



## Safety Data Sheet

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### SECTION 1: Identification

#### 1.1. Product identifier

3M™ Thermal Bonding Film 583

#### Product Identification Numbers

44-0004-1780-6, 44-0011-1555-7, 44-0011-1557-3, 44-0011-1558-1, 44-0011-1559-9, 44-0011-1560-7, 44-0011-1561-5, 44-0011-1562-3, 44-0011-1565-6, 44-0011-1566-4, 44-0011-1567-2, 44-0011-1568-0, 44-0011-1573-0, 44-0011-1582-1, 44-0012-0337-9, 70-0000-0535-8, 70-0025-1111-4, 70-0025-1113-0, 70-0025-1124-7, 70-0025-1135-3, 70-0025-1156-9, 70-0060-0418-1, 70-0060-0721-8, 70-0060-2627-5, 70-0060-4361-9, 70-0060-4362-7, 70-0060-4363-5, 70-0062-6963-6, 70-0062-6964-4, 70-0062-6966-9, 70-0160-0205-0, GT-3000-6252-5

#### 1.2. Recommended use and restrictions on use

##### Recommended use

Bonding

#### 1.3. Supplier's details

<b>MANUFACTURER:</b>	3M
<b>DIVISION:</b>	Electronics Materials Solutions Division
<b>ADDRESS:</b>	3M Center, St. Paul, MN 55144-1000, USA
<b>Telephone:</b>	1-888-3M HELPS (1-888-364-3577)

#### 1.4. Emergency telephone number

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

### SECTION 2: Hazard identification

#### 2.1. Hazard classification

Serious Eye Damage/Irritation: Category 2A.

Reproductive Toxicity: Category 2.

#### 2.2. Label elements

##### Signal word

Warning

##### Symbols

Exclamation mark | Health Hazard |

##### Pictograms

**Hazard Statements**

Causes serious eye irritation.

Suspected of damaging fertility or the unborn child.

**Precautionary Statements****Prevention:**

Obtain special instructions before use.

Do not handle until all safety precautions have been read and understood.

Wear protective gloves and eye/face protection.

Wash thoroughly after handling.

**Response:**

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

If eye irritation persists: Get medical advice/attention.

IF exposed or concerned: Get medical advice/attention.

**Storage:**

Store locked up.

**Disposal:**

Dispose of contents/container in accordance with applicable local/regional/national/international regulations.

**2.3. Hazards not otherwise classified**

None.

## SECTION 3: Composition/information on ingredients

Ingredient	C.A.S. No.	% by Wt
release-treated paper	None	60 - 100
acrylonitrile-butadiene polymer	9003-18-3	10 - 30
glycerol esters of rosin acids	8050-31-5	7 - 13
phenol-formaldehyde polymer	25085-50-1	7 - 13
salicylic acid	69-72-7	0.5 - 1.5 Trade Secret *
zinc oxide	1314-13-2	0.5 - 1.5
p-tert-butylphenol	98-54-4	0 - 1

\*The specific chemical identity and/or exact percentage (concentration) of this composition has been withheld as a trade secret.

## SECTION 4: First aid measures

**4.1. Description of first aid measures****Inhalation:**

Remove person to fresh air. If you are concerned, get medical advice.

**Skin Contact:**

Wash with soap and water. If you are concerned, get medical advice.

**Eye Contact:**

Immediately flush with large amounts of water. Remove contact lenses if easy to do. Continue rinsing. Get medical attention.

**If Swallowed:**

Rinse mouth. If you feel unwell, get medical attention.

**4.2. Most important symptoms and effects, both acute and delayed**

See Section 11.1. Information on toxicological effects.

**4.3. Indication of any immediate medical attention and special treatment required**

Not applicable

## SECTION 5: Fire-fighting measures

**5.1. Suitable extinguishing media**

In case of fire: Use a fire fighting agent suitable for ordinary combustible material such as water or foam to extinguish.

**5.2. Special hazards arising from the substance or mixture**

None inherent in this product.

**5.3. Special protective actions for fire-fighters**

No special protective actions for fire-fighters are anticipated.

## SECTION 6: Accidental release measures

**6.1. Personal precautions, protective equipment and emergency procedures**

Evacuate area. Ventilate the area with fresh air. Refer to other sections of this SDS for information regarding physical and health hazards, respiratory protection, ventilation, and personal protective equipment.

**6.2. Environmental precautions**

Avoid release to the environment.

**6.3. Methods and material for containment and cleaning up**

Collect as much of the spilled material as possible. Place in a closed container approved for transportation by appropriate authorities. Clean up residue. Seal the container. Dispose of collected material as soon as possible.

## SECTION 7: Handling and storage

**7.1. Precautions for safe handling**

Avoid skin contact with hot material. Avoid breathing of dust created by cutting, sanding, grinding or machining. For industrial or professional use only. Do not handle until all safety precautions have been read and understood. Avoid breathing dust/fume/gas/mist/vapors/spray. Do not get in eyes, on skin, or on clothing. Do not eat, drink or smoke when using this product. Wash thoroughly after handling. Use personal protective equipment (gloves, respirators, etc.) as required.

**7.2. Conditions for safe storage including any incompatibilities**

Store away from heat.

## SECTION 8: Exposure controls/personal protection

## 8.1. Control parameters

### Occupational exposure limits

If a component is disclosed in section 3 but does not appear in the table below, an occupational exposure limit is not available for the component.

Ingredient	C.A.S. No.	Agency	Limit type	Additional Comments
zinc oxide	1314-13-2	ACGIH	TWA(respirable fraction):2 mg/m <sup>3</sup> ;STEL(respirable fraction):10 mg/m <sup>3</sup>	
zinc oxide	1314-13-2	OSHA	TWA(as fume):5 mg/m <sup>3</sup> ;TWA(as total dust):15 mg/m <sup>3</sup> ;TWA(respirable fraction):5 mg/m <sup>3</sup>	

ACGIH : American Conference of Governmental Industrial Hygienists

AIHA : American Industrial Hygiene Association

CMRG : Chemical Manufacturer's Recommended Guidelines

OSHA : United States Department of Labor - Occupational Safety and Health Administration

TWA: Time-Weighted-Average

STEL: Short Term Exposure Limit

CEIL: Ceiling

## 8.2. Exposure controls

### 8.2.1. Engineering controls

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

### 8.2.2. Personal protective equipment (PPE)

#### Eye/face protection

Select and use eye/face protection to prevent contact based on the results of an exposure assessment. The following eye/face protection(s) are recommended:

Indirect Vented Goggles

#### Skin/hand protection

Select and use gloves and/or protective clothing approved to relevant local standards to prevent skin contact based on the results of an exposure assessment. Selection should be based on use factors such as exposure levels, concentration of the substance or mixture, frequency and duration, physical challenges such as temperature extremes, and other use conditions. Consult with your glove and/or protective clothing manufacturer for selection of appropriate compatible gloves/protective clothing.

Gloves made from the following material(s) are recommended: Butyl Rubber  
Fluoroelastomer

#### Respiratory protection

None required.

#### Thermal hazards

Wear heat insulating gloves when handling hot material to prevent thermal burns.

## SECTION 9: Physical and chemical properties

### 9.1. Information on basic physical and chemical properties

General Physical Form:	Solid
Specific Physical Form:	Film
Odor, Color, Grade:	non-tacky, slight phenolic odor.
Odor threshold	Not Applicable

pH	<i>Not Applicable</i>
Melting point	<i>No Data Available</i>
Boiling Point	<i>Not Applicable</i>
Flash Point	<i>&gt;=200 °F [Test Method: Closed Cup]</i>
Evaporation rate	<i>Not Applicable</i>
Flammability (solid, gas)	<i>Not Classified</i>
Flammable Limits(LEL)	<i>Not Applicable</i>
Flammable Limits(UEL)	<i>Not Applicable</i>
Vapor Pressure	<i>Not Applicable</i>
Vapor Density	<i>Not Applicable</i>
Specific Gravity	<i>1.06 [Ref Std: WATER=1]</i>
Solubility in Water	<i>Nil</i>
Solubility- non-water	<i>Not Applicable</i>
Partition coefficient: n-octanol/ water	<i>No Data Available</i>
Autoignition temperature	<i>No Data Available</i>
Decomposition temperature	<i>Not Applicable</i>
Viscosity	<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>

## SECTION 10: Stability and reactivity

### 10.1. Reactivity

This material may be reactive with certain agents under certain conditions - see the remaining headings in this section.

### 10.2. Chemical stability

Stable.

### 10.3. Possibility of hazardous reactions

Hazardous polymerization will not occur.

### 10.4. Conditions to avoid

Heat

### 10.5. Incompatible materials

None known.

### 10.6. Hazardous decomposition products

<u>Substance</u>	<u>Condition</u>
Hydrocarbons	Not Specified
Carbon monoxide	Not Specified
Carbon dioxide	Not Specified
Oxides of Nitrogen	Not Specified
Oxides of Zinc	Not Specified

## SECTION 11: Toxicological information

The information below may not be consistent with the material classification in Section 2 if specific ingredient classifications are mandated by a competent authority. In addition, toxicological data on ingredients may not be reflected in the material classification and/or the signs and symptoms of exposure, because an ingredient may be present below the threshold for labeling, an ingredient may not be available for exposure, or the data may not be relevant to the material as a whole.

### 11.1. Information on Toxicological effects

#### Signs and Symptoms of Exposure

Based on test data and/or information on the components, this material may produce the following health effects:

##### Inhalation:

No health effects are expected.

##### Skin Contact:

Contact with the skin during product use is not expected to result in significant irritation.

##### Eye Contact:

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

##### Ingestion:

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

#### Additional Health Effects:

#### Reproductive/Developmental Toxicity:

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

#### Toxicological Data

If a component is disclosed in section 3 but does not appear in a table below, either no data are available for that endpoint or the data are not sufficient for classification.

#### Acute Toxicity

Name	Route	Species	Value
Overall product	Ingestion		No data available; calculated ATE > 5,000 mg/kg
acrylonitrile-butadiene polymer	Dermal	Rabbit	LD50 > 15,000 mg/kg
acrylonitrile-butadiene polymer	Ingestion	Rat	LD50 > 30,000 mg/kg
glycerol esters of rosin acids	Dermal	Rabbit	LD50 > 5,000 mg/kg
glycerol esters of rosin acids	Ingestion	Rat	LD50 > 2,000 mg/kg
phenol-formaldehyde polymer	Ingestion	Rat	LD50 5,660 mg/kg
zinc oxide	Dermal		LD50 estimated to be > 5,000 mg/kg
zinc oxide	Inhalation-Dust/Mist (4 hours)	Rat	LC50 > 5.7 mg/l
zinc oxide	Ingestion	Rat	LD50 > 5,000 mg/kg
salicylic acid	Dermal	Rat	LD50 > 2,000 mg/kg
salicylic acid	Ingestion	Rat	LD50 891 mg/kg
p-tert-butylphenol	Dermal	Rabbit	LD50 2,318 mg/kg
p-tert-butylphenol	Inhalation-Dust/Mist (4 hours)	Rat	LC50 > 5.6 mg/l
p-tert-butylphenol	Ingestion	Rat	LD50 4,000 mg/kg

ATE = acute toxicity estimate

#### Skin Corrosion/Irritation

Name	Species	Value
acrylonitrile-butadiene polymer	Professional judgment	No significant irritation
glycerol esters of rosin acids	Rabbit	Minimal irritation
zinc oxide	Human	No significant irritation

	and animal	
salicylic acid	Rabbit	No significant irritation
p-tert-butylphenol	Rabbit	Irritant

**Serious Eye Damage/Irritation**

Name	Species	Value
acrylonitrile-butadiene polymer	Professional judgement	No significant irritation
glycerol esters of rosin acids	Rabbit	Mild irritant
zinc oxide	Rabbit	Mild irritant
salicylic acid	Rabbit	Corrosive
p-tert-butylphenol	Rabbit	Corrosive

**Skin Sensitization**

Name	Species	Value
glycerol esters of rosin acids	Guinea pig	Not sensitizing
phenol-formaldehyde polymer	Human	Some positive data exist, but the data are not sufficient for classification
zinc oxide	Guinea pig	Some positive data exist, but the data are not sufficient for classification
salicylic acid	Mouse	Not sensitizing
p-tert-butylphenol	Human and animal	Some positive data exist, but the data are not sufficient for classification

**Photosensitization**

Name	Species	Value
salicylic acid	Mouse	Not sensitizing

**Respiratory Sensitization**

For the component/components, either no data are currently available or the data are not sufficient for classification.

**Germ Cell Mutagenicity**

Name	Route	Value
glycerol esters of rosin acids	In Vitro	Not mutagenic
zinc oxide	In Vitro	Some positive data exist, but the data are not sufficient for classification
zinc oxide	In vivo	Some positive data exist, but the data are not sufficient for classification
salicylic acid	In Vitro	Not mutagenic
salicylic acid	In vivo	Not mutagenic
p-tert-butylphenol	In Vitro	Not mutagenic

**Carcinogenicity**

Name	Route	Species	Value
p-tert-butylphenol	Ingestion	Multiple animal species	Some positive data exist, but the data are not sufficient for classification

**Reproductive Toxicity****Reproductive and/or Developmental Effects**

Name	Route	Value	Species	Test Result	Exposure Duration
glycerol esters of rosin acids	Ingestion	Not toxic to female reproduction	Rat	NOAEL 5,000	90 days

				mg/kg/day	
glycerol esters of rosin acids	Ingestion	Not toxic to male reproduction	Rat	NOAEL 5,000 mg/kg/day	90 days
zinc oxide	Ingestion	Some positive reproductive/developmental data exist, but the data are not sufficient for classification	Multiple animal species	NOAEL 125 mg/kg/day	prematuring & during gestation
salicylic acid	Ingestion	Toxic to development	Rat	NOAEL 75 mg/kg/day	during organogenesis
p-tert-butylphenol	Ingestion	Not toxic to male reproduction	Rat	NOAEL 600 mg/kg/day	2 generation
p-tert-butylphenol	Ingestion	Some positive female reproductive data exist, but the data are not sufficient for classification	Rat	NOAEL 600 mg/kg/day	2 generation
p-tert-butylphenol	Ingestion	Some positive developmental data exist, but the data are not sufficient for classification	Rat	NOAEL 70 mg/kg/day	2 generation

### Target Organ(s)

#### Specific Target Organ Toxicity - single exposure

Name	Route	Target Organ(s)	Value	Species	Test Result	Exposure Duration
p-tert-butylphenol	Inhalation	respiratory irritation	May cause respiratory irritation	Rat	LOAEL 5.6 mg/l	4 hours

#### Specific Target Organ Toxicity - repeated exposure

Name	Route	Target Organ(s)	Value	Species	Test Result	Exposure Duration
glycerol esters of rosin acids	Ingestion	liver	Some positive data exist, but the data are not sufficient for classification	Rat	NOAEL 5,000 mg/kg/day	90 days
glycerol esters of rosin acids	Ingestion	heart   skin   endocrine system   bone, teeth, nails, and/or hair   blood   bone marrow   hematopoietic system   immune system   muscles   nervous system   eyes   kidney and/or bladder   respiratory system	All data are negative	Rat	NOAEL 5,000 mg/kg/day	90 days
zinc oxide	Ingestion	nervous system	Some positive data exist, but the data are not sufficient for classification	Rat	NOAEL 600 mg/kg/day	10 days
zinc oxide	Ingestion	endocrine system   hematopoietic system   kidney and/or bladder	Some positive data exist, but the data are not sufficient for classification	Other	NOAEL 500 mg/kg/day	6 months
salicylic acid	Ingestion	liver	Some positive data exist, but the data are not sufficient for classification	Rat	NOAEL 500 mg/kg/day	3 days
p-tert-butylphenol	Ingestion	endocrine system   liver   kidney and/or bladder	Some positive data exist, but the data are not sufficient for classification	Rat	NOAEL 600 mg/kg/day	2 generation
p-tert-butylphenol	Ingestion	blood	Some positive data exist, but the data are not sufficient for classification	Rat	NOAEL 200 mg/kg	6 weeks

### Aspiration Hazard

For the component/components, either no data are currently available or the data are not sufficient for classification.



Please contact the address or phone number listed on the first page of the SDS for additional toxicological information on this material and/or its components.

## SECTION 12: Ecological information

### Ecotoxicological information

Please contact the address or phone number listed on the first page of the SDS for additional ecotoxicological information on this material and/or its components.

### Chemical fate information

Please contact the address or phone number listed on the first page of the SDS for additional chemical fate information on this material and/or its components.

## SECTION 13: Disposal considerations

### 13.1. Disposal methods

Dispose of contents/ container in accordance with the local/regional/national/international regulations.

Incinerate in a permitted waste incineration facility. As a disposal alternative, utilize an acceptable permitted waste disposal facility.

**EPA Hazardous Waste Number (RCRA):** Not regulated

## SECTION 14: Transport Information

Not regulated per U.S. DOT, IATA or IMO.

*These transportation classifications are provided as a customer service. As the shipper YOU remain responsible for complying with all applicable laws and regulations, including proper transportation classification and packaging. 3M transportation classifications are based on product formulation, packaging, 3M policies and 3M understanding of applicable current regulations. 3M does not guarantee the accuracy of this classification information. This information applies only to transportation classification and not the packaging, labeling, or marking requirements. The original 3M package is certified for U.S. ground shipment only. If you are shipping by air or ocean, the package may not meet applicable regulatory requirements.*

## SECTION 15: Regulatory information

### 15.1. 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><b>Ingredient</b></u>	<u><b>C.A.S. No</b></u>	<u><b>% by Wt</b></u>
zinc oxide (ZINC COMPOUNDS)	1314-13-2	0.5 - 1.5

### 15.2. State Regulations

Contact 3M for more information.

### 15.3. Chemical Inventories

The components of this product are in compliance with the chemical notification requirements of TSCA.

Contact 3M for more information.

### 15.4. International Regulations

Contact 3M for more information.

This SDS 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 **Instability:** 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.

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