

MATERIAL SAFETY 3M
DATA SHEET 3M Center
 St. Paul, Minnesota
 55144-1000
 1-800-364-3577 or (651) 737-6501 (24 hours)

Copyright, 1998, Minnesota Mining and Manufacturing Company.
All rights reserved. Copying and/or downloading of this
information for the purpose of properly utilizing 3M products
is allowed provided that:
1) the information is copied in full with no changes unless
prior agreement is obtained from 3M, and
2) neither the copy nor the original is resold or otherwise
distributed with the intention of earning a profit thereon.

DIVISION: SAFETY & SECURITY SYSTEMS DIVISION
TRADE NAME:
3M 8014 REFLECTIVE INK KIT
ID NUMBER/U.P.C.:
75-0500-2268-2 00-51138-66927-0
ISSUED: September 01, 1998
SUPERSEDES: April 29, 1998
DOCUMENT: 08-3390-5

This product is a kit or a multipart product which consists of multiple,
independently packaged components. An MSDS for each of these components is
included. Please do not separate the component MSDSs from this cover page.
The document numbers of the MSDSs for components of this product are:
08-3389-7
08-2126-4
08-2127-2

Abbreviations: N/D - Not Determined N/A - Not Applicable CA - Approximately

The information in this Material Safety Data Sheet (MSDS) is believed to
be correct as of the date issued. 3M MAKES NO WARRANTIES, EXPRESSED OR
IMPLIED, INCLUDING, BUT NOT LIMITED TO, ANY IMPLIED WARRANTY OF
MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE OR COURSE OF
PERFORMANCE OR USAGE OF TRADE. User is responsible for determining
whether the 3M product is fit for a particular purpose and suitable for
user's method of use or application. Given the variety of factors that
can affect the use and application of a 3M product, some of which are
uniquely within the user's knowledge and control, it is essential that
the user evaluate the 3M product to determine whether it is fit for a
particular purpose and suitable for user's method of use or application.

3M provides information in electronic form as a service to its customers.
Due to the remote possibility that electronic transfer may have resulted
in errors, omissions or alterations in this information, 3M makes no
representations as to its completeness or accuracy. In addition,
information obtained from a database may not be as current as the
information in the MSDS available directly from 3M.



Material Safety Data Sheet

Copyright, 2006, 3M Company. All rights reserved. Copying and/or downloading of this information for the purpose of properly utilizing 3M products is allowed provided that: (1) the information is copied in full with no changes unless prior written agreement is obtained from 3M, and (2) neither the copy nor the original is resold or otherwise distributed with the intention of earning a profit thereon.

SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: REFLECTIVE INK,PART B
MANUFACTURER: 3M
DIVISION: Occupational Health & Environ. Safety

ADDRESS: 3M Center
 St. Paul, MN 55144-1000

EMERGENCY PHONE: 1-800-364-3577 or (651) 737-6501 (24 hours)

Issue Date: 05/30/2006
Supersedes Date: 05/26/2006

Document Group: 08-2126-4

Product Use:

Intended Use: COMPONENT OF REFLECTIVE INK KIT FOR FABRIC PRINTING
Specific Use: Aluminum Coated Beads for Reflective Ink Kits

SECTION 2: INGREDIENTS

<u>Ingredient</u>	<u>C.A.S. No.</u>	<u>% by Wt</u>
ALUMINUM COATED GLASS BEADS	None	100

SECTION 3: HAZARDS IDENTIFICATION

3.1 EMERGENCY OVERVIEW

Specific Physical Form: Beads

Odor, Color, Grade: Glass beads

General Physical Form: Solid

Immediate health, physical, and environmental hazards:

3.2 POTENTIAL HEALTH EFFECTS

Eye Contact:

Mechanical eye irritation: Signs/symptoms may include pain, redness, tearing and corneal abrasion.

Skin Contact:

Mechanical Skin irritation: Signs/symptoms may include abrasion, redness, pain, and itching.

Inhalation:

Respiratory Tract Irritation: Signs/symptoms may include cough, sneezing, nasal discharge, headache, hoarseness, and nose and throat pain.

Ingestion:

Gastrointestinal Irritation: Signs/symptoms may include abdominal pain, stomach upset, nausea, vomiting and diarrhea.

SECTION 4: FIRST AID MEASURES

4.1 FIRST AID PROCEDURES

The following first aid recommendations are based on an assumption that appropriate personal and industrial hygiene practices are followed.

Eye Contact: Flush eyes with large amounts of water. If signs/symptoms persist, get medical attention.

Skin Contact: Wash affected area with soap and water. If signs/symptoms develop, get medical attention.

Inhalation: Remove person to fresh air. If signs/symptoms develop, get medical attention.

If Swallowed: Do not induce vomiting unless instructed to do so by medical personnel. Give victim two glasses of water. Never give anything by mouth to an unconscious person. Get medical attention.

SECTION 5: FIRE FIGHTING MEASURES

5.1 FLAMMABLE PROPERTIES

Autoignition temperature	<i>Not Applicable</i>
Flash Point	<i>Not Applicable</i>
Flammable Limits - LEL	<i>Not Applicable</i>
Flammable Limits - UEL	<i>Not Applicable</i>

5.2 EXTINGUISHING MEDIA

Material will not burn.

5.3 PROTECTION OF FIRE FIGHTERS

Special Fire Fighting Procedures: Wear full protective equipment (Bunker Gear) and a self-contained breathing apparatus (SCBA).

Unusual Fire and Explosion Hazards: Not applicable.

Note: See STABILITY AND REACTIVITY (SECTION 10) for hazardous combustion and thermal decomposition

information.

SECTION 6: ACCIDENTAL RELEASE MEASURES

Accidental Release Measures: Observe precautions from other sections. Call 3M- HELPS line (1-800-364-3577) for more information on handling and managing the spill. Ventilate the area with fresh air. Collect as much of the spilled material as possible. Place in a closed container approved for transportation by appropriate authorities.

In the event of a release of this material, the user should determine if the release qualifies as reportable according to local, state, and federal regulations.

SECTION 7: HANDLING AND STORAGE

7.1 HANDLING

Do not eat, drink or smoke when using this product. Wash exposed areas thoroughly with soap and water. Avoid eye contact with dust or airborne particles. Use general dilution ventilation and/or local exhaust ventilation to control airborne exposures to below Occupational Exposure Limits. If ventilation is not adequate, use respiratory protection equipment.

7.2 STORAGE

Keep from freezing.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 ENGINEERING CONTROLS

Use general dilution ventilation and/or local exhaust ventilation to control airborne exposures to below Occupational Exposure Limits and/or control dust, fume, or airborne particles. If ventilation is not adequate, use respiratory protection equipment.

8.2 PERSONAL PROTECTIVE EQUIPMENT (PPE)

8.2.1 Eye/Face Protection

Avoid eye contact.

The following eye protection(s) are recommended: Safety Glasses with side shields.

8.2.2 Skin Protection

Avoid prolonged or repeated skin contact.

8.2.3 Respiratory Protection

Avoid breathing of dust.

Select one of the following NIOSH approved respirators based on airborne concentration of contaminants and in accordance with OSHA regulations: Half facepiece or fullface air-purifying respirator with N95 particulate filters. Consult the current 3M Respiratory Selection Guide for additional information or call 1-800-243-4630 for 3M technical assistance.

8.2.4 Prevention of Swallowing

Do not eat, drink or smoke when using this product. Wash exposed areas thoroughly with soap and water. Not an expected route of exposure.

8.3 EXPOSURE GUIDELINES

<u>Ingredient</u>	<u>Authority</u>	<u>Type</u>	<u>Limit</u>	<u>Additional Information</u>
ALUMINUM PYRO POWDERS	ACGIH	TWA, as Al	5 mg/m3	
ALUMINUM PYRO POWDERS	OSHA	TWA, as Al	5 mg/m3	Table Z-1A

SOURCE OF EXPOSURE LIMIT DATA:

ACGIH: American Conference of Governmental Industrial Hygienists
 CMRG: Chemical Manufacturer Recommended Guideline
 OSHA: Occupational Safety and Health Administration
 AIHA: American Industrial Hygiene Association Workplace Environmental Exposure Level (WEEL)

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

Specific Physical Form:	Beads
Odor, Color, Grade:	Glass beads
General Physical Form:	Solid
Autoignition temperature	<i>Not Applicable</i>
Flash Point	<i>Not Applicable</i>
Flammable Limits - LEL	<i>Not Applicable</i>
Flammable Limits - UEL	<i>Not Applicable</i>
Boiling point	<i>Not Applicable</i>
Vapor Density	<i>Not Applicable</i>
Vapor Pressure	<i>Not Applicable</i>
Specific Gravity	<i>No Data Available</i>
pH	<i>Not Applicable</i>
Melting point	<i>No Data Available</i>
Solubility In Water	<i>Not Applicable</i>
Evaporation rate	<i>Not Applicable</i>
Volatile Organic Compounds	<i>Not Applicable</i>
Percent volatile	<i>Not Applicable</i>
VOC Less H2O & Exempt Solvents	<i>Not Applicable</i>
Viscosity	<i>Not Applicable</i>

SECTION 10: STABILITY AND REACTIVITY

Stability: Stable.

Materials and Conditions to Avoid: None known

Hazardous Polymerization: Hazardous polymerization will not occur.

Hazardous Decomposition or By-Products

<u>Substance</u>	<u>Condition</u>
None known.	Not Specified

Hazardous Decomposition: Aluminum fumes

SECTION 11: TOXICOLOGICAL INFORMATION

Please contact the address listed on the first page of the MSDS for Toxicological Information on this material and/or its components.

SECTION 12: ECOLOGICAL INFORMATION

ECOTOXICOLOGICAL INFORMATION

Not determined.

CHEMICAL FATE INFORMATION

Not determined.

SECTION 13: DISPOSAL CONSIDERATIONS

Waste Disposal Method: Dispose of waste product in a sanitary landfill. Incinerate in an industrial or commercial facility in the presence of a combustible material. For quantities <100 lbs. (50kg): dispose of waste product in a sanitary landfill. As a disposal alternative, dispose of waste product in a facility permitted to accept chemical waste.

EPA Hazardous Waste Number (RCRA): Not regulated

Since regulations vary, consult applicable regulations or authorities before disposal.

SECTION 14: TRANSPORT INFORMATION

INK KIT,PART B

Please contact the emergency numbers listed on the first page of the MSDS for Transportation Information for this material.

SECTION 15: REGULATORY INFORMATION

US FEDERAL REGULATIONS

Contact 3M for more information.

311/312 Hazard Categories:

Fire Hazard - No Pressure Hazard - No Reactivity Hazard - No Immediate Hazard - Yes Delayed Hazard - No

STATE REGULATIONS

Contact 3M for more information.

CHEMICAL INVENTORIES

Contact 3M for more information.

INTERNATIONAL REGULATIONS

Contact 3M for more information.

ADDITIONAL INFORMATION

None

This MSDS has been prepared to meet the U.S. OSHA Hazard Communication Standard, 29 CFR 1910.1200.

SECTION 16: OTHER INFORMATION

NFPA Hazard Classification

Health: 1 **Flammability:** 0 **Reactivity:** 0 **Special Hazards:** None

National Fire Protection Association (NFPA) hazard ratings are designed for use by emergency response personnel to address the hazards that are presented by short-term, acute exposure to a material under conditions of fire, spill, or similar emergencies. Hazard ratings are primarily based on the inherent physical and toxic properties of the material but also include the toxic properties of combustion or decomposition products that are known to be generated in significant quantities.

Revision Changes:

Section 16: NFPA hazard classification for health was modified.

Section 6: Release measures information was modified.

Section 7: Handling information was modified.

Section 8: Prevention of swallowing information was modified.

Section 13: Waste disposal method information was modified.

Section 3 and Section 9: General physical form information was modified.

Section 5: Flammability note on stability and reactivity was added.

Section 10: Hazardous decomposition or by-products heading was added.

Section 10: Hazardous decomposition or by-products table was added.

DISCLAIMER: The information in this Material Safety Data Sheet (MSDS) is believed to be correct as of the date issued. 3M MAKES NO WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE OR COURSE OF PERFORMANCE OR USAGE OF TRADE. User is responsible for determining whether the 3M product is fit for a particular purpose and suitable for user's method of

use or application. Given the variety of factors that can affect the use and application of a 3M product, some of which are uniquely within the user's knowledge and control, it is essential that the user evaluate the 3M product to determine whether it is fit for a particular purpose and suitable for user's method of use or application.

3M provides information in electronic form as a service to its customers. Due to the remote possibility that electronic transfer may have resulted in errors, omissions or alterations in this information, 3M makes no representations as to its completeness or accuracy. In addition, information obtained from a database may not be as current as the information in the MSDS available directly from 3M.



Material Safety Data Sheet

Copyright, 2006, 3M Company. All rights reserved. Copying and/or downloading of this information for the purpose of properly utilizing 3M products is allowed provided that: (1) the information is copied in full with no changes unless prior written agreement is obtained from 3M, and (2) neither the copy nor the original is resold or otherwise distributed with the intention of earning a profit thereon.

SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: REFLECTIVE INK,PART C
MANUFACTURER: 3M
DIVISION: Occupational Health & Environ. Safety

ADDRESS: 3M Center
 St. Paul, MN 55144-1000

EMERGENCY PHONE: 1-800-364-3577 or (651) 737-6501 (24 hours)

Issue Date: 06/07/2006
Supersedes Date: 05/26/2006

Document Group: 08-2127-2

Product Use:

Intended Use: COMPONENT OF REFLECTIVE INK KIT FOR FABRIC PRINTING
Specific Use: Provide durability to Part A Bead Bond

SECTION 2: INGREDIENTS

<u>Ingredient</u>	<u>C.A.S. No.</u>	<u>% by Wt</u>
3-(TRIMETHOXYSILYL)PROPYL GLYCIDYL ETHER	2530-83-8	<= 100
ALLYL GLYCIDYL ETHER	106-92-3	< 1

SECTION 3: HAZARDS IDENTIFICATION

3.1 EMERGENCY OVERVIEW

Odor, Color, Grade: Clear, light colored, ester odor

General Physical Form: Liquid

Immediate health, physical, and environmental hazards: May cause severe eye irritation. May cause allergic skin reaction. May cause target organ effects.

3.2 POTENTIAL HEALTH EFFECTS

Eye Contact:

Severe Eye Irritation: Signs/symptoms may include significant redness, swelling, pain, tearing, cloudy appearance of the cornea, and impaired vision.

Skin Contact:

Allergic Skin Reaction (non-photo induced): Signs/symptoms may include redness, swelling, blistering, and itching.

Moderate Skin Irritation: Signs/symptoms may include localized redness, swelling, itching, and dryness.

Inhalation:

Respiratory Tract Irritation: Signs/symptoms may include cough, sneezing, nasal discharge, headache, hoarseness, and nose and throat pain.

May be absorbed following inhalation and cause target organ effects.

Ingestion:

Gastrointestinal Irritation: Signs/symptoms may include abdominal pain, stomach upset, nausea, vomiting and diarrhea.

May be absorbed following ingestion and cause target organ effects.

Target Organ Effects:

Central Nervous System (CNS) Depression: Signs/symptoms may include headache, dizziness, drowsiness, incoordination, nausea, slowed reaction time, slurred speech, giddiness, and unconsciousness.

SECTION 4: FIRST AID MEASURES

4.1 FIRST AID PROCEDURES

The following first aid recommendations are based on an assumption that appropriate personal and industrial hygiene practices are followed.

Eye Contact: Immediately flush eyes with large amounts of water for at least 15 minutes. Get immediate medical attention.

Skin Contact: Remove contaminated clothing and shoes. Immediately flush skin with large amounts of water. Get medical attention. Wash contaminated clothing and clean shoes before reuse.

Inhalation: Remove person to fresh air. If signs/symptoms develop, get medical attention.

If Swallowed: Do not induce vomiting unless instructed to do so by medical personnel. Get medical attention. Methanol may be liberated from 3-(TRIMETHOXYSILYL)PROPYL GLYCIDYL ETHER if swallowed.

SECTION 5: FIRE FIGHTING MEASURES

5.1 FLAMMABLE PROPERTIES

Autoignition temperature	<i>No Data Available</i>
Flash Point	Approximately 107.78 °C
Flammable Limits - LEL	<i>No Data Available</i>
Flammable Limits - UEL	<i>No Data Available</i>
OSHA Flammability Classification:	Class IIIB Combustible Liquid

5.2 EXTINGUISHING MEDIA

Use fire extinguishers with class B extinguishing agents (e.g., dry chemical, carbon dioxide).

5.3 PROTECTION OF FIRE FIGHTERS

Special Fire Fighting Procedures: Wear full protective equipment (Bunker Gear) and a self-contained breathing apparatus (SCBA).

Unusual Fire and Explosion Hazards: Not applicable.

Note: See STABILITY AND REACTIVITY (SECTION 10) for hazardous combustion and thermal decomposition information.

SECTION 6: ACCIDENTAL RELEASE MEASURES

Accidental Release Measures: Observe precautions from other sections. Call 3M- HELPS line (1-800-364-3577) for more information on handling and managing the spill. Evacuate unprotected and untrained personnel from hazard area. The spill should be cleaned up by qualified personnel. Ventilate the area with fresh air. For large spill, or spills in confined spaces, provide mechanical ventilation to disperse or exhaust vapors, in accordance with good industrial hygiene practice. Warning! A motor could be an ignition source and could cause flammable gases or vapors in the spill area to burn or explode. Contain spill. For larger spills, cover drains and build dikes to prevent entry into sewer systems or bodies of water. Working from around the edges of the spill inward, cover with bentonite, vermiculite, or commercially available inorganic absorbent material. Mix in sufficient absorbent until it appears dry. Collect as much of the spilled material as possible. Clean up residue with detergent and water. Collect the resulting residue containing solution. Place in a closed container approved for transportation by appropriate authorities. Dispose of collected material as soon as possible.

In the event of a release of this material, the user should determine if the release qualifies as reportable according to local, state, and federal regulations.

SECTION 7: HANDLING AND STORAGE

7.1 HANDLING

Do not eat, drink or smoke when using this product. Wash exposed areas thoroughly with soap and water. Avoid breathing of vapors, mists or spray. Avoid contact with oxidizing agents. Use general dilution ventilation and/or local exhaust ventilation to control airborne exposures to below Occupational Exposure Limits. If ventilation is not adequate, use respiratory protection equipment.

7.2 STORAGE

Keep container tightly closed. Store away from oxidizing agents.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 ENGINEERING CONTROLS

Use with appropriate local exhaust ventilation.

8.2 PERSONAL PROTECTIVE EQUIPMENT (PPE)

8.2.1 Eye/Face Protection

Avoid eye contact.

The following eye protection(s) are recommended: Indirect Vented Goggles.

8.2.2 Skin Protection

Avoid skin contact.

Select and use gloves and/or protective clothing to prevent skin contact based on the results of an exposure assessment. Consult with your glove and/or protective clothing manufacturer for selection of appropriate compatible materials.

Gloves made from the following material(s) are recommended: Butyl Rubber, Neoprene, Nitrile Rubber, Polyvinyl Chloride.

8.2.3 Respiratory Protection

Avoid breathing of vapors, mists or spray.

Select one of the following NIOSH approved respirators based on airborne concentration of contaminants and in accordance with OSHA regulations: Fullface air-purifying respirator with organic vapor cartridges, Fullface supplied-air respirator. Consult the current 3M Respiratory Selection Guide for additional information or call 1-800-243-4630 for 3M technical assistance.

8.2.4 Prevention of Swallowing

Do not eat, drink or smoke when using this product. Wash exposed areas thoroughly with soap and water. Not applicable.

8.3 EXPOSURE GUIDELINES

<u>Ingredient</u>	<u>Authority</u>	<u>Type</u>	<u>Limit</u>	<u>Additional Information</u>
3-(TRIMETHOXSILYL)PROPYL GLYCIDYL ETHER	CMRG	TWA	5 ppm	
ALLYL GLYCIDYL ETHER	ACGIH	TWA	1 ppm	Table A4
ALLYL GLYCIDYL ETHER	OSHA	TWA, Vacated	5 ppm	
ALLYL GLYCIDYL ETHER	OSHA	CEIL	10 ppm	Table Z-1A

VAC Vacated PEL: Vacated Permissible Exposure Limits [PEL] are enforced as the OSHA PEL in some states. Check with your local regulatory agency.

SOURCE OF EXPOSURE LIMIT DATA:

ACGIH: American Conference of Governmental Industrial Hygienists

CMRG: Chemical Manufacturer Recommended Guideline

OSHA: Occupational Safety and Health Administration

AIHA: American Industrial Hygiene Association Workplace Environmental Exposure Level (WEEL)

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

Odor, Color, Grade:	Clear, light colored, ester odor
General Physical Form:	Liquid
Autoignition temperature	<i>No Data Available</i>
Flash Point	Approximately 107.78 °C
Flammable Limits - LEL	<i>No Data Available</i>
Flammable Limits - UEL	<i>No Data Available</i>
Boiling point	290 °C
Vapor Density	>=1.0 [<i>Ref Std: AIR=1</i>]
Vapor Pressure	<=5.0 mmHg [<i>@ 20 °C</i>]
Specific Gravity	1.069 [<i>Ref Std: WATER=1</i>]
pH	<i>Not Applicable</i>
Melting point	<i>Not Applicable</i>
Solubility in Water	Complete
Evaporation rate	<=1.0 [<i>Ref Std: BUOAC=1</i>]

Volatile Organic Compounds	3.5 g/l [<i>Details:</i> CONDITIONS: combined]
Percent volatile	Approximately 45 % weight
VOC Less H2O & Exempt Solvents	6 g/l [<i>Details:</i> CONDITIONS: combined]
Viscosity	Approximately 20000 centipoise

SECTION 10: STABILITY AND REACTIVITY

Stability: Stable.

Materials and Conditions to Avoid: Strong oxidizing agents

Hazardous Polymerization: Hazardous polymerization will not occur.

Hazardous Decomposition or By-Products

<u>Substance</u>	<u>Condition</u>
Carbon monoxide	Not Specified
Carbon dioxide	Not Specified

Hazardous Decomposition: Oxides of Silicon

SECTION 11: TOXICOLOGICAL INFORMATION

Please contact the address listed on the first page of the MSDS for Toxicological Information on this material and/or its components.

SECTION 12: ECOLOGICAL INFORMATION

ECOTOXICOLOGICAL INFORMATION

Not determined.

CHEMICAL FATE INFORMATION

Not determined.

SECTION 13: DISPOSAL CONSIDERATIONS

Waste Disposal Method: Incinerate in an industrial or commercial facility. As a disposal alternative, dispose of waste product in a facility permitted to accept chemical waste.

EPA Hazardous Waste Number (RCRA): Not regulated

Since regulations vary, consult applicable regulations or authorities before disposal.

SECTION 14: TRANSPORT INFORMATION

LE-PINK-PART-C

Please contact the emergency numbers listed on the first page of the MSDS for Transportation Information for this material.

SECTION 15: REGULATORY INFORMATION

US FEDERAL REGULATIONS

Contact 3M for more information.

311/312 Hazard Categories:

Fire Hazard - Yes Pressure Hazard - No Reactivity Hazard - No Immediate Hazard - Yes Delayed Hazard - Yes

STATE REGULATIONS

Contact 3M for more information.

CHEMICAL INVENTORIES

Contact 3M for more information.

INTERNATIONAL REGULATIONS

Contact 3M for more information.

This MSDS has been prepared to meet the U.S. OSHA Hazard Communication Standard, 29 CFR 1910.1200.

SECTION 16: OTHER INFORMATION

NFPA Hazard Classification

Health: 2 Flammability: 1 Reactivity: 0 Special Hazards: None

National Fire Protection Association (NFPA) hazard ratings are designed for use by emergency response personnel to address the hazards that are presented by short-term, acute exposure to a material under conditions of fire, spill, or similar emergencies. Hazard ratings are primarily based on the inherent physical and toxic properties of the material but also include the toxic properties of combustion or decomposition products that are known to be generated in significant quantities.

HMIS Hazard Classification**Health: 2 Flammability: 1 Reactivity: 0 Protection: A**

Hazardous Material Identification System (HMIS(r)) hazard ratings are designed to inform employees of chemical hazards in the workplace. These ratings are based on the inherent properties of the material under expected conditions of normal use and are not intended for use in emergency situations. HMIS(r) ratings are to be used with a fully implemented HMIS(r) program. HMIS(r) is a registered mark of the National Paint and Coatings Association (NPCA).

Revision Changes:

Section 3: Potential effects from skin contact information was modified.
Section 3: Potential effects from inhalation information was modified.
Section 3: Potential effects from ingestion information was modified.
Section 5: Extinguishing media information was modified.
Section 7: Handling information was modified.
Section 7: Storage information was modified.
Section 8: Prevention of swallowing information was modified.
Section 2: Ingredient table was modified.
Section 3: Other health effects information was modified.
Section 14: ID Number(s) was modified.
Section 8: Exposure guidelines ingredient information was modified.
Section 9: Vapor pressure value was modified.
Section 9: Melting point information was modified.
Section 8: Exposure guidelines legend was added.
Section 9: pH information was added.
Section 3: Immediate ingestion hazard(s) was deleted.
Section 3: Immediate physical hazard(s) was deleted.
Section 3: Immediate ingestion hazard(s) comment was deleted.
Section 4: First aid for ingestion (swallowing) - intervention - was deleted.

DISCLAIMER: The information in this Material Safety Data Sheet (MSDS) is believed to be correct as of the date issued. 3M MAKES NO WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE OR COURSE OF PERFORMANCE OR USAGE OF TRADE. User is responsible for determining whether the 3M product is fit for a particular purpose and suitable for user's method of use or application. Given the variety of factors that can affect the use and application of a 3M product, some of which are uniquely within the user's knowledge and control, it is essential that the user evaluate the 3M product to determine whether it is fit for a particular purpose and suitable for user's method of use or application.

3M provides information in electronic form as a service to its customers. Due to the remote possibility that electronic transfer may have resulted in errors, omissions or alterations in this information, 3M makes no representations as to its completeness or accuracy. In addition, information obtained from a database may not be as current as the information in the MSDS available directly from 3M.

MATERIAL SAFETY 3M
 DATA SHEET 3M Center
 St. Paul, Minnesota
 55144-1000
 1-800-364-3577 or (651) 737-6501 (24 hours)

Copyright, 2001, Minnesota Mining and Manufacturing Company.
 All rights reserved. Copying and/or downloading of this
 information for the purpose of properly utilizing 3M products
 is allowed provided that:

- 1) the information is copied in full with no changes unless
 prior agreement is obtained from 3M, and
- 2) neither the copy nor the original is resold or otherwise
 distributed with the intention of earning a profit thereon.

DIVISION: SAFETY & SECURITY SYSTEMS DIVISION
 TRADE NAME:

3M SCOTCHLITE (TM) 8014 RED REFLECTIVE INK,PART A
 ISSUED: March 28, 2001
 SUPERSEDES: October 20, 2000
 DOCUMENT: 08-3389-7

1. INGREDIENT	C.A.S. NO.	PERCENT	
WATER.....	7732-18-5	60.0	- 70.0
SILICA.....	7631-86-9	15.0	- 25
ACRYLIC POLYMERS.....	Unknown	15.0	- 20.0
ORGANIC RED PIGMENT (N.J.Trade Secret Registry# 04499600-6250P, 04499600- 6247P.....	TradeSecret	1.5	- 2.5
AMMONIUM HYDROXIDE.....	1336-21-6		< 1.0
DIIODOMETHYL P-TOLYL SULFONE.....	20018-09-1		< 0.3
AMMONIUM NITRATE.....	6484-52-2		< 0.2
FORMALDEHYDE.....	50-00-0		< 0.02

The components of this product are in compliance with the chemical
 notification requirements of TSCA. All applicable chemical
 ingredients in this material are listed on the European Inventory of
 Existing Chemical Substances (EINECS), or are exempt polymers whose
 monomers are listed on EINECS.

This product contains the following toxic chemical or chemicals subject to
 the reporting requirements of Section 313 of Title III of the Emergency
 Planning and Community Right-To-Know Act of 1986 and 40 CFR Part 372:

AMMONIUM HYDROXIDE
 AMMONIUM NITRATE
 FORMALDEHYDE

Abbreviations: N/D - Not Determined N/A - Not Applicable CA - Approximately

2. PHYSICAL DATA

BOILING POINT:..... > 212 F
VAPOR PRESSURE:..... ca. 17.5 mm
VAPOR DENSITY:..... ca. 0.60 Air=1
EVAPORATION RATE:..... ca. 1.8 BuOAc=1
SOLUBILITY IN WATER:..... complete
SPECIFIC GRAVITY:..... ca. 1.05 Water=1 ASTM
PERCENT VOLATILE:..... 65.0 - 70.0 % by wt
pH:..... 7.0 - 8.0
VISCOSITY:..... 360 - 480 poise
MELTING POINT:..... N/A

APPEARANCE AND ODOR:
Thick red paste

3. FIRE AND EXPLOSION HAZARD DATA

FLASH POINT:..... > 250 F
FLAMMABLE LIMITS - LEL:..... N/A
FLAMMABLE LIMITS - UEL:..... N/A
AUTOIGNITION TEMPERATURE:..... N/A

EXTINGUISHING MEDIA:
Not applicable

SPECIAL FIRE FIGHTING PROCEDURES:
Not applicable

UNUSUAL FIRE AND EXPLOSION HAZARDS:
No unusual fire or explosion hazards are anticipated.

NFPA HAZARD CODES: HEALTH: 1 FIRE: 1 REACTIVITY: 0
UNUSUAL REACTION HAZARD: none

OSHA FIRE HAZARD CLASS: Not applicable

4. REACTIVITY DATA

STABILITY: Stable

INCOMPATIBILITY - MATERIALS/CONDITIONS TO AVOID:
None known.

HAZARDOUS POLYMERIZATION: Hazardous polymerization will not occur.

Abbreviations: N/D - Not Determined N/A - Not Applicable CA - Approximately

4. REACTIVITY DATA (continued)

HAZARDOUS DECOMPOSITION PRODUCTS:
Not determined

5. ENVIRONMENTAL INFORMATION

SPILL RESPONSE:

Observe precautions from other sections. Ventilate area. Collect spilled material. Clean up residue with water. Place in a closed container.

RECOMMENDED DISPOSAL:

Incinerate in an industrial or commercial facility in the presence of a combustible material. Disposal alternative: Dispose of waste product in a facility permitted to accept chemical waste.

ENVIRONMENTAL DATA:

Not determined.

REGULATORY INFORMATION:

Volatile Organic Compounds: N/D.
VOC Less H2O & Exempt Solvents: N/D.

Since regulations vary, consult applicable regulations or authorities before disposal. In the event of an uncontrolled release of this material, the user should determine if the release qualifies as a reportable quantity. U.S. EPA Hazardous Waste Number = None (Not U.S. EPA Hazardous).

EPCRA HAZARD CLASS:

FIRE HAZARD: No PRESSURE: No REACTIVITY: No ACUTE: No CHRONIC: No

6. SUGGESTED FIRST AID

EYE CONTACT:

Immediately flush eyes with large amounts of water. Get immediate medical attention.

SKIN CONTACT:

Flush skin with large amounts of water. If irritation persists, get medical attention.

INHALATION:

If signs/symptoms occur, remove person to fresh air. If signs/symptoms continue, call a physician.

Abbreviations: N/D - Not Determined N/A - Not Applicable CA - Approximately

6. SUGGESTED FIRST AID (continued)

IF SWALLOWED:

Drink two glasses of water. Call a physician.

7. PRECAUTIONARY INFORMATION

EYE PROTECTION:

Avoid eye contact. Wear safety glasses with side shields.

SKIN PROTECTION:

Avoid prolonged or repeated skin contact.

RECOMMENDED VENTILATION:

Provide sufficient ventilation to maintain emissions below recommended exposure limits.

RESPIRATORY PROTECTION:

Avoid prolonged breathing of vapors.

PREVENTION OF ACCIDENTAL INGESTION:

Wash hands after handling and before eating.

RECOMMENDED STORAGE:

Keep container closed when not in use.

FIRE AND EXPLOSION AVOIDANCE:

Not applicable.

HMIS HAZARD RATINGS: HEALTH: 0 FLAMMABILITY: 0 REACTIVITY: 0
PERSONAL PROTECTION: B

EXPOSURE LIMITS

INGREDIENT	VALUE	UNIT	TYPE	AUTH	SKIN*
WATER.....	NONE	NONE	NONE	NONE	
SILICA.....	3	MG/M3	TWA	CMRG	
		AS RESPIRABLE DUST			
ACRYLIC POLYMERS.....	NONE	NONE	NONE	NONE	
ORGANIC RED PIGMENT (N.J.Trade Secret Registry# 04499600-6250P, 04499600-6247P.....	NONE	NONE	NONE	NONE	
AMMONIUM HYDROXIDE.....	35	PPM	STEL	CMRG	
		AS AMMONIA			
AMMONIUM HYDROXIDE.....	25	PPM	TWA	CMRG	
		AS AMMONIA			
DIIODOMETHYL P-TOLYL SULFONE.....	NONE	NONE	NONE	NONE	
AMMONIUM NITRATE.....	NONE	NONE	NONE	NONE	
FORMALDEHYDE.....	0.3	PPM	CEIL	ACGIH	

Abbreviations: N/D - Not Determined N/A - Not Applicable CA - Approximately

EXPOSURE LIMITS (continued)

INGREDIENT	VALUE	UNIT	TYPE	AUTH	SKIN*
					SENSITIZER
FORMALDEHYDE.....	0.75	PPM	TWA	OSHA	
			OSHA STANDARD 1910.1048		
FORMALDEHYDE.....	0.5	PPM	TWA	OSHA	
			OSHA ACTION LEVEL		

* SKIN NOTATION: Listed substances indicated with 'Y' under SKIN refer to the potential contribution to the overall exposure by the cutaneous route including mucous membrane and eye, either by airborne or, more particularly, by direct contact with the substance. Vehicles can alter skin absorption.

SOURCE OF EXPOSURE LIMIT DATA:

- ACGIH: American Conference of Governmental Industrial Hygienists
- CMRG: Chemical Manufacturer Recommended Exposure Guidelines
- OSHA: Occupational Safety and Health Administration

- NONE: None Established

8. HEALTH HAZARD DATA

EYE CONTACT:

Mild Eye Irritation: signs/symptoms can include redness, swelling, pain, and tearing.

SKIN CONTACT:

Mild Skin Irritation: signs/symptoms can include redness, swelling, and itching.

INHALATION:

Health effects from inhalation are not expected unless product is heated.

IF SWALLOWED:

Ingestion is not a likely route of exposure to this product.

Irritation of Gastrointestinal Tissues: signs/symptoms can include pain, vomiting, abdominal tenderness, nausea, blood in vomitus, and blood in feces.

CANCER:

WARNING: Contains a chemical which can cause cancer. (50-00-0) (NTP anticipated human carcinogen, IARC probable human carcinogen 2A, OSHA listed carcinogen, Calif. Proposition 65)

Abbreviations: N/D - Not Determined N/A - Not Applicable CA - Approximately

SECTION CHANGE DATES

PRECAUTIONARY INFO. SECTION CHANGED SINCE October 20, 2000 ISSUE

Abbreviations: N/D - Not Determined N/A - Not Applicable CA - Approximately

The information in this Material Safety Data Sheet (MSDS) is believed to be correct as of the date issued. 3M MAKES NO WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE OR COURSE OF PERFORMANCE OR USAGE OF TRADE. User is responsible for determining whether the 3M product is fit for a particular purpose and suitable for user's method of use or application. Given the variety of factors that can affect the use and application of a 3M product, some of which are uniquely within the user's knowledge and control, it is essential that the user evaluate the 3M product to determine whether it is fit for a particular purpose and suitable for user's method of use or application.

3M provides information in electronic form as a service to its customers. Due to the remote possibility that electronic transfer may have resulted in errors, omissions or alterations in this information, 3M makes no representations as to its completeness or accuracy. In addition, information obtained from a database may not be as current as the information in the MSDS available directly from 3M.