# Safety Data Sheet



| | | | |
|---|---|---|---|
| **Document Group:** | 16-5630-5 | **Version Number:** | 11.00 |
| **Issue Date:** | 05/03/21 | **Supercedes Date:** | 01/28/21 |

## SECTION 1: Identification

**1.1. Product identifier**
3M™ PERMADYNE Garant 2:1 BBase

**Product Identification Numbers**
LE-FSFD-3055-0

**1.2. Recommended use and restrictions on use**

**Recommended use**
Dental Product, Impression material
**Restrictions on use**
For use only by dental professionals

**1.3. Supplier's details**

| | |
|---|---|
| **MANUFACTURER:** | 3M |
| **DIVISION:** | Oral Care Solutions Division |
| **ADDRESS:** | 3M Center, St. Paul, MN 55144-1000, USA |
| **Telephone:** | 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

This document has been prepared in accordance with the U.S. OSHA Hazard Communication Standard, which requires the inclusion of all known hazards of the product or ingredients regardless of the potential risk. The risks of the hazards communicated in this document may vary depending on the potential for exposure.

**2.1. Hazard classification**
Serious Eye Damage/Irritation: Category 2B.
Skin Sensitizer: Category 1A.
Reproductive Toxicity: Category 1B.

**2.2. Label elements**
**Signal word**
Danger

**Symbols**

Exclamation mark | Health Hazard |

**Pictograms**

**Hazard Statements**
Causes eye irritation.
May cause an allergic skin reaction.
May damage 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.
Wash thoroughly after handling.
Contaminated work clothing must not be allowed out of the workplace.

**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 ON SKIN: Wash with plenty of soap and water.
If skin irritation or rash occurs: Get medical advice/attention.
Wash contaminated clothing before reuse.
IF exposed or concerned: Get medical advice/attention.

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

## SECTION 3: Composition/information on ingredients

| Ingredient | C.A.S. No. | % by Wt |
|---|---|---|
| Furan, tetrahydro-, polymer with oxirane, bis[[3-(1-aziridinyl)butyl]carbamate] | 110531-92-5 | 70 - 90 Trade Secret * |
| FATTY ACIDS TRIGLYCERIDES | 67701-27-3 | 1 - 10 Trade Secret * |
| Flux calcined diatomaceous earth (cristobalite 1 - <10%) | 68855-54-9 | < 10 Trade Secret * |
| POLYETHYLENE-POLYPROPYLENE GLYCOL | 9003-11-6 | 1 - 5 Trade Secret * |
| Benzene, bis(phenylmethyl)-, ar-methyl deriv. | 53585-53-8 | < 2 Trade Secret * |
| 1-DODECYLIMIDAZOLE | 4303-67-7 | < 1 Trade Secret * |
| D-LIMONENE | 5989-27-5 | < 0.5 Trade Secret * |

*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 feel unwell, get medical attention.

**Skin Contact:**
Immediately wash with soap and water. Remove contaminated clothing and wash before reuse. If signs/symptoms develop, get medical attention.

**Eye Contact:**
Flush with large amounts of water. Remove contact lenses if easy to do. Continue rinsing. If signs/symptoms persist, 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**

Allergic skin reaction (redness, swelling, blistering, and itching).

**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.

**Hazardous Decomposition or By-Products**

| Substance | Condition |
|---|---|
| Carbon monoxide | During Combustion |
| Carbon dioxide | During Combustion |
| Irritant Vapors or Gases | During Combustion |

**5.3. Special protective actions for fire-fighters**
Wear full protective clothing, including helmet, self-contained, positive pressure or pressure demand breathing apparatus, bunker coat and pants, bands around arms, waist and legs, face mask, and protective covering for exposed areas of the head.

## SECTION 6: Accidental release measures

**6.1. Personal precautions, protective equipment and emergency procedures**
Evacuate area. 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. 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 in accordance with applicable local/regional/national/international regulations.

## SECTION 7: Handling and storage

**7.1. Precautions for safe handling**
Do not handle until all safety precautions have been read and understood. Do not eat, drink or smoke when using this product. Wash thoroughly after handling. Contaminated work clothing should not be allowed out of the workplace. Avoid release to the environment. Wash contaminated clothing before reuse. Avoid contact with oxidizing agents (eg. chlorine, chromic acid etc.) Do not get in eyes. Use personal protective equipment (gloves, respirators, etc.) as required. A no-touch technique is recommended. If skin contact occurs, wash skin with soap and water. If product contacts glove, remove and discard glove, wash hands immediately with soap and water and then re-glove.

**7.2. Conditions for safe storage including any incompatibilities**
Store away from heat. Store away from acids. Store away from strong bases. Store away from oxidizing agents.

## 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 |
|---|---|---|---|---|
| Cyclohexene, 1-methyl-4-(1-methylethenyl)- | 5989-27-5 | AIHA | TWA:165.5 mg/m3(30 ppm) | |
| Cristobalite | 68855-54-9 | ACGIH | TWA(respirable fraction):0.025 mg/m3 | A2: Suspected human carcin. |
| Cristobalite | 68855-54-9 | OSHA | TWA concentration(respirable):0.05 mg/m3(1.2 millions of particles/cu. ft.);TWA:0.05 mg/m3 | |
| SILICA, AMORPHOUS | 68855-54-9 | OSHA | TWA:20 millions of particles/cu. ft.;TWA concentration:0.8 mg/m3 | |

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 in a well-ventilated area.

**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:
Safety Glasses with side shields

**Skin/hand protection**
See Section 7.1 for additional information on skin protection.

**Respiratory protection**

None required.

## SECTION 9: Physical and chemical properties

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

| | |
|---|---|
| **Appearance** | |
| **Physical state** | Solid |
| **Color** | Blue |
| **Specific Physical Form:** | Paste |
| **Odor** | Characteristic Odor |
| **Odor threshold** | *No Data Available* |
| **pH** | *No Data Available* |
| **Melting point** | *Not Applicable* |
| **Boiling Point** | *Not Applicable* |
| **Flash Point** | Flash point > 93 °C (200 °F) |
| **Evaporation rate** | *Not Applicable* |
| **Flammability (solid, gas)** | Not Classified |
| **Flammable Limits(LEL)** | *Not Applicable* |
| **Flammable Limits(UEL)** | *Not Applicable* |
| **Vapor Pressure** | *Not Applicable* |
| **Vapor Density** | *Not Applicable* |
| **Density** | 1 - 1.2 g/cm3 |
| **Specific Gravity** | >= 1 [*Ref Std:*WATER=1] |
| **Solubility in Water** | Negligible |
| **Solubility- non-water** | *No Data Available* |
| **Partition coefficient: n-octanol/ water** | *No Data Available* |
| **Autoignition temperature** | *No Data Available* |
| **Decomposition temperature** | *No Data Available* |
| **Viscosity** | *No Data Available* |
| **Volatile Organic Compounds** | *No Data Available* |
| **Percent volatile** | *No Data Available* |
| **VOC Less H2O & Exempt Solvents** | *No Data Available* |

## SECTION 10: Stability and reactivity

**10.1. Reactivity**
This material is considered to be non reactive under normal use conditions.

**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**
Strong acids
Strong bases
Strong oxidizing agents

**10.6. Hazardous decomposition products**

| Substance | Condition |
|---|---|

None known.

Refer to section 5.2 for hazardous decomposition products during combustion.

# 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.**

**This document has been prepared in accordance with the U.S. OSHA Hazard Communication Standard, which requires the inclusion of all known hazards of the product or ingredients regardless of the potential risk. The risks of the hazards communicated in this document may vary depending on the potential for exposure.**
**The information below represents toxicological information associated with the individual components of the uncured product. Once properly mixed and/or cured, the product is safe for its intended use.**

**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:**
This product may have a characteristic odor; however, no adverse health effects are anticipated.

**Skin Contact:**
Contact with the skin during product use is not expected to result in significant irritation. Allergic Skin Reaction (non-photo induced): Signs/symptoms may include redness, swelling, blistering, and itching.

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

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

May cause additional health effects (see below).

**Additional Health Effects:**

**Reproductive/Developmental Toxicity:**
Contains a chemical or chemicals which can cause birth defects or other reproductive harm.

**Carcinogenicity:**
Exposures needed to cause the following health effect(s) are not expected during normal, intended use:
Contains a chemical or chemicals which can cause cancer.

| Ingredient | CAS No. | Class Description | Regulation |
|---|---|---|---|
| SILICA, CRYS AIRRESP | 68855-54-9 | Grp. 1: Carcinogenic to humans | International Agency for Research on Cancer |
| SILICA, CRYS AIRRESP | 68855-54-9 | Known human carcinogen | National Toxicology Program Carcinogens |

**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 | Dermal | | No data available; calculated ATE >5,000 mg/kg |
| Overall product | Ingestion | | No data available; calculated ATE >5,000 mg/kg |
| Furan, tetrahydro-, polymer with oxirane, bis[[3-(1-aziridinyl)butyl]carbamate] | Dermal | Professional judgement | LD50 Not applicable |
| Furan, tetrahydro-, polymer with oxirane, bis[[3-(1-aziridinyl)butyl]carbamate] | Ingestion | Rat | LD50 > 2,000 mg/kg |
| FATTY ACIDS TRIGLYCERIDES | Dermal | Rabbit | LD50 > 2,000 mg/kg |
| FATTY ACIDS TRIGLYCERIDES | Ingestion | Rat | LD50 > 2,000 mg/kg |
| Flux calcined diatomaceous earth (cristobalite 1 - <10%) | Dermal | Professional judgement | LD50 estimated to be > 5,000 mg/kg |
| Flux calcined diatomaceous earth (cristobalite 1 - <10%) | Inhalation-Dust/Mist (4 hours) | Rat | LC50 > 2.7 mg/l |
| Flux calcined diatomaceous earth (cristobalite 1 - <10%) | Ingestion | Rat | LD50 > 2,000 mg/kg |
| POLYETHYLENE-POLYPROPYLENE GLYCOL | Dermal | Professional judgement | LD50 estimated to be > 5,000 mg/kg |
| POLYETHYLENE-POLYPROPYLENE GLYCOL | Ingestion | Rat | LD50 5,700 mg/kg |
| Benzene, bis(phenylmethyl)-, ar-methyl deriv. | Dermal | Rat | LD50 > 2,000 mg/kg |
| Benzene, bis(phenylmethyl)-, ar-methyl deriv. | Ingestion | Rat | LD50 > 10,360 mg/kg |
| 1-DODECYLIMIDAZOLE | Ingestion | Rat | LD50 641 mg/kg |
| D-LIMONENE | Inhalation-Vapor (4 hours) | Mouse | LC50 > 3.14 mg/l |
| D-LIMONENE | Dermal | Rabbit | LD50 > 5,000 mg/kg |
| D-LIMONENE | Ingestion | Rat | LD50 4,400 mg/kg |

ATE = acute toxicity estimate

## Skin Corrosion/Irritation

| Name | Species | Value |
|---|---|---|
| Furan, tetrahydro-, polymer with oxirane, bis[[3-(1-aziridinyl)butyl]carbamate] | Rabbit | No significant irritation |
| Flux calcined diatomaceous earth (cristobalite 1 - <10%) | In vitro data | No significant irritation |
| Benzene, bis(phenylmethyl)-, ar-methyl deriv. | Rabbit | Mild irritant |
| 1-DODECYLIMIDAZOLE | Rabbit | Mild irritant |
| D-LIMONENE | Rabbit | Mild irritant |

## Serious Eye Damage/Irritation

| Name | Species | Value |
|---|---|---|
| Furan, tetrahydro-, polymer with oxirane, bis[[3-(1-aziridinyl)butyl]carbamate] | Rabbit | Moderate irritant |
| Flux calcined diatomaceous earth (cristobalite 1 - <10%) | Rabbit | Mild irritant |
| Benzene, bis(phenylmethyl)-, ar-methyl deriv. | Rabbit | No significant irritation |
| 1-DODECYLIMIDAZOLE | In vitro data | Severe irritant |
| D-LIMONENE | Rabbit | Mild irritant |

## Skin Sensitization

| Name | Species | Value |
|---|---|---|
| Furan, tetrahydro-, polymer with oxirane, bis[[3-(1-aziridinyl)butyl]carbamate] | Guinea pig | Not classified |
| Flux calcined diatomaceous earth (cristobalite 1 - <10%) | Mouse | Not classified |
| Benzene, bis(phenylmethyl)-, ar-methyl deriv. | Guinea pig | Not classified |

| | | |
|---|---|---|
| 1-DODECYLIMIDAZOLE | Mouse | Sensitizing |
| D-LIMONENE | Mouse | 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 |
|---|---|---|
| Furan, tetrahydro-, polymer with oxirane, bis[[3-(1-aziridinyl)butyl]carbamate] | In Vitro | Not mutagenic |
| Flux calcined diatomaceous earth (cristobalite 1 - <10%) | In Vitro | Some positive data exist, but the data are not sufficient for classification |
| Benzene, bis(phenylmethyl)-, ar-methyl deriv. | In Vitro | Not mutagenic |
| Benzene, bis(phenylmethyl)-, ar-methyl deriv. | In vivo | Not mutagenic |
| 1-DODECYLIMIDAZOLE | In Vitro | Not mutagenic |
| D-LIMONENE | In Vitro | Not mutagenic |
| D-LIMONENE | In vivo | Not mutagenic |

**Carcinogenicity**

| Name | Route | Species | Value |
|---|---|---|---|
| Flux calcined diatomaceous earth (cristobalite 1 - <10%) | Inhalation | Human and animal | Carcinogenic |
| D-LIMONENE | Ingestion | Rat | 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 |
|---|---|---|---|---|---|
| Benzene, bis(phenylmethyl)-, ar-methyl deriv. | Ingestion | Toxic to male reproduction | Rat | NOAEL 250 mg/kg/day | 28 days |
| Benzene, bis(phenylmethyl)-, ar-methyl deriv. | Ingestion | Toxic to female reproduction | Rat | NOAEL 250 mg/kg/day | premating into lactation |
| Benzene, bis(phenylmethyl)-, ar-methyl deriv. | Ingestion | Toxic to development | Rabbit | LOAEL 10 mg/kg/day | during gestation |
| D-LIMONENE | Ingestion | Not classified for female reproduction | Rat | NOAEL 750 mg/kg/day | premating & during gestation |
| D-LIMONENE | Ingestion | Not classified for development | Multiple animal species | NOAEL 591 mg/kg/day | during organogenesis |

**Target Organ(s)**

**Specific Target Organ Toxicity - single exposure**

| Name | Route | Target Organ(s) | Value | Species | Test Result | Exposure Duration |
|---|---|---|---|---|---|---|
| Benzene, bis(phenylmethyl)-, ar-methyl deriv. | Inhalation | respiratory irritation | Some positive data exist, but the data are not sufficient for classification | similar health hazards | NOAEL not available | |
| D-LIMONENE | Ingestion | nervous system | Not classified | | NOAEL Not available | |

**Specific Target Organ Toxicity - repeated exposure**

| Name | Route | Target Organ(s) | Value | Species | Test Result | Exposure Duration |
|---|---|---|---|---|---|---|
| Flux calcined diatomaceous earth (cristobalite 1 - <10%) | Inhalation | silicosis | Causes damage to organs through prolonged or repeated exposure | Human | NOAEL Not available | occupational exposure |
| Flux calcined | Ingestion | hematopoietic | Not classified | Rat | NOAEL | 90 days |

| | | | | | | |
|---|---|---|---|---|---|---|
| diatomaceous earth (cristobalite 1 - <10%) | | system \| eyes \| kidney and/or bladder | | | 3,738 mg/kg/day | |
| Benzene, bis(phenylmethyl)-, ar-methyl deriv. | Ingestion | liver \| kidney and/or bladder \| heart \| skin \| endocrine system \| gastrointestinal tract \| bone, teeth, nails, and/or hair \| hematopoietic system \| immune system \| muscles \| nervous system \| eyes \| respiratory system \| vascular system | Not classified | Rat | NOAEL 500 mg/kg/day | 120 days |
| D-LIMONENE | Ingestion | kidney and/or bladder | Not classified | Rat | LOAEL 75 mg/kg/day | 103 weeks |
| D-LIMONENE | Ingestion | liver | Not classified | Mouse | NOAEL 1,000 mg/kg/day | 103 weeks |
| D-LIMONENE | Ingestion | heart \| endocrine system \| bone, teeth, nails, and/or hair \| hematopoietic system \| immune system \| muscles \| nervous system \| respiratory system | Not classified | Rat | NOAEL 600 mg/kg/day | 103 weeks |

**Aspiration Hazard**

| Name | Value |
|---|---|
| Benzene, bis(phenylmethyl)-, ar-methyl deriv. | Aspiration hazard |
| D-LIMONENE | Aspiration hazard |

**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.

Dispose of waste product in a permitted industrial waste facility.

**EPA Hazardous Waste Number (RCRA):** D005 (Barium)

## SECTION 14: Transport Information

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

# SECTION 15: Regulatory information

## 15.1. US Federal Regulations

Contact 3M for more information.

**EPCRA 311/312 Hazard Classifications:**

| **Physical Hazards** |
|---|
| Not applicable |

| **Health Hazards** |
|---|
| Reproductive toxicity |
| Respiratory or Skin Sensitization |
| Serious eye damage or eye irritation |

## 15.2. State Regulations

Contact 3M for more information.

## 15.3. Chemical Inventories

The components of this material are in compliance with the China "Measures on Environmental Management of New Chemical Substance". Certain restrictions may apply. Contact the selling division for additional information.

This material contains one or more substances not listed on the TSCA Inventory. Commercial use of this material is regulated by the FDA.

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.

| | | | |
|---|---|---|---|
| **Document Group:** | 16-5630-5 | **Version Number:** | 11.00 |
| **Issue Date:** | 05/03/21 | **Supercedes Date:** | 01/28/21 |

DISCLAIMER: The information in this Safety Data Sheet (SDS) 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 SDS available directly from 3M.

**3M USA SDSs are available at www.3M.com**