTHER INFORMATION

None

0872974 (1/86)

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# MARKEM MATERIAL SAFETY DATA SHEET

MARKEM CORPORATION • 150 CONGRESS STREET • KEENE, NH 03431

EMERGENCY TELEPHONE No.  
**(603)352-1130**

DATE OF PREPARATION: 12/85

## SECTION I - IDENTIFICATION

This is MARKEM Ink MSDS Form 3.

MARKEM inks are mixtures of various components. This MSDS applies to one component present in many MARKEM inks. Complete identification of the OSHA-defined hazardous components of any MARKEM ink is obtained by selecting the various individual MSDS forms as indicated on the MARKEM INK MSDS CROSS-REFERENCE LIST or on the container of the ink. If you need further assistance, or more copies of this MSDS package, please call (603) 352-1130.

## SECTION II - PRINCIPAL HAZARDOUS COMPONENTS

HAZARDOUS COMPONENT	PERCENT RANGE	CAS No.
Cadmium sulfoselenide red	40% maximum	58339-34-7

## SECTION III - PHYSICAL DATA

BOILING POINT: NA	SPECIFIC GRAVITY (H <sub>2</sub> O = 1): 5.2
VAPOR PRESSURE, mm Hg: NA	PERCENT VOLATILE: 0
VAPOR DENSITY (AIR = 1): NA	EVAPORATION RATE: (n-Butyl acetate = 1) NA
SOLUBILITY IN WATER: insoluble	pH: NA
APPEARANCE: orange-red powder	ODOR: odorless

## SECTION IV - FIRE AND EXPLOSION HAZARD DATA

FLASH POINT: NA	FLAMMABLE LIMITS: LEL NA UEL NA
AUTOIGNITION TEMPERATURE: NA	EXTINGUISHING MEDIA: NA
UNUSUAL FIRE AND EXPLOSION HAZARDS: NA	
SPECIAL FIREFIGHTING METHODS: NA	

## SECTION V - HEALTH HAZARD DATA

TLV as Cd: 0.5 mg/m <sup>3</sup> as Se: 0.2 mg/m <sup>3</sup>	PEL as Cd: 0.2 mg/m <sup>3</sup> as Se: 0.2 mg/m <sup>3</sup>
CARCINOGEN: NTP <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	IARC <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO
EFFECTS OF OVEREXPOSURE: • EYES: mild irritant • SKIN: mild irritant • INHALATION: prolonged or repeated contact: respiratory irritation • INGESTION: Prolonged: may lead to pulmonary emphysema and/or kidney dysfunction	EMERGENCY FIRST AID: • EYES: Flush eyes with plenty of water. Call a physician if irritation develops. • SKIN: Wash skin with soap and water. • INHALATION: Remove to fresh air. Give oxygen. Call a physician. • INGESTION: Call a physician.
PRIMARY ROUTES OF ENTRY: inhalation, ingestion	
NOTES TO PHYSICIAN:	



## SECTION VI - REACTIVITY DATA

STABLE

UNSTABLE

CONDITIONS TO AVOID: conditions above 1300°F

HAZARDOUS POLYMERIZATION  WILL OCCUR  WILL NOT OCCUR

HAZARDOUS DECOMPOSITION PRODUCTS: soluble cadmium salts, hydrogen selenide, hydrogen sulfide

INCOMPATIBILITY - MATERIALS TO AVOID: strong acids

## SECTION VII - ENVIRONMENTAL PROTECTION PROCEDURES

SPILL RESPONSE:

Scoop up or vacuum spillage immediately. Avoid dusting.

WASTE DISPOSAL METHOD:

Under the Resource Conservation & Recovery Act (RCRA), it is the responsibility of the generator of the waste material to determine, at the time of disposal, whether the waste generated meets Federal or State Hazardous Waste Criteria. This is because uses, transformations, mixtures, processes, etc. may render the resulting material hazardous. As a result, consult Federal, state and local authorities for disposal information.

## SECTION VIII - SPECIAL PROTECTION INFORMATION

EYE PROTECTION:

safety glasses

RESPIRATORY PROTECTION:

Respirator, if exposure exceeds TLV

SKIN PROTECTION:

Gloves

VENTILATION RECOMMENDATIONS:

sufficient to keep exposure below TLV

OTHER PROTECTION:

None

## SECTION IX - OTHER INFORMATION

None

0872973 (1/86)

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DATE OF PREPARATION: 12/85

## SECTION I - IDENTIFICATION

This is MARKEM Ink MSDS Form 2.

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## SECTION II - PRINCIPAL HAZARDOUS COMPONENTS

HAZARDOUS COMPONENT	PERCENT RANGE	CAS No.
Lead chromate / Lead sulfate	40% maximum	1344-37-2

## SECTION III - PHYSICAL DATA

BOILING POINT: NA	SPECIFIC GRAVITY (H <sub>2</sub> O = 1): 5.9
VAPOR PRESSURE, mm Hg: NA	PERCENT VOLATILE: 0
VAPOR DENSITY (AIR = 1): NA	EVAPORATION RATE: (n-Butyl acetate = 1) NA
SOLUBILITY IN WATER: Insoluble	pH: NA
PEARANCE: soft yellow powder	ODOR: odorless

## SECTION IV - FIRE AND EXPLOSION HAZARD DATA

FLASH POINT: NA	FLAMMABLE LIMITS: LEL NA UEL NA
AUTOIGNITION TEMPERATURE: NA	EXTINGUISHING MEDIA: CO <sub>2</sub> , water
UNUSUAL FIRE AND EXPLOSION HAZARDS: Oxidizer. May ignite in presence of heat and combustible materials.	
SPECIAL FIREFIGHTING METHODS: None	

## SECTION V - HEALTH HAZARD DATA

TLV as Cr: 0.05 mg/m <sup>3</sup>	PEL as Cr: 0.05 mg/m <sup>3</sup> as Pb: 0.10 mg/m <sup>3</sup>
CARCINOGEN: NTP <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	IARC <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO
EFFECTS OF OVEREXPOSURE: • EYES: irritation	EMERGENCY FIRST AID: CALL A PHYSICIAN • EYES: Flush eyes with water for 15 minutes
• SKIN: irritation, allergic reaction	• SKIN: Flush skin with water
• INHALATION: respiratory irritation, allergic reaction, lead poisoning	• INHALATION: Remove to fresh air. Give oxygen.
• INGESTION: Reproductive system damage, lead poisoning, lung cancer	• INGESTION: Call a physician
PRIMARY ROUTES OF ENTRY: inhalation, ingestion	

NOTES TO PHYSICIAN: See OSHA standard 29 CFR 1910.1025 for information on lead poisoning and lead monitoring. See next page for information on carcinogenicity.



## SECTION VI - REACTIVITY DATA

STABLE       UNSTABLE      HAZARDOUS POLYMERIZATION  WILL OCCUR  WILL NOT OCCUR  
CONDITIONS TO AVOID:      Heat and combustible materials      HAZARDOUS DECOMPOSITION PRODUCTS:      None  
INCOMPATIBILITY - MATERIALS TO AVOID:      Combustible materials

## SECTION VII - ENVIRONMENTAL PROTECTION PROCEDURES

### SPILL RESPONSE:

Immediately scoop up spillage. Avoid dusting. Do not sweep--use vacuum.

### WASTE DISPOSAL METHOD:

Under the Resource Conservation & Recovery Act (RCRA), it is the responsibility of the generator of the waste material to determine, at the time of disposal, whether the waste generated meets Federal or State Hazardous Waste Criteria. This is because uses, transformations, mixtures, processes, etc. may render the resulting material hazardous. As a result, consult Federal, state and local authorities for disposal information.

## SECTION VIII - SPECIAL PROTECTION INFORMATION

### EYE PROTECTION:

Goggles

### RESPIRATORY PROTECTION:

See OSHA standard 29 CFR 1910.1025

### SKIN PROTECTION:

Gloves

### VENTILATION RECOMMENDATIONS:

See OSHA standard 29 CFR 1910.1025

### OTHER PROTECTION:

Avoid breathing dust

## SECTION IX - OTHER INFORMATION

LEAD CHROMATE is currently listed as a suspect carcinogen: therefore, this information is included, even though recent toxicity data indicate lead chromates

- are non-carcinogenic, or at most show extremely low carcinogenic potential based on studies from lung implantation experiments in rats.
- do not show an increase in lung cancer rate from epidemiological studies in factories which produce only lead chromate.

0872972 (1/86)

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**(603)352-1130**

DATE OF PREPARATION: 12/85

## SECTION I - IDENTIFICATION

This is MARKEM Inks MSDS Form 1.

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## SECTION II - PRINCIPAL HAZARDOUS COMPONENTS

HAZARDOUS COMPONENT	PERCENT RANGE	CAS No.
This ink does not contain any hazardous pigments as defined in the OSHA Hazard Communication Act 29 CFR 1910.1200	NA	NA

## SECTION III - PHYSICAL DATA

BOILING POINT: NA	SPECIFIC GRAVITY (H <sub>2</sub> O = 1): NA
VAPOR PRESSURE, mm Hg: NA	PERCENT VOLATILE: NA
VAPOR DENSITY (AIR = 1): NA	EVAPORATION RATE: (n-Butyl acetate = 1) NA
SOLUBILITY IN WATER: NA	pH: NA
APPEARANCE: NA	ODOR: NA

## SECTION IV - FIRE AND EXPLOSION HAZARD DATA

FLASH POINT: NA	FLAMMABLE LIMITS: LEL NA UEL NA
AUTOIGNITION TEMPERATURE: NA	EXTINGUISHING MEDIA: NA
UNUSUAL FIRE AND EXPLOSION HAZARDS: NA	
SPECIAL FIREFIGHTING METHODS: NA	

## SECTION V - HEALTH HAZARD DATA

TLV NA	PEL NA
CARCINOGEN: NTP <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	IARC <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO
EFFECTS OF OVEREXPOSURE: NA	EMERGENCY FIRST AID: NA
• EYES:	• EYES:
• SKIN:	• SKIN:
• INHALATION:	• INHALATION:
• INGESTION:	• INGESTION:

PRIMARY ROUTES OF ENTRY:

NOTES TO PHYSICIAN:







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DATE OF PREPARATION: 12/85

## SECTION I - IDENTIFICATION

This is MARKEM Ink MSDS Form A.

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## SECTION II - PRINCIPAL HAZARDOUS COMPONENTS

HAZARDOUS COMPONENT	PERCENT RANGE	CAS No.
This ink does not contain any hazardous solvents as defined in the OSHA Hazard Communication Act 29 CFR 1910.1200.	NA	NA

## SECTION III - PHYSICAL DATA

BOILING POINT: NA	SPECIFIC GRAVITY (H <sub>2</sub> O = 1): NA
VAPOR PRESSURE, mm Hg: NA	PERCENT VOLATILE: NA
VAPOR DENSITY (AIR = 1): NA	EVAPORATION RATE: (n-Butyl acetate = 1) NA
SOLUBILITY IN WATER: NA	pH: NA
APPEARANCE: NA	ODOR: NA

## SECTION IV - FIRE AND EXPLOSION HAZARD DATA

FLASH POINT: NA	FLAMMABLE LIMITS: LEL NA UEL NA
AUTOIGNITION TEMPERATURE: NA	EXTINGUISHING MEDIA: NA
UNUSUAL FIRE AND EXPLOSION HAZARDS: NA	
SPECIAL FIREFIGHTING METHODS: NA	

## SECTION V - HEALTH HAZARD DATA

TLV NA	PEL NA
CARCINOGEN: NTP <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	IARC <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO
EFFECTS OF OVEREXPOSURE: • EYES: NA	EMERGENCY FIRST AID: • EYES: NA
• SKIN:	• SKIN:
• INHALATION:	• INHALATION:
• INGESTION:	• INGESTION:
PRIMARY ROUTES OF ENTRY:	
NOTES TO PHYSICIAN:	



## SECTION VI - REACTIVITY DATA

STABLE

UNSTABLE

CONDITIONS TO AVOID:

NA

HAZARDOUS POLYMERIZATION  WILL OCCUR  WILL NOT OCCUR

HAZARDOUS DECOMPOSITION PRODUCTS:

NA

INCOMPATIBILITY - MATERIALS TO AVOID:

## SECTION VII - ENVIRONMENTAL PROTECTION PROCEDURES

SPILL RESPONSE:

NA

WASTE DISPOSAL METHOD:

Under the Resource Conservation & Recovery Act (RCRA), it is the responsibility of the generator of the waste material to determine, at the time of disposal, whether the waste generated meets Federal or State Hazardous Waste Criteria. This is because uses, transformations, mixtures, processes, etc. may render the resulting material hazardous. As a result, consult Federal, state and local authorities for disposal information.

## SECTION VIII - SPECIAL PROTECTION INFORMATION

EYE PROTECTION:

NA

RESPIRATORY PROTECTION:

NA

SKIN PROTECTION:

NA

VENTILATION RECOMMENDATIONS:

NA

OTHER PROTECTION:

NA

## SECTION IX - OTHER INFORMATION

NA

0872961 (1/86)

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