



## Material Safety Data Sheet

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### SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

**PRODUCT NAME:** 3M(TM) Lead Foil Tape 421  
**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)

**Issue Date:** 01/30/2009  
**Supersedes Date:** 12/09/2005

**Document Group:** 11-3096-2

#### Product Use:

**General Use:** 421 lead foil tape is used as a maskant in electroplating applications as well as a moisture and radiation barrier in other applications.  
**Intended Use:** Industrial use

### SECTION 2: INGREDIENTS

<u>Ingredient</u>	<u>C.A.S. No.</u>	<u>% by Wt</u>
Lead Foil Backing	7439-92-1	90 - 99
Natural Rubber	9003-31-0	1 - 5
Rosin	8050-09-7	0.5 - 1.5

### SECTION 3: HAZARDS IDENTIFICATION

#### 3.1 EMERGENCY OVERVIEW

**Specific Physical Form:** Roll of Tape

**Odor, Color, Grade:** silver color, slight smoke rubber odor

**General Physical Form:** Solid

**Immediate health, physical, and environmental hazards:** May cause allergic skin 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:**

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

**Skin Contact:**

Prolonged or repeated exposure may cause:

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

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

**Inhalation:**

No health effects are expected.

**Ingestion:**

May be harmful if swallowed.

Physical Blockage: Signs/symptoms may include cramping, abdominal pain, and constipation.

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:**

May accumulate in the body.

Prolonged or repeated exposure may cause:

Ocular Effects: Signs/symptoms may include blurred or significantly impaired vision.

Hard Tissue Effects: Signs/symptoms may include color changes in the teeth and nails; changes in development of bone, teeth or nails; weakening of the bones; and/or hair loss.

Hematopoietic Effects: Signs/symptoms may include generalized weakness, fatigue and alterations in numbers of circulating blood cells.

Central Neuropathy: Signs/symptoms may include irritability, memory impairment, personality changes, sleep disorders, and decreased ability to concentrate.

Peripheral Neuropathy: Signs/symptoms may include tingling or numbness of the extremities, incoordination, weakness of the hands and feet, tremors and muscle atrophy.

Neurological Effects: Signs/symptoms may include personality changes, lack of coordination, sensory loss, tingling or numbness of the extremities, weakness, tremors, and/or changes in blood pressure and heart rate.

Kidney/Bladder Effects: Signs/symptoms may include changes in urine production, abdominal or lower back pain, increased protein in urine, increased blood urea nitrogen (BUN), blood in urine, and painful urination.

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

**Carcinogenicity:**

Contains a chemical or chemicals which can cause cancer.

<u>Ingredient</u>	<u>C.A.S. No.</u>	<u>Class Description</u>	<u>Regulation</u>
Lead Foil Backing	7439-92-1	Group 2B	International Agency for Research on Cancer
LEAD COMPOUNDS	NONE	Anticipated human carcinogen	National Toxicology Program Carcinogens

**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:** No need for first aid is anticipated.

**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**

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

**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:** No unusual fire or explosion hazards are anticipated.

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

**SECTION 6: ACCIDENTAL RELEASE MEASURES**

**Accidental Release Measures:** Refer to other sections of this MSDS for information regarding physical and health hazards,

respiratory protection, ventilation, and personal protective equipment. 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. Reclaim undamaged product. 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**

Avoid eye contact. Do not eat, drink or smoke when using this product. Wash exposed areas thoroughly with soap and water. Avoid skin contact. Do not ingest. Keep out of the reach of children. For industrial or professional use only. Avoid contact with oxidizing agents.

**7.2 STORAGE**

Store under normal warehouse conditions. Store away from oxidizing agents.

**SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION**

**8.1 ENGINEERING CONTROLS**

Not applicable. General ventilation adequate below 400 C. Local exhaust recommended above 400 C.

**8.2 PERSONAL PROTECTIVE EQUIPMENT (PPE)**

**8.2.1 Eye/Face Protection**

Avoid eye contact.

**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.

**8.2.3 Respiratory Protection**

Under normal use conditions, airborne exposures are not expected to be significant enough to require respiratory protection.

**8.2.4 Prevention of Swallowing**

Do not eat, drink or smoke when using this product. Wash exposed areas thoroughly with soap and water. Do not ingest. Wash hands after handling and before eating.

**8.3 EXPOSURE GUIDELINES**

<u>Ingredient</u>	<u>Authority</u>	<u>Type</u>	<u>Limit</u>	<u>Additional Information</u>
Lead Foil Backing	ACGIH	TWA	0.05 mg/m3	Table A3
Rosin	ACGIH	TWA	Reduce exposure to as low as possible	Sensitizer, see limit column

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**

<b>Specific Physical Form:</b>	Roll of Tape
<b>Odor, Color, Grade:</b>	silver color, slight smoke rubber odor
<b>General Physical Form:</b>	Solid
<b>Flash Point</b>	<i>Not Applicable</i>
<b>Flammable Limits - LEL</b>	<i>Not Applicable</i>
<b>Flammable Limits - UEL</b>	<i>Not Applicable</i>
<b>Density</b>	11.2 g/cm <sup>3</sup>
<b>Vapor Density</b>	<i>Not Applicable</i>
<b>Vapor Pressure</b>	<i>Not Applicable</i>
<b>Specific Gravity</b>	11.2 g/cm <sup>3</sup> [@ 23 °C]
<b>pH</b>	<i>Not Applicable</i>
<b>Melting point</b>	<i>No Data Available</i>
<b>Solubility In Water</b>	<i>Not Applicable</i>
<b>Evaporation rate</b>	<i>Not Applicable</i>
<b>Volatile Organic Compounds</b>	<i>Not Applicable</i>
<b>Percent volatile</b>	<i>Not Applicable</i>
<b>VOC Less H<sub>2</sub>O &amp; Exempt Solvents</b>	<i>No Data Available</i>
<b>Viscosity</b>	<i>Not Applicable</i>

**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	During Combustion
Carbon dioxide	During Combustion
Oxides of Lead	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:** Dispose of waste product in a permitted hazardous waste facility.

**EPA Hazardous Waste Number (RCRA):** D008 (Lead)

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

## SECTION 14: TRANSPORT INFORMATION

### ID Number(s):

XT-0007-5853-9, 70-0000-0368-4, 70-0000-8018-7, 70-0024-2907-7, 70-0060-3122-6, 70-0060-3123-4, 70-0060-3124-2, 70-0060-3125-9, 70-0060-3126-7, 70-0060-3128-3, 70-0061-4796-4, 70-0061-4797-2, 70-0061-4798-0, 70-0061-4799-8, 70-0061-4800-4, 70-0061-4801-2, 70-0061-4802-0, 70-0062-7629-2, 70-0062-7637-5, 70-0063-4633-5, 70-0063-4636-8, 70-0063-4638-4, 70-0063-4649-1, 70-0063-4658-2, 70-0063-7229-9, 70-0063-7314-9, 70-0063-7487-3, 70-0063-7531-8, 70-0063-7641-5, 70-0063-7801-5, 70-0063-7925-2, 70-0063-8134-0, 70-0063-8135-7, 70-0063-8165-4, 70-0063-8237-1, 70-0063-8391-6, 70-0063-8563-0, 70-0063-8619-0, 70-0063-8620-8, 70-0063-8669-5, 70-0160-2171-2, 70-0160-5047-1, 70-0161-1075-4, XT-0007-0048-1, XT-0007-3130-4, XT-0007-3281-5, XT-0007-3282-3

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 - 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>
Lead Foil Backing	7439-92-1	90 - 99
Lead Foil Backing (LEAD COMPOUNDS)	7439-92-1	90 - 99

**STATE REGULATIONS**

Contact 3M for more information.

**CALIFORNIA PROPOSITION 65**

<u>Ingredient</u>	<u>C.A.S. No.</u>	<u>Classification</u>
Lead Foil Backing	7439-92-1	*Female reproductive toxin
Lead Foil Backing	7439-92-1	*Male reproductive toxin
Lead Foil Backing	7439-92-1	**Carcinogen
Lead Foil Backing	7439-92-1	*Developmental Toxin

\* WARNING: contains a chemical or chemicals which can cause birth defects or other reproductive harm.

\*\* WARNING: contains a chemical which can cause cancer.

**CHEMICAL INVENTORIES**

This product is an article as defined by TSCA regulations, and is exempt from TSCA Inventory listing requirements.

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: 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.

**Reason for Reissue:** The MSDS has been revised because 3M has adopted the 16-section ANSI/ISO format. The potential hazards of the product have not changed. We encourage you to reread the MSDS and review the information.

Revision Changes:

Section 1: Product name was modified.  
Section 1: Product use information was modified.  
Section 1: Division name was modified.  
Copyright was modified.  
Section 3: Potential effects from skin contact information was modified.  
Section 3: Potential effects from ingestion information was modified.  
Section 5: Unusual fire and explosion hazard information was modified.  
Section 6: Release measures information was modified.  
Section 7: Handling information was modified.  
Section 8: Prevention of swallowing information was modified.  
Section 10: Hazardous decomposition or by-products table was modified.  
Section 13: Waste disposal method information was modified.  
Page Heading: Product name was modified.  
Section 15: Inventories information was modified.  
Section 13: EPA hazardous waste number (RCRA) heading was added.  
Section 13: EPA hazardous waste number (RCRA) information was added.  
Section 14: ID Number Heading Template 1 was added.  
Section 14: ID Number(s) Template 1 was added.  
Section 2: Ingredient table was added.  
Section 15: EPCRA 313 information was added.  
Section 15: EPCRA 313 text was added.  
Section 8: Exposure guidelines ingredient information was added.  
Section 8: Exposure guidelines data source legend was added.  
Section 3: Carcinogenicity table was added.  
Section 3: Carcinogenicity heading was added.  
Section 15: California proposition 65 ingredient information was added.  
Section 15: California proposition 65 heading was added.  
Section 15: California proposition 65 cancer warning was added.  
Section 15: WHMIS regulations comment was deleted.  
Section 15: WHMIS regulations comment heading was deleted.

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