Material Safety Data Sheet

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SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: 12149/ 12150/ 12151/ 12154 3M™ ESPE™ VANISH™ 5% NaF WHITE VARNISH WITH TCP

MANUFACTURER: 3M

DIVISION: 3M ESPE Dental Products

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

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

Issue Date: 06/12/12

Supercedes Date: 04/28/10

Document Group: 26-9856-1

Product Use:

Intended Use: Dental Product

Limitations on Use: For use only by dental professionals

Specific Use: Fluoride Varnish

SECTION 2: INGREDIENTS

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>C.A.S. No.</th>
<th>% by Wt</th>
</tr>
</thead>
<tbody>
<tr>
<td>PENTAERYTHRITOL GLYCEROL ESTER OF COLOPHONY RESIN</td>
<td>Not available</td>
<td>30 - 75</td>
</tr>
<tr>
<td>n-HEXANE</td>
<td>110-54-3</td>
<td>10 - 15</td>
</tr>
<tr>
<td>ETHYL ALCOHOL</td>
<td>64-17-5</td>
<td>1 - 15</td>
</tr>
<tr>
<td>SODIUM FLUORIDE</td>
<td>7681-49-4</td>
<td>1 - 5</td>
</tr>
<tr>
<td>FLAVOR ENHANCER</td>
<td>Not available</td>
<td>1 - 5</td>
</tr>
<tr>
<td>THICKENER</td>
<td>Not available</td>
<td>1 - 5</td>
</tr>
<tr>
<td>FOOD GRADE FLAVOR</td>
<td>Not available</td>
<td>1 - 5</td>
</tr>
<tr>
<td>MODIFIED TRICALCIUM PHOSPHATE</td>
<td>Not available</td>
<td>&lt; 5</td>
</tr>
</tbody>
</table>

SECTION 3: HAZARDS IDENTIFICATION

3.1 EMERGENCY OVERVIEW

Specific Physical Form: Liquid

~Verified on 2012-10 by Henry Schein to be the most current version of the MSDS. To be verified again on 2015-10. ~
Odor, Color, Grade: Light yellow liquid with mint, cherry or melon odor

Immediate health, physical, and environmental hazards: Flammable liquid and vapor. Closed containers exposed to heat from fire may build pressure and explode. 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. See Section 3.2 for other hazards that can be associated with the ingredients in this product in a non-emergency situation.

3.2 POTENTIAL HEALTH EFFECTS

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

Skin Contact:
Moderate Skin Irritation: Signs/symptoms may include localized redness, swelling, itching, and dryness.

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

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

May be absorbed following inhalation and cause target organ effects.

Ingestion:
May be harmful if swallowed.

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

Chemical (Aspiration) Pneumonitis: Signs/symptoms may include coughing, gasping, choking, burning of the mouth, difficulty breathing, bluish colored skin (cyanosis), and may be fatal.

May be absorbed following ingestion and cause target organ effects.

Target Organ Effects:
Central Nervous System (CNS) Depression: Signs/symptoms may include headache, dizziness, drowsiness, incoordination, nausea, slowed reaction time, slurred speech, giddiness, and unconsciousness.

Prolonged or repeated exposure may cause:
Liver Effects: Signs/symptoms may include loss of appetite, weight loss, fatigue, weakness, abdominal tenderness and jaundice.

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.

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.

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

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

NOTE: This product contains ethanol. There are data associating human consumption of alcoholic beverages (ethanol) with developmental toxicity. This is not an expected effect during the foreseeable use of this product.

Carcinogenicity:
Contains a chemical or chemicals which can cause cancer.

NOTE: This product contains ethanol. Alcoholic beverages and ethanol in alcoholic beverages have been classified as human carcinogens by the International Agency for Research on Cancer, the U.S. National Toxicology Program, and the California Environmental Protection Agency (for purposes of Proposition 65). Exposure to ethanol during the foreseeable use of this product is not expected to cause cancer.

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>C.A.S. No.</th>
<th>Class Description</th>
<th>Regulation</th>
</tr>
</thead>
<tbody>
<tr>
<td>ETHYL ALCOHOL</td>
<td>64-17-5</td>
<td>Grp. 1: Carcinogenic to humans</td>
<td>International Agency for Research on Cancer</td>
</tr>
</tbody>
</table>

**SECTION 4: FIRST AID MEASURES**

4.1 FIRST AID PROCEDURES

The following first aid recommendations are based on an assumption that appropriate personal and industrial hygiene practices are followed.

Eye Contact: Flush eyes with large amounts of water. If signs/symptoms persist, get medical attention.

Skin Contact: Remove contaminated clothing and shoes. Immediately flush skin with large amounts of water. Get medical attention. Wash contaminated clothing and clean shoes before reuse.

Inhalation: Remove person to fresh air. If signs/symptoms develop, get medical attention.

If Swallowed: Do not induce vomiting. Give victim two glasses of water. Never give anything by mouth to an unconscious person. Get immediate medical attention.

**SECTION 5: FIRE FIGHTING MEASURES**

5.1 FLAMMABLE PROPERTIES

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Autoignition temperature</td>
<td>No Data Available</td>
</tr>
<tr>
<td>Flash Point</td>
<td>25 ºC [Test Method: Closed Cup]</td>
</tr>
<tr>
<td>Flammable Limits(LEL)</td>
<td>No Data Available</td>
</tr>
<tr>
<td>Flammable Limits(UEL)</td>
<td>No Data Available</td>
</tr>
</tbody>
</table>

5.2 EXTINGUISHING MEDIA

Use fire extinguishers with class B extinguishing agents (e.g., dry chemical, carbon dioxide).

5.3 PROTECTION OF FIRE FIGHTERS

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

Unusual Fire and Explosion Hazards: Flammable liquid and vapor. Closed containers exposed to heat from fire may build pressure and explode.
SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures
Evacuate unprotected and untrained personnel from hazard area. The spill should be cleaned up by qualified personnel. Cover, but do not seal for 48 hours.

6.2. Environmental precautions
For larger spills, cover drains and build dikes to prevent entry into sewer systems or bodies of water. Place in a metal container approved for use in transportation by appropriate authorities. The container must be lined with polyethylene plastic or contain a plastic drum liner made of polyethylene.

Clean-up methods
Observe precautions from other sections. Call 3M-HELPS line (1-800-364-3577) for more information on handling and managing the spill.

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
Keep away from heat, sparks, open flame, pilot lights and other sources of ignition. Avoid breathing of vapors, mists or spray. Use general dilution ventilation and/or local exhaust ventilation to control airborne exposures to below Occupational Exposure Limits. If ventilation is not adequate, use respiratory protection equipment. Avoid eye contact. Avoid prolonged or repeated skin contact. Wash hands after handling and before eating.

7.2 STORAGE
Store away from acids. Store away from heat. Store away from oxidizing agents. Store in a cool, dry place.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 ENGINEERING CONTROLS
Use with appropriate local exhaust ventilation. Use in a well-ventilated area.

8.2 PERSONAL PROTECTIVE EQUIPMENT (PPE)

8.2.1 Eye/Face Protection
Avoid eye contact.
The following eye protection(s) are recommended: Safety Glasses with side shields.

8.2.2 Skin Protection
Avoid prolonged or repeated skin contact. Gloves not normally required.

8.2.3 Respiratory Protection
Under normal use conditions, airborne exposures are not expected to be significant enough to require respiratory protection. Avoid
breathing of vapors, mists or spray.

8.2.4 Prevention of Swallowing
Do not ingest. Wash hands after handling and before eating.

8.3 EXPOSURE GUIDELINES

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>Authority</th>
<th>Type</th>
<th>Limit</th>
<th>Additional Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>ETHYL ALCOHOL</td>
<td>ACGIH</td>
<td>STEL</td>
<td>1000 ppm</td>
<td></td>
</tr>
<tr>
<td>ETHYL ALCOHOL</td>
<td>OSHA</td>
<td>TWA</td>
<td>1900 mg/m3</td>
<td></td>
</tr>
<tr>
<td>FLUORIDES</td>
<td>ACGIH</td>
<td>TWA, as F</td>
<td>2.5 mg/m3</td>
<td></td>
</tr>
<tr>
<td>FLUORIDES</td>
<td>OSHA</td>
<td>TWA, as dust</td>
<td>2.5 mg/m3</td>
<td></td>
</tr>
<tr>
<td>FLUORIDES</td>
<td>OSHA</td>
<td>TWA, as F</td>
<td>2.5 mg/m3</td>
<td></td>
</tr>
<tr>
<td>Hexane</td>
<td>ACGIH</td>
<td>TWA</td>
<td>50 ppm</td>
<td>Skin Notation*</td>
</tr>
<tr>
<td>Hexane</td>
<td>OSHA</td>
<td>TWA</td>
<td>1800 mg/m3</td>
<td></td>
</tr>
<tr>
<td>n-HEXANE</td>
<td>ACGIH</td>
<td>TWA</td>
<td>50 ppm</td>
<td>Skin Notation*</td>
</tr>
<tr>
<td>n-HEXANE</td>
<td>OSHA</td>
<td>TWA</td>
<td>1800 mg/m3</td>
<td></td>
</tr>
</tbody>
</table>

* Substance(s) refer to the potential contribution to the overall exposure by the cutaneous route including mucous membrane and eye, either by airborne or, more particularly, by direct contact with the substance. Vehicles can alter skin absorption.

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

- **Specific Physical Form:** Liquid
- **Odor, Color, Grade:** Light yellow liquid with mint, cherry or melon odor
- **General Physical Form:** Liquid
- **Autoignition temperature:** No Data Available
- **Flash Point:** 25 °C [Test Method: Closed Cup]
- **Flammable Limits(LEL):** No Data Available
- **Flammable Limits(UEL):** No Data Available
- **Boiling Point:** 68 °C
- **Density:** 0.8 g/ml
- **Vapor Density:** Not Applicable
- **Vapor Pressure:** Not Applicable
- **Specific Gravity:** 0.8 [Ref Std: WATER=1]
- **pH:** Not Applicable
- **Melting point:** Not Applicable
- **Solubility in Water:** Moderate
- **Evaporation rate:** Not Applicable
- **Kow - Oct/Water partition coef:** Not Applicable
- **Viscosity:** No Data Available

SECTION 10: STABILITY AND REACTIVITY
Stability: Stable.

Materials and Conditions to Avoid:
10.1 Conditions to avoid
Heat

10.2 Materials to avoid
Strong oxidizing agents
Strong acids

Hazardous Polymerization: Hazardous polymerization will not occur.

Hazardous Decomposition or By-Products

<table>
<thead>
<tr>
<th>Substance</th>
<th>Condition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Carbon monoxide</td>
<td>During Combustion</td>
</tr>
<tr>
<td>Carbon dioxide</td>
<td>During Combustion</td>
</tr>
</tbody>
</table>

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


EPA Hazardous Waste Number (RCRA): D001 (Ignitable)

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

SECTION 14: TRANSPORT INFORMATION

ID Number(s):
70-2010-5739-8, 70-2010-5740-6, 70-2010-5741-4, 70-2010-5742-2, 70-2010-5743-0, 70-2010-5744-8, 70-2010-5745-5, 70-2010-5746-3, 70-2010-5747-1, 70-2010-5748-9, 70-2010-5749-7, 70-2010-5750-5, 70-2010-5751-3, 70-2010-5752-1, 70-2010-8812-0, 70-
2010-8813-8, 70-2010-8814-6, 70-2010-8815-3, 70-2010-8816-1, 70-2010-8817-9, 70-2010-8818-7, 70-2010-8819-5, 70-2010-8820-3, 70-2010-8821-1, 70-2010-8822-9, 70-2010-8823-7, 70-2010-8824-5, 70-2010-8825-2, 70-2010-8826-0, 70-2010-8838-5, 70-2010-8839-3, 70-2010-8840-1, 70-2010-8849-2, 70-2010-8850-0, 70-2010-8851-8

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

SECTION 15: REGULATORY INFORMATION

US FEDERAL REGULATIONS
Contact 3M for more information.

311/312 Hazard Categories:
Fire Hazard - Yes Pressure Hazard - No Reactivity Hazard - No Immediate Hazard - Yes Delayed Hazard - Yes

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

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>CAS. No</th>
<th>% by Wt</th>
</tr>
</thead>
<tbody>
<tr>
<td>n-HEXANE</td>
<td>110-54-3</td>
<td>10 - 15</td>
</tr>
<tr>
<td>n-HEXANE (Hexane)</td>
<td>110-54-3</td>
<td>10 - 15</td>
</tr>
</tbody>
</table>

STATE REGULATIONS
Contact 3M for more information.

CHEMICAL INVENTORIES
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.

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: 3 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: Change in MSDS ingredient disclosure.

Revision Changes:
Section 1: Product use information was modified.
Section 16: Disclaimer (second paragraph) was modified.
Section 10: Hazardous decomposition or by-products table was modified.
Section 3: Carcinogenicity phrase was modified.
Section 14: Transportation legal text was modified.
Section 9: Density information was modified.
Section 9: Boiling point information was modified.
Section 5: Flammable limits (UE) information was modified.
Section 5: Flammable limits (LEL) information was modified.
Section 5: Autoignition temperature information was modified.
Section 9: Vapor density text was modified.
Section 9: Vapor pressure text was modified.
Section 5: Flash point information was modified.
Sections 3 and 9: Odor, color, grade information was modified.
Section 9: Property description for optional properties was modified.
Section 9: Specific gravity information was modified.
Section 9: pH information was modified.
Section 9: Melting point information was modified.
Section 9: Solubility in water text was modified.
Section 9: Flash point information was modified.
Section 9: Flammable limits (LEL) information was modified.
Section 9: Flammable limits (UEL) information was modified.
Section 9: Autoignition temperature information was modified.
Section 14: ID Number(s) Template 1 was modified.
Section 2: Ingredient table was modified.
Section 15: EPCRA 313 information was modified.
Section 8: Exposure guidelines ingredient information was modified.
Section 3: Carcinogenicity table was modified.
Section 6: 6.2. Environmental precautions heading was added.
Section 6: 6.1. Personal precautions, protective equipment and emergency procedures heading was added.
Section 16: Web address was added.
Section 1: Address was added.
Copyright was added.
Company logo was added.
Section 6: Clean-up methods heading was added.
Telephone header was added.
Company Telephone was added.
Section 1: Emergency phone information was added.
Section 1: Emergency phone information was deleted.
Company Logo was deleted.
Copyright was deleted.
Section 16: Web address heading was deleted.
Section 6: Release measures heading was deleted.
Section 1: Address line 1 was deleted.
Section 1: Address line 2 was deleted.

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~Verified on 2012-10 by Henry Schein to be the most current version of the MSDS. To be verified again on 2015-10. ~