



Safety Data Sheet

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Transportation version number: 1.00 (13/11/2013)			

This Safety Data Sheet has been prepared in accordance with the REACH Regulation (EC) 1907/2006 and its modifications.

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

3M ESPETTM EXPRESSTM 2 PENTATM PUTTY BASE

1.2. Relevant identified uses of the substance or mixture and uses advised against

Identified uses

Dental material

1.3. Details of the supplier of the substance or mixture

Address: 3M United Kingdom PLC, 3M Centre, Cain Road, Bracknell, Berkshire, RG12 8HT.

E Mail: tox.uk@mmm.com

Website: www.3M.com/uk

1.4. Emergency telephone number

+44 (0)1344 858 000

SECTION 2: Hazard identification

2.1. Classification of the substance or mixture

CLP REGULATION (EC) No 1272/2008

CLASSIFICATION:

This material is exempt from hazard classification according to Regulation (EC) No. 1272/2008, as amended, on classification, labelling, and packaging of substances and mixtures.

Dangerous substances(67/548/EEC)/preparations(1999/45/EC) directive

2.2. Label elements

CLP REGULATION (EC) No 1272/2008

Dangerous substances(67/548/EEC)/preparations(1999/45/EC) directive

Symbol(s)

3M ESPETTM EXPRESSTM 2 PENTATM PUTTY BASE

None.

Contains:

No ingredients are assigned to the label.

Risk phrases None.

Safety phrases None.

Notes on labelling

This product is exempt from labelling per Directive 1999/45/EC as it is defined as a medical device according to Directive 93/42/EEC and is invasive or comes into contact with the human body.

2.3. Other hazards

None known.

SECTION 3: Composition/information on ingredients

Ingredient	CAS Nbr	EU Inventory	% by Wt	Classification
Silane treated quartz	None		65 - 75	
Siloxanes and silicones, Di-Me, vinyl group-terminated	68083-19-2		10 - 20	
Paraffin oils	8012-95-1	EINECS 232-384-2	1 - 10	R53 (Self Classified) Aquatic Chronic 4, H413 (Self Classified)
Dimethyl methyl hydrogen silicone fluid	68037-59-2		< 5	Xn:R20 (Self Classified) Acute Tox. 4, H332 (Self Classified)
Aluminium oxide	1344-28-1	EINECS 215-691-6	< 2	
Chromium (III) oxide	1308-38-9	EINECS 215-160-9	< 1	
Cobalt aluminate blue spinel	1345-16-0	EINECS 310-193-6	< 1	

Please see section 16 for the full text of any R phrases and H statements referred to in this section

Please refer to section 15 for the any applicable Notas that have been applied to the above components

For information on ingredient occupational exposure limits or PBT or vPvB status, see sections 8 and 12 of this SDS

SECTION 4: First aid measures**4.1. Description of first aid measures****Inhalation**

No need for first aid is anticipated.

Skin contact

Wash with soap and water. 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.

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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. 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

<u>Substance</u>	<u>Condition</u>
Formaldehyde	During combustion.
Carbon monoxide.	During combustion.
Carbon dioxide.	During combustion.
Irritant vapours or gases.	During combustion.

5.3. Advice for fire-fighters

No unusual fire or explosion hazards are anticipated.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

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.

6.4. Reference to other sections

Refer to Section 8 and Section 13 for more information

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Do not eat, drink or smoke when using this product. Wash thoroughly after handling. Avoid release to the environment. Avoid contact with oxidising agents (eg. chlorine, chromic acid etc.) Keep away from reactive metals (eg. Aluminum, zinc etc.) to avoid the formation of hydrogen gas that could create an explosion hazard.

7.2. Conditions for safe storage including any incompatibilities

Store away from heat. Store away from strong bases. Store away from oxidising agents.

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7.3. Specific end use(s)

See information in Section 7.1 and 7.2 for handling and storage recommendations. See Section 8 for exposure controls and personal protection recommendations.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Occupational exposure limits

Ingredient	CAS Nbr	Agency	Limit type	Additional comments
Chromium (III) oxide	1308-38-9	Health and Safety Comm. (UK)	TWA(as Cr):0.5 mg/m ³	
Aluminium oxide	1344-28-1	Health and Safety Comm. (UK)	TWA(as inhalable dust):10 mg/m ³ ;TWA(as respirable dust):4 mg/m ³	

Health and Safety Comm. (UK) : UK Health and Safety Commission

TWA: Time-Weighted-Average

STEL: Short Term Exposure Limit

CEIL: Ceiling

8.2. Exposure controls

8.2.1. Engineering controls

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:

As a good industrial hygiene practice:

Wear eye/face protection.

Safety glasses with side shields.

Skin/hand protection

Skin protection is not required.

Respiratory protection

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

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	Solid.
Specific Physical Form:	Paste
Appearance/Odour	Odorless, green
Odour threshold	No data available.
pH	Not applicable.
Boiling point/boiling range	Not applicable.
Melting point	No data available.

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Flammability (solid, gas)	Not classified
Explosive properties	Not classified
Oxidising properties	Not classified
Flash point	<i>Not applicable.</i>
Autoignition temperature	<i>No data available.</i>
Flammable Limits(LEL)	<i>Not applicable.</i>
Flammable Limits(UEL)	<i>Not applicable.</i>
Vapour pressure	<i>Not applicable.</i>
Relative density	≥ 1.73 [Ref Std: WATER=1]

Water solubility	Nil
Solubility- non-water	<i>No data available.</i>

Partition coefficient: n-octanol/water	<i>No data available.</i>
Evaporation rate	<i>Not applicable.</i>
Vapour density	<i>Not applicable.</i>

Decomposition temperature	<i>No data available.</i>
Viscosity	<i>No data available.</i>
Density	≥ 1.73 g/cm ³

9.2. Other information

Volatile organic compounds (VOC)	<i>Not applicable.</i>
Percent volatile	<i>Not applicable.</i>
VOC less H ₂ O & 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 polymerisation will not occur.

10.4 Conditions to avoid

Heat.

10.5 Incompatible materials

Alcohols.
Alkali and alkaline earth metals.
Amines.
Finely divided active metals
Strong bases.
Strong oxidising agents.

10.6 Hazardous decomposition products

<u>Substance</u>	<u>Condition</u>
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 labelling, 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

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

Ingestion

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

Additional information:

This product contains a form of crystalline silica. Occupational exposure to inhaled crystalline silica has been associated with silicosis and lung cancer. No exposure to crystalline silica is expected during the normal handling and use of this product. Therefore, the health effects associated with crystalline silica are not expected during normal use of this product.

Toxicological Data**Acute Toxicity**

Name	Route	Species	Value
Overall product	Ingestion		Data not available or insufficient for classification, calculated ATE >5,000 mg/kg
Siloxanes and silicones, Di-Me, vinyl group-terminated	Dermal	Rabbit	LD50 > 15,440 mg/kg
Siloxanes and silicones, Di-Me, vinyl group-terminated	Ingestion	Rat	LD50 > 15,440 mg/kg
Paraffin oils	Dermal		LD50 estimated to be > 5,000 mg/kg
Paraffin oils	Ingestion	Rat	LD50 > 24,000 mg/kg
Dimethyl methyl hydrogen silicone fluid	Dermal	Rabbit	LD50 > 2,000 mg/kg
Dimethyl methyl hydrogen silicone fluid	Inhalation-Dust/Mist (4 hours)	Rat	LC50 4.2 mg/l
Dimethyl methyl hydrogen silicone fluid	Ingestion	Rat	LD50 > 2,000 mg/kg
Aluminium oxide	Dermal		LD50 estimated to be > 5,000 mg/kg
Aluminium oxide	Inhalation-Dust/Mist (4 hours)	Rat	LC50 > 2.3 mg/l
Aluminium oxide	Ingestion	Rat	LD50 > 5,000 mg/kg
Chromium (III) oxide	Ingestion	Rat	LD50 > 5,000 mg/kg
Cobalt aluminate blue spinel	Ingestion	Rat	LD50 > 10,000 mg/kg

ATE = acute toxicity estimate

Skin Corrosion/Irritation

Name	Species	Value
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Siloxanes and silicones, Di-Me, vinyl group-terminated		Data not available or insufficient for classification
Paraffin oils		Data not available or insufficient for classification
Dimethyl methyl hydrogen silicone fluid		Data not available or insufficient for classification
Aluminium oxide	Rabbit	No significant irritation
Chromium (III) oxide		Data not available or insufficient for classification
Cobalt aluminate blue spinel		Data not available or insufficient for classification

Serious Eye Damage/Irritation

Name	Species	Value
Siloxanes and silicones, Di-Me, vinyl group-terminated		Data not available or insufficient for classification
Paraffin oils		Data not available or insufficient for classification
Dimethyl methyl hydrogen silicone fluid		Data not available or insufficient for classification
Aluminium oxide	Rabbit	No significant irritation
Chromium (III) oxide		Data not available or insufficient for classification
Cobalt aluminate blue spinel		Data not available or insufficient for classification

Skin Sensitisation

Name	Species	Value
Siloxanes and silicones, Di-Me, vinyl group-terminated		Data not available or insufficient for classification
Paraffin oils		Data not available or insufficient for classification
Dimethyl methyl hydrogen silicone fluid		Data not available or insufficient for classification
Aluminium oxide		Data not available or insufficient for classification
Chromium (III) oxide		Data not available or insufficient for classification
Cobalt aluminate blue spinel		Data not available or insufficient for classification

Respiratory Sensitisation

Name	Species	Value
Siloxanes and silicones, Di-Me, vinyl group-terminated		Data not available or insufficient for classification
Paraffin oils		Data not available or insufficient for classification
Dimethyl methyl hydrogen silicone fluid		Data not available or insufficient for classification
Aluminium oxide		Data not available or insufficient for classification
Chromium (III) oxide		Data not available or insufficient for classification
Cobalt aluminate blue spinel		Data not available or insufficient for classification

Germ Cell Mutagenicity

Name	Route	Value
Siloxanes and silicones, Di-Me, vinyl group-terminated		Data not available or insufficient for classification
Paraffin oils		Data not available or insufficient for classification
Dimethyl methyl hydrogen silicone fluid		Data not available or insufficient for classification
Aluminium oxide	In Vitro	Not mutagenic
Chromium (III) oxide		Data not available or insufficient for classification
Cobalt aluminate blue spinel		Data not available or insufficient for classification

Carcinogenicity

Name	Route	Species	Value
Siloxanes and silicones, Di-Me, vinyl group-terminated			Data not available or insufficient for classification
Paraffin oils			Data not available or insufficient for classification
Dimethyl methyl hydrogen silicone fluid			Data not available or insufficient for classification
Aluminium oxide	Inhalation	Rat	Not carcinogenic
Chromium (III) oxide			Data not available or insufficient for classification
Cobalt aluminate blue spinel			Data not available or insufficient for classification

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

Name	Route	Value	Species	Test result	Exposure Duration
Siloxanes and silicones, Di-Me, vinyl group-terminated		Data not available or insufficient for classification			
Paraffin oils		Data not available or insufficient for classification			
Dimethyl methyl hydrogen silicone fluid		Data not available or insufficient for classification			
Aluminium oxide		Data not available or insufficient for			

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		classification			
Chromium (III) oxide		Data not available or insufficient for classification			
Cobalt aluminate blue spinel		Data not available or insufficient for classification			

Target Organ(s)**Specific Target Organ Toxicity - single exposure**

Name	Route	Target Organ(s)	Value	Species	Test result	Exposure Duration
Siloxanes and silicones, Di-Me, vinyl group-terminated			Data not available or insufficient for classification			
Paraffin oils			Data not available or insufficient for classification			
Dimethyl methyl hydrogen silicone fluid			Data not available or insufficient for classification			
Chromium (III) oxide			Data not available or insufficient for classification			
Cobalt aluminate blue spinel			Data not available or insufficient for classification			

Specific Target Organ Toxicity - repeated exposure

Name	Route	Target Organ(s)	Value	Species	Test result	Exposure Duration
Siloxanes and silicones, Di-Me, vinyl group-terminated			Data not available or insufficient for classification			
Paraffin oils			Data not available or insufficient for classification			
Dimethyl methyl hydrogen silicone fluid			Data not available or insufficient for classification			
Aluminium oxide	Inhalation	pneumoconiosis pulmonary fibrosis	Some positive data exist, but the data are not sufficient for classification	Human	NOAEL Not available	occupational exposure
Chromium (III) oxide			Data not available or insufficient for classification			
Cobalt aluminate blue spinel			Data not available or insufficient for classification			

Aspiration Hazard

Name	Value
Siloxanes and silicones, Di-Me, vinyl group-terminated	Not an aspiration hazard
Paraffin oils	Not an aspiration hazard
Dimethyl methyl hydrogen silicone fluid	Not an aspiration hazard
Aluminium oxide	Not an aspiration hazard
Chromium (III) oxide	Not an aspiration hazard
Cobalt aluminate blue spinel	Not an 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

The information below may not be consistent with the material classification in Section 2 if specific ingredient classifications are mandated by a competent authority. Additional information leading to material classification in Section 2 is available upon request. In addition, environmental fate and effects data on ingredients may not be reflected in this section because an ingredient is present below the threshold for labelling, an ingredient is not expected to be available for exposure, or the data is considered not relevant to the material as a whole.

12.1. Toxicity

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No product test data available.

Material	CAS Nbr	Organism	Type	Exposure	Test endpoint	Test result
Aluminium oxide	1344-28-1	Fish	Experimental	96 hours	LC50	>100 mg/l
Aluminium oxide	1344-28-1	Water flea	Experimental	48 hours	EC50	>100 mg/l
Aluminium oxide	1344-28-1	Green algae	Experimental	72 hours	EC50	>100 mg/l
Cobalt aluminate blue spinel	1345-16-0	Water flea	Analogous Compound	48 hours	EC50	0.397 mg/l
Cobalt aluminate blue spinel	1345-16-0	Green algae	Analogous Compound	72 hours	EC50	0.4 mg/l
Cobalt aluminate blue spinel	1345-16-0	Rainbow trout	Analogous Compound	96 hours	LC50	1.406 mg/l
Paraffin oils	8012-95-1	Bluegill	Estimated	96 hours	LC50	>100 mg/l
Aluminium oxide	1344-28-1	Green algae	Experimental	72 hours	NOEC	>100 mg/l
Cobalt aluminate blue spinel	1345-16-0	Water flea	Analogous Compound	21 days	Effect Concentration 10%	0.0079 mg/l
Chromium (III) oxide	1308-38-9		Data not available or insufficient for classification			
Dimethyl methyl hydrogen silicone fluid	68037-59-2		Data not available or insufficient for classification			
Siloxanes and silicones, Di-Me, vinyl group-terminated	68083-19-2		Data not available or insufficient for classification			

12.2. Persistence and degradability

Material	CAS Nbr	Test type	Duration	Study Type	Test result	Protocol
Dimethyl methyl hydrogen silicone fluid	68037-59-2	Data not available or insufficient for classification	N/A	N/A	N/A	N/A
Siloxanes and silicones, Di-Me, vinyl group-terminated	68083-19-2	Data not available or insufficient for classification	N/A	N/A	N/A	N/A
Aluminium oxide	1344-28-1	Data not available or insufficient for classification	N/A	N/A	N/A	N/A

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Paraffin oils	8012-95-1	Estimated Biodegradation	28 days	CO2 evolution	10 % weight	OECD 301B - Modified sturm or CO2
Chromium (III) oxide	1308-38-9	Data not available or insufficient for classification	N/A	N/A	N/A	N/A
Cobalt aluminate blue spinel	1345-16-0	Data not available or insufficient for classification	N/A	N/A	N/A	N/A

12.3 : Bioaccumulative potential

Material	CAS Nbr	Test type	Duration	Study Type	Test result	Protocol
Dimethyl methyl hydrogen silicone fluid	68037-59-2	Data not available or insufficient for classification	N/A	N/A	N/A	N/A
Aluminium oxide	1344-28-1	Data not available or insufficient for classification	N/A	N/A	N/A	N/A
Siloxanes and silicones, Di-Me, vinyl group-terminated	68083-19-2	Data not available or insufficient for classification	N/A	N/A	N/A	N/A
Paraffin oils	8012-95-1	Estimated Bioconcentration		Bioaccumulation factor	2000	Estimated: Bioconcentration factor
Chromium (III) oxide	1308-38-9	Data not available or insufficient for classification	N/A	N/A	N/A	N/A
Cobalt aluminate blue spinel	1345-16-0	Analogous Compound BCF - Fathead Mi	63 days	Bioaccumulation factor	190	Other methods

12.4. Mobility in soil

Please contact manufacturer for more details

12.5. Results of the PBT and vPvB assessment

No information available at this time, contact manufacturer for more details

12.6. Other adverse effects

No information available.

SECTION 13: Disposal considerations**13.1 Waste treatment methods**

See Section 11.1 Information on toxicological effects

3M ESPE™ EXPRESS™ 2 PENTA™ PUTTY BASE

Dispose of completely cured (or polymerised) material in a permitted industrial waste facility. As a disposal alternative, incinerate uncured product in a permitted waste incineration facility. Proper destruction may require the use of additional fuel during incineration processes. If no other disposal options are available, waste product that has been completely cured or polymerised may be placed in a landfill properly designed for industrial waste. Empty drums/barrels/containers used for transporting and handling hazardous chemicals (chemical substances/mixtures/preparations classified as Hazardous as per applicable regulations) shall be considered, stored, treated & disposed of as hazardous wastes unless otherwise defined by applicable waste regulations. Consult with the respective regulating authorities to determine the available treatment and disposal facilities.

The coding of a waste stream is based on the application of the product by the consumer. Since this is out of the control of 3M, no waste code(s) for products after use will be provided. Please refer to the European Waste Code (EWC - 2000/532/EC and amendments) to assign the correct waste code to your waste stream. Ensure national and/or regional regulations are complied with and always use a licensed waste contractor.

EU waste code (product as sold)

180106* Chemicals consisting of or containing dangerous substances.

SECTION 14: Transportation information

ADR/IATA/IMDG: Not Restricted for transport

SECTION 15: Regulatory information

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

Global inventory status

Contact 3M for more information.

15.2. Chemical Safety Assessment

Not applicable

SECTION 16: Other information

List of relevant H statements

H332	Harmful if inhaled.
H413	May cause long lasting harmful effects to aquatic life.

List of relevant R-phrases

R20	Harmful by inhalation.
R53	May cause long-term adverse effects in the aquatic environment.

Revision information:

Revision Changes:

Section 1: Initial issue message information was modified.

Section 8: Occupational exposure limit table information was modified.

Section 14: Transportation classification information was added.

DISCLAIMER: The information on this Safety Data Sheet is based on our experience and is correct to the best of our knowledge at the date of publication, but we do not accept any liability for any loss, damage or injury resulting from its use (except as required by law). The information may not be valid for any use not referred to in this Data Sheet or use of the product in combination with other materials. For these reasons, it is important that customers carry out their own test to satisfy themselves as to the suitability of the product for their own intended applications.

3M ESPET[™] EXPRESS[™] 2 PENTA[™] PUTTY BASE

3M United Kingdom MSDSs are available at www.3M.com/uk



Safety Data Sheet

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Transportation version number:	1.00 (28/11/2013)		

This Safety Data Sheet has been prepared in accordance with the REACH Regulation (EC) 1907/2006 and its modifications.

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

3M ESPETTM EXPRESSTM 2 PENTATM PUTTY CATALYST

1.2. Relevant identified uses of the substance or mixture and uses advised against

Identified uses

Dental material

1.3. Details of the supplier of the substance or mixture

Address: 3M United Kingdom PLC, 3M Centre, Cain Road, Bracknell, Berkshire, RG12 8HT.

E Mail: tox.uk@mmm.com

Website: www.3M.com/uk

1.4. Emergency telephone number

+44 (0)1344 858 000

SECTION 2: Hazard identification

2.1. Classification of the substance or mixture

CLP REGULATION (EC) No 1272/2008

CLASSIFICATION:

This material is exempt from hazard classification according to Regulation (EC) No. 1272/2008, as amended, on classification, labelling, and packaging of substances and mixtures.

Dangerous substances(67/548/EEC)/preparations(1999/45/EC) directive

2.2. Label elements

CLP REGULATION (EC) No 1272/2008

Dangerous substances(67/548/EEC)/preparations(1999/45/EC) directive

Symbol(s)

3M ESPE™ EXPRESS™ 2 PENTA™ PUTTY CATALYST

None.

Contains:

No ingredients are assigned to the label.

Risk phrases None.

Safety phrases None.

Notes on labelling

This product is exempt from labelling per Directive 1999/45/EC as it is defined as a medical device according to Directive 93/42/EEC and is invasive or comes into contact with the human body.

2.3. Other hazards

None known.

SECTION 3: Composition/information on ingredients

Ingredient	CAS Nbr	EU Inventory	% by Wt	Classification
Nepheline syenite	37244-96-5		70 - 80	
Siloxanes and silicones, Di-Me, vinyl group-terminated	68083-19-2		15 - 25	
White mineral oil (petroleum)	8042-47-5	EINECS 232-455-8	1 - 5	Xn:R65 (Self Classified) Asp. Tox. 1, H304 (Self Classified)
Siloxanes and silicones, di-Me	63148-62-9		< 3	

Please see section 16 for the full text of any R phrases and H statements referred to in this section

Please refer to section 15 for the any applicable Notas that have been applied to the above components

For information on ingredient occupational exposure limits or PBT or vPvB status, see sections 8 and 12 of this SDS

SECTION 4: First aid measures

4.1. Description of first aid measures

Inhalation

No need for first aid is anticipated.

Skin contact

Wash with soap and water. 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

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. 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

<u>Substance</u>	<u>Condition</u>
Carbon monoxide.	During combustion.
Carbon dioxide.	During combustion.
Irritant vapours or gases.	During combustion.

5.3. Advice for fire-fighters

No unusual fire or explosion hazards are anticipated.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Observe precautions from other sections.

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 with an appropriate solvent selected by a qualified and authorised person. Ventilate the area with fresh air. Read and follow safety precautions on the solvent label and Safety Data Sheet. Clean up residue. Dispose of collected material as soon as possible.

6.4. Reference to other sections

Refer to Section 8 and Section 13 for more information

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Do not eat, drink or smoke when using this product. Wash thoroughly after handling. Avoid contact with oxidising agents (eg. chlorine, chromic acid etc.)

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 oxidising agents.

7.3. Specific end use(s)

See information in Section 7.1 and 7.2 for handling and storage recommendations. See Section 8 for exposure controls and personal protection recommendations.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Occupational exposure limits

3M ESPE™ EXPRESS™ 2 PENTATM PUTTY CATALYST

No occupational exposure limit values exist for any of the components listed in Section 3 of this Safety Data Sheet.

8.2. Exposure controls

8.2.1. Engineering controls

Not applicable.

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

No chemical protective gloves are required.

Respiratory protection

None required.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	Solid.
Specific Physical Form:	Paste
Appearance/Odour	Characteristic odor, white in color
Odour threshold	No data available.
pH	Not applicable.
Boiling point/boiling range	Not applicable.
Melting point	No data available.
Flammability (solid, gas)	Not classified
Explosive properties	Not classified
Oxidising properties	Not classified
Flash point	Not applicable.
Autoignition temperature	No data available.
Flammable Limits(LEL)	Not applicable.
Flammable Limits(UEL)	Not applicable.
Vapour pressure	Not applicable.
Relative density	≥ 1.8 [Ref Std: WATER=1]
Water solubility	Nil
Solubility- non-water	No data available.
Partition coefficient: n-octanol/water	No data available.
Evaporation rate	Not applicable.
Vapour density	Not applicable.
Decomposition temperature	No data available.
Viscosity	No data available.
Density	≥ 1.8 g/cm ³

9.2. Other information

Volatile organic compounds (VOC) Not applicable.

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Percent volatile
VOC less H₂O & exempt solvents

Not applicable.
Not applicable.

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 polymerisation will not occur.

10.4 Conditions to avoid

Heat.

10.5 Incompatible materials

Alkali and alkaline earth metals.

Amines.

Strong bases.

Strong acids.

Strong oxidising agents.

10.6 Hazardous decomposition products

<u>Substance</u>	<u>Condition</u>
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 labelling, 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

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

3M ESPE™ EXPRESS™ 2 PENTA™ PUTTY CATALYST**Ingestion**

May be harmful if swallowed.

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

Toxicological Data**Acute Toxicity**

Name	Route	Species	Value
Overall product	Ingestion		Data not available or insufficient for classification; calculated ATE3,277 mg/kg
Nepheline syenite	Ingestion		LD50 estimated to be 2,000 - 5,000 mg/kg
Siloxanes and silicones, Di-Me, vinyl group-terminated	Dermal	Rabbit	LD50 > 15,440 mg/kg
Siloxanes and silicones, Di-Me, vinyl group-terminated	Ingestion	Rat	LD50 > 15,440 mg/kg
White mineral oil (petroleum)	Dermal	Rabbit	LD50 > 2,000 mg/kg
White mineral oil (petroleum)	Ingestion	Rat	LD50 > 5,000 mg/kg
Siloxanes and silicones, di-Me	Dermal	Rabbit	LD50 > 19,400 mg/kg
Siloxanes and silicones, di-Me	Ingestion	Rat	LD50 > 17,000 mg/kg

ATE = acute toxicity estimate

Skin Corrosion/Irritation

Name	Species	Value
Nepheline syenite		Data not available or insufficient for classification
Siloxanes and silicones, Di-Me, vinyl group-terminated		Data not available or insufficient for classification
White mineral oil (petroleum)	Rabbit	No significant irritation
Siloxanes and silicones, di-Me	Rabbit	No significant irritation

Serious Eye Damage/Irritation

Name	Species	Value
Nepheline syenite		Data not available or insufficient for classification
White mineral oil (petroleum)	Rabbit	Mild irritant
Siloxanes and silicones, di-Me	Rabbit	No significant irritation

Skin Sensitisation

Name	Species	Value
Nepheline syenite		Data not available or insufficient for classification
Siloxanes and silicones, Di-Me, vinyl group-terminated		Data not available or insufficient for classification
White mineral oil (petroleum)	Guinea pig	Not sensitizing
Siloxanes and silicones, di-Me		Data not available or insufficient for classification

Respiratory Sensitisation

Name	Species	Value
Nepheline syenite		Data not available or insufficient for classification
Siloxanes and silicones, Di-Me, vinyl group-terminated		Data not available or insufficient for classification
White mineral oil (petroleum)		Data not available or insufficient for classification
Siloxanes and silicones, di-Me		Data not available or insufficient for classification

Germ Cell Mutagenicity

Name	Route	Value
Nepheline syenite		Data not available or insufficient for classification
Siloxanes and silicones, Di-Me, vinyl group-terminated		Data not available or insufficient for classification
White mineral oil (petroleum)	In Vitro	Not mutagenic
Siloxanes and silicones, di-Me		Data not available or insufficient for classification

Carcinogenicity

Name	Route	Species	Value
Nepheline syenite			Data not available or insufficient for classification
Siloxanes and silicones, Di-Me, vinyl group-terminated			Data not available or insufficient for classification
White mineral oil (petroleum)	Dermal	Mouse	Not carcinogenic
White mineral oil (petroleum)	Inhalation	Multiple animal	Not carcinogenic

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		species	
Siloxanes and silicones, di-Me			Data not available or insufficient for classification

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

Name	Route	Value	Species	Test result	Exposure Duration
Nepheline syenite		Data not available or insufficient for classification			
Siloxanes and silicones, Di-Me, vinyl group-terminated		Data not available or insufficient for classification			
White mineral oil (petroleum)	Ingestion	Not toxic to female reproduction	Rat	NOAEL 4,350 mg/kg/day	13 weeks
White mineral oil (petroleum)	Ingestion	Not toxic to male reproduction	Rat	NOAEL 4,350 mg/kg/day	13 weeks
White mineral oil (petroleum)	Ingestion	Not toxic to development	Rat	NOAEL 4,350 mg/kg/day	during gestation
Siloxanes and silicones, di-Me		Data not available or insufficient for classification			

Target Organ(s)**Specific Target Organ Toxicity - single exposure**

Name	Route	Target Organ(s)	Value	Species	Test result	Exposure Duration
Nepheline syenite			Data not available or insufficient for classification			
Siloxanes and silicones, Di-Me, vinyl group-terminated			Data not available or insufficient for classification			
White mineral oil (petroleum)			Data not available or insufficient for classification			
Siloxanes and silicones, di-Me			Data not available or insufficient for classification			

Specific Target Organ Toxicity - repeated exposure

Name	Route	Target Organ(s)	Value	Species	Test result	Exposure Duration
Nepheline syenite			Data not available or insufficient for classification			
Siloxanes and silicones, Di-Me, vinyl group-terminated			Data not available or insufficient for classification			
White mineral oil (petroleum)	Ingestion	hematopoietic system	Some positive data exist, but the data are not sufficient for classification	Rat	NOAEL 1,381 mg/kg/day	90 days
White mineral oil (petroleum)	Ingestion	liver immune system	Some positive data exist, but the data are not sufficient for classification	Rat	NOAEL 1,336 mg/kg/day	90 days

Aspiration Hazard

Name	Value
Nepheline syenite	Not an aspiration hazard
Siloxanes and silicones, Di-Me, vinyl group-terminated	Not an aspiration hazard
White mineral oil (petroleum)	Aspiration hazard
Siloxanes and silicones, di-Me	Not an 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

The information below may not be consistent with the material classification in Section 2 if specific ingredient classifications are mandated by a competent authority. Additional information leading to material classification in Section 2 is available upon request. In addition, environmental fate and effects data on ingredients may not be reflected in this section because an ingredient is present below the threshold for labelling, an ingredient is not expected to be available for exposure, or the data is considered not relevant to the material as a whole.

12.1. Toxicity

No product test data available.

Material	CAS Nbr	Organism	Type	Exposure	Test endpoint	Test result
Nepheline syenite	37244-96-5		Data not available or insufficient for classification			
White mineral oil (petroleum)	8042-47-5		Data not available or insufficient for classification			
Siloxanes and silicones, Di-Me, vinyl group-terminated	68083-19-2		Data not available or insufficient for classification			
Siloxanes and silicones, di-Me	63148-62-9		Data not available or insufficient for classification			

12.2. Persistence and degradability

No test data available.

Material	CAS Nbr	Test type	Duration	Study Type	Test result	Protocol
Siloxanes and silicones, di-Me	63148-62-9	Data not available or insufficient for classification	N/A	N/A	N/A	N/A
Siloxanes and silicones, Di-Me, vinyl group-terminated	68083-19-2	Data not available or insufficient for classification	N/A	N/A	N/A	N/A
Nepheline syenite	37244-96-5	Data not available or insufficient for classification	N/A	N/A	N/A	N/A
White mineral oil (petroleum)	8042-47-5	Data not available or insufficient for classification	N/A	N/A	N/A	N/A

12.3 : Bioaccumulative potential

No test data available.

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Material	CAS Nbr	Test type	Duration	Study Type	Test result	Protocol
Siloxanes and silicones, di-Me	63148-62-9	Data not available or insufficient for classification	N/A	N/A	N/A	N/A
Siloxanes and silicones, Di-Me, vinyl group-terminated	68083-19-2	Data not available or insufficient for classification	N/A	N/A	N/A	N/A
Nepheline syenite	37244-96-5	Data not available or insufficient for classification	N/A	N/A	N/A	N/A
White mineral oil (petroleum)	8042-47-5	Data not available or insufficient for classification	N/A	N/A	N/A	N/A

12.4. Mobility in soil

Please contact manufacturer for more details

12.5. Results of the PBT and vPvB assessment

Ingredient	CAS Nbr	PBT/vPvB status
White mineral oil (petroleum)	8042-47-5	Meets REACH PBT criteria

12.6. Other adverse effects

No information available.

SECTION 13: Disposal considerations**13.1 Waste treatment methods**

See Section 11.1 Information on toxicological effects

Dispose of completely cured (or polymerised) material in a permitted industrial waste facility. As a disposal alternative, incinerate uncured product in a permitted waste incineration facility. Proper destruction may require the use of additional fuel during incineration processes. If no other disposal options are available, waste product that has been completely cured or polymerised may be placed in a landfill properly designed for industrial waste. Empty drums/barrels/containers used for transporting and handling hazardous chemicals (chemical substances/mixtures/preparations classified as Hazardous as per applicable regulations) shall be considered, stored, treated & disposed of as hazardous wastes unless otherwise defined by applicable waste regulations. Consult with the respective regulating authorities to determine the available treatment and disposal facilities.

The coding of a waste stream is based on the application of the product by the consumer. Since this is out of the control of 3M, no waste code(s) for products after use will be provided. Please refer to the European Waste Code (EWC - 2000/532/EC and amendments) to assign the correct waste code to your waste stream. Ensure national and/or regional regulations are complied with and always use a licensed waste contractor.

EU waste code (product as sold)

180106* Chemicals consisting of or containing dangerous substances.

SECTION 14: Transportation information

ADR/IATA/IMDG: Not Restricted

SECTION 15: Regulatory information

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

Global inventory status

Contact 3M for more information.

15.2. Chemical Safety Assessment

Not applicable

SECTION 16: Other information

List of relevant H statements

H304 May be fatal if swallowed and enters airways.

List of relevant R-phrases

R65 Harmful: May cause lung damage if swallowed.

Revision information:

No revision information is available.

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