



Material Safety Data Sheet

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SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: 3M(TM) Fritted Glass Primer P590, Black

MANUFACTURER: 3M

DIVISION: Industrial Adhesives and Tapes Division

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

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

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Product Use:

Intended Use: Primer

SECTION 2: INGREDIENTS

| <u>Ingredient</u> | <u>C.A.S. No.</u> | <u>% by Wt</u> |
|--|-------------------|----------------|
| Methyl Ethyl Ketone | 78-93-3 | 45 - 60 |
| n-Butyl Acetate | 123-86-4 | 10 - 25 |
| Aromatic-Aliphatic Polyisocyanate | 63368-95-6 | 5 - 15 |
| Aliphatic Polyisocyanate | 28182-81-2 | 1 - 10 |
| Polymethylene Polyphenylene Isocyanate | 9016-87-9 | 1 - 10 |
| Carbon Black | 1333-86-4 | 1 - 10 |
| 1-Methoxy-2-Propyl Acetate | 108-65-6 | 1 - 5 |
| Methylenediphenyl Diisocyanate (Isomers) | 26447-40-5 | 1 - 5 |
| 3-(Trimethoxysilyl)Propyl Glycidyl Ether | 2530-83-8 | 1 - 5 |
| Polyurethane resin (without isocyanates) | Trade Secret | 1 - 5 |
| 3-(Trimethoxysilyl)Propanethiol | 4420-74-0 | 1 - 5 |
| p-Toluenesulfonamide | 70-55-3 | < 1 |
| Dibutyltin Dichloride | 683-18-1 | < 0.1 |

SECTION 3: HAZARDS IDENTIFICATION

3.1 EMERGENCY OVERVIEW

Odor, Color, Grade: Black, ketone like odor

General Physical Form: Liquid

Immediate health, physical, and environmental hazards: Closed containers exposed to heat from fire may build pressure and explode. Extremely flammable liquid and vapor. Vapors may travel long distances along the ground or floor to an ignition source and flash back. May cause allergic skin reaction. May cause allergic respiratory reaction. Contains a chemical or chemicals which can cause cancer. May cause target organ effects. Contains a chemical or chemicals which can cause birth defects or other reproductive harm.

3.2 POTENTIAL HEALTH EFFECTS

Eye Contact:

Moderate Eye Irritation: Signs/symptoms may include redness, swelling, pain, tearing, and blurred or hazy vision.

Vapors released during curing may cause eye irritation. Signs/symptoms may include redness, swelling, pain, tearing, and blurred or hazy 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:

Allergic Respiratory Reaction: Signs/symptoms may include difficulty breathing, wheezing, cough, and tightness of chest.

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

Prolonged or repeated exposure may cause:

Respiratory Effects: Signs/symptoms may include cough, shortness of breath, chest tightness, wheezing, increased heart rate, bluish colored skin (cyanosis), sputum production, changes in lung function tests, and/or respiratory failure.

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.

Persons previously sensitized to isocyanates may develop a cross-sensitization reaction to other isocyanates.

Contains a chemical or chemicals which can cause birth defects or other reproductive harm.

Contains a chemical or chemicals which can cause cancer.

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: 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. 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 | > 200 °C |
| Flash Point | -8 °C [<i>Test Method:</i> Closed Cup] |
| Flammable Limits(LEL) | 1.8 % |
| Flammable Limits(UEL) | 11.5 % |

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: Water may not effectively extinguish fire; however, it should be used to keep fire-exposed containers and surfaces cool and prevent explosive rupture. Wear full protective equipment (Bunker Gear) and a self-contained breathing apparatus (SCBA).

Unusual Fire and Explosion Hazards: Closed containers exposed to heat from fire may build pressure and explode. Extremely flammable liquid and vapor. Vapors may travel long distances along the ground or floor to an ignition source and flash back.

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

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures

Evacuate unprotected and untrained personnel from hazard area. The spill should be cleaned up by qualified personnel. Remove all ignition sources such as flames, smoking materials, and electrical spark sources. Use only non-sparking tools. 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. Avoid contact with water. Remember, adding an absorbent material does not remove a toxic, corrosivity or flammability hazard. Extinguish all ignition sources and ventilate area. Follow the MSDS recommendations for the cleanup solvent. Cover, but do not seal for 48 hours.

6.2. Environmental precautions

Place in a container approved for transportation by appropriate authorities, but do not seal the container for 48 hours to avoid pressure build-up. For larger spills, cover drains and build dikes to prevent entry into sewer systems or bodies of water. Collect the resulting residue containing solution. Place in a metal container approved for transportation by appropriate authorities. Dispose of collected material as soon as possible.

Clean-up methods

Pour isocyanate decontaminant solution (90% water, 8% concentrated ammonia, 2% detergent) on spill and allow to react for 10 minutes. Or pour water on spill and allow to react for more than 30 minutes. Cover with absorbent material. Refer to other sections of this MSDS for information regarding physical and health hazards, respiratory protection, ventilation, and personal protective equipment. Contain spill. Cover spill area with a fire-extinguishing foam designed for use on solvents, such as alcohols and acetone,

that can dissolve in water. An AR - AFFF type foam is recommended. 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 using non-sparking tools. Clean up residue with an appropriate solvent such as Methyl Ethyl Ketone.

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

Avoid contact with water to prevent potentially violent reaction or fire. Do not eat, drink or smoke when using this product. Wash exposed areas thoroughly with soap and water. Keep away from heat, sparks, open flame, pilot lights and other sources of ignition. Ground containers securely when transferring contents. Wear low static or properly grounded shoes. No smoking while handling this material. Avoid breathing of vapors, mists or spray. Avoid static discharge. For industrial or professional use only. Do not breathe vapors. Avoid contact with oxidizing agents. Avoid eye contact. Avoid skin contact. Keep out of the reach of children.

7.2 STORAGE

Store away from acids. Store away from heat. Store out of direct sunlight. Keep container tightly closed. Store away from areas where product may come into contact with food or pharmaceuticals. Store away from oxidizing agents.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 ENGINEERING CONTROLS

Use with appropriate local exhaust ventilation. Provide local exhaust ventilation at transfer points. Use in an enclosed process area is recommended. Do not use in a confined area or areas with little or no air movement. Use general dilution ventilation and/or local exhaust ventilation to control airborne exposures to below Occupational Exposure Limits and/or control mist, vapor, or spray. 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: Indirect Vented Goggles

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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

Polyvinyl Alcohol (PVA)

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8.2.3 Respiratory Protection

Avoid breathing of vapors, mists or spray. Do not breathe vapors.

An exposure assessment may be needed to decide if a respirator is required. If a respirator is needed, use respirators as part of a full respiratory protection program. Based on the results of the exposure assessment, select from the following respirator type(s) to reduce inhalation exposure:

Half facepiece or full facepiece air-purifying respirator suitable for organic vapors

For questions about suitability for a specific application, consult with your respirator manufacturer.

8.2.4 Prevention of Swallowing

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

8.3 EXPOSURE GUIDELINES

| <u>Ingredient</u> | <u>Authority</u> | <u>Type</u> | <u>Limit</u> | <u>Additional Information</u> |
|--|-------------------------|-------------|--------------|-------------------------------|
| 1-Methoxy-2-Propyl Acetate | AIHA | TWA | 50 ppm | |
| 1-Methoxy-2-Propyl Acetate | CMRG | TWA | 10 mg/m3 | |
| 1-Methoxy-2-Propyl Acetate | CMRG | STEL | 90 ppm | |
| 3-(Trimethoxysilyl)Propyl Glycidyl Ether | CMRG | TWA | 5 ppm | |
| FREE ISOCYANATES | Manufacturer determined | TWA | 0.005 ppm | |
| FREE ISOCYANATES | Manufacturer determined | STEL | 0.02 ppm | |
| Aliphatic Polyisocyanate | CMRG | TWA | 0.5 mg/m3 | |
| Aliphatic Polyisocyanate | CMRG | STEL | 1 mg/m3 | |
| Methyl Ethyl Ketone | ACGIH | TWA | 200 ppm | |
| Methyl Ethyl Ketone | ACGIH | STEL | 300 ppm | |
| Methyl Ethyl Ketone | OSHA | TWA | 590 mg/m3 | |
| n-Butyl Acetate | ACGIH | TWA | 150 ppm | |
| n-Butyl Acetate | ACGIH | STEL | 200 ppm | |
| n-Butyl Acetate | OSHA | TWA | 710 mg/m3 | |
| TIN, ORGANIC COMPOUNDS | ACGIH | TWA, as Sn | 0.1 mg/m3 | Skin Notation* |
| TIN, ORGANIC COMPOUNDS | ACGIH | STEL, as Sn | 0.2 mg/m3 | Skin Notation* |
| TIN, ORGANIC COMPOUNDS | OSHA | TWA, as Sn | 0.1 mg/m3 | |

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: | Black, ketone like odor |
| General Physical Form: | Liquid |
| Autoignition temperature | > 200 °C |
| Flash Point | -8 °C [Test Method: Closed Cup] |
| Flammable Limits(LEL) | 1.8 % |
| Flammable Limits(UEL) | 11.5 % |
| Boiling Point | 79 °C |
| Density | 0.9 g/ml |
| Vapor Density | 2.9 [Ref Std: AIR=1] |
| Vapor Pressure | No Data Available |
| pH | Not Applicable |
| Melting point | Not Applicable |
| Solubility in Water | Moderate |
| Evaporation rate | No Data Available |

| | |
|---|--|
| Hazardous Air Pollutants | < 0.1 % weight [<i>Test Method:</i> Calculated] |
| Kow - Oct/Water partition coef | <i>No Data Available</i> |
| VOC Less H2O & Exempt Solvents | 660 g/l [<i>Test Method:</i> calculated SCAQMD rule 443.1] |
| VOC Less H2O & Exempt Solvents | 74 % [<i>Test Method:</i> calculated per CARB title 2] |
| VOC Less H2O & Exempt Solvents | 5.5 lb/gal [<i>Test Method:</i> calculated SCAQMD rule 443.1] |
| Viscosity | 20 centipoise |
| Solids Content | > 20 % |

SECTION 10: STABILITY AND REACTIVITY

Stability: Stable.

Materials and Conditions to Avoid:

10.1 Conditions to avoid

Sparks and/or flames
Heat

10.2 Materials to avoid

Alcohols
Amines
Strong acids
Strong bases
Strong oxidizing agents
Water

Hazardous Polymerization: Hazardous polymerization will not occur.

Hazardous Decomposition or By-Products

| <u>Substance</u> | <u>Condition</u> |
|--------------------------|-------------------|
| Carbon monoxide | During Combustion |
| Carbon dioxide | During Combustion |
| Hydrogen Chloride | During Combustion |
| Hydrogen Cyanide | During Combustion |
| Irritant Vapors or Gases | During Combustion |
| Oxides of Nitrogen | During Combustion |
| Oxides of Sulfur | During Combustion |

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 a permitted hazardous waste incinerator. As a disposal alternative, dispose of waste product in a permitted hazardous waste facility.

EPA Hazardous Waste Number (RCRA): D001 (Ignitable), D035 (Methyl ethyl ketone)

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

SECTION 14: TRANSPORT INFORMATION

ID Number(s):

62-5270-0250-5, 62-5270-0255-4

For Transport Information, please visit <http://3M.com/Transportinfo> or call 1-800-364-3577 or 651-737-6501.

SECTION 15: REGULATORY INFORMATION

US FEDERAL REGULATIONS

Contact manufacturer for more information

311/312 Hazard Categories:

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

Section 313 Toxic Chemicals subject to the reporting requirements of that section and 40 CFR part 372 (EPCRA):

| <u>Ingredient</u> | <u>C.A.S. No</u> | <u>% by Wt</u> |
|--|------------------|----------------|
| Polymethylene Polyphenylene Isocyanate | 9016-87-9 | 1 - 10 |

STATE REGULATIONS

Contact manufacturer for more information

CHEMICAL INVENTORIES

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. Contact manufacturer for more information

INTERNATIONAL REGULATIONS

Contact manufacturer 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: 3 Reactivity: 1 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 3: Potential effects from skin contact information was modified.
Section 3: Potential effects from inhalation information was modified.
Section 7: Handling information was modified.
Section 7: Storage information was modified.
Section 8: Prevention of swallowing information was modified.
Section 15: International regulations information was modified.
Section 15: State regulations information was modified.
Section 15: US federal regulations information was modified.
Section 3: Immediate other hazard(s) was modified.
Section 15: Inventories information was modified.
Section 9: Property description for optional properties was modified.
Section 2: Ingredient table was modified.
Section 6: Methods for cleaning up information was modified.
Copyright was modified.
Section 3: Carcinogenicity phrase was added.
Section 9: Property description for required properties was added.
Section 15: EPCRA 313 information was added.
Section 15: EPCRA 313 text was added.
Section 9: Specific gravity information was deleted.

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