MATERIAL SAFETY DATA SHEET

1. Product and Company Identification

Product Name | FINISH® Quantum® - All Variants
CAS # | Mixture

This MSDS is designed for workplace employees, emergency personnel and for other conditions and situations where there is a greater potential for large-scale or prolonged exposure, in accordance with requirements of the U.S. Government's Occupational Safety and Health Administration (OSHA).

This MSDS is not applicable for consumer use of our products. For consumer use, all precautionary and first aid language is provided on the product label in accordance with the applicable government regulation.

Product Use | Dishwasher detergent
Distributed by | Reckitt Benckiser
| Morris Corporate Center IV
| 399 Interpace Parkway
| P.O. Box 225
| Parsippany, NJ 07054-0225
| In Case of Emergency: 1-800-338-6167
| Transportation Emergencies: 24 Hour Number:
| North America: CHEMTREC: 1-800-424-9300
| Outside North America: 1-703-527-3887

2. Hazards Identification

Emergency overview | KEEP OUT OF REACH OF CHILDREN.
| NOTICE: PRODUCT MAY POSE A CHOKING HAZARD TO CHILDREN UNDER 3 YEARS OF AGE.
| CAUTION
| HARMFUL IF SWALLOWED.
| EYE IRRITANT.
| DO NOT ingest.
| DO NOT get in eyes.

Potential short term health effects

Routes of exposure | Eye, Skin contact, Inhalation, Ingestion.
Eyes | Irritating to eyes.
Skin | None expected during normal conditions of use.
| Not expected to be a skin sensitizer.
Inhalation | Exposure to decomposition products may cause a health hazard. Serious effects may be delayed following exposure.
Ingestion | Harmful if swallowed.
Target organs | Skin. Eyes.
Chronic effects | The finished product is not expected to have chronic health effects.
Signs and symptoms | Symptoms may include redness, edema, drying, defatting and cracking of the skin.
OSHA Regulatory Status | This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

Potential environmental effects | See section 12.
3. Composition / Information on Ingredients

<table>
<thead>
<tr>
<th>Ingredient(s)</th>
<th>CAS #</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sodium carbonate</td>
<td>497-19-8</td>
<td>20 - 40</td>
</tr>
<tr>
<td>Acetic acid ethenyl ester, polymer with ethenol</td>
<td>25213-24-5</td>
<td>2.5 - 10</td>
</tr>
<tr>
<td>Alcohols, C12-15, ethoxylated propoxylated</td>
<td>68551-13-3</td>
<td>2.5 - 10</td>
</tr>
<tr>
<td>Sodium citrate</td>
<td>6132-04-3</td>
<td>10 - 20</td>
</tr>
<tr>
<td>Sodium percarbonate</td>
<td>15630-89-4</td>
<td>10 - 20</td>
</tr>
<tr>
<td>Alpha-D-Glucopyranoside, beta-D-fructofuranosyl</td>
<td>57-50-1</td>
<td>0.1 - 1</td>
</tr>
<tr>
<td>Subtilisin carlsburg</td>
<td>9014-01-1</td>
<td>0.1 - 1</td>
</tr>
<tr>
<td>Titanium oxide</td>
<td>13463-67-7</td>
<td>0 - 0.1</td>
</tr>
<tr>
<td>A-Amylase (EC# 3.2.1.1)</td>
<td>9000-90-2</td>
<td>&lt; 0.1</td>
</tr>
</tbody>
</table>

4. First Aid Measures

First aid procedures

Eye contact: If in eyes, IMMEDIATELY rinse eyes with water. Remove any contact lenses and continue rinsing eyes for at least 15 minutes. If irritation persists, get medical attention.

Skin contact: Get medical attention immediately. In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash clothing before reuse.

Inhalation: Move exposed person to fresh air. Get medical attention immediately.

Ingestion: If swallowed, rinse mouth and drink a glass of water. Call a Physician or Poison Control Center. DO NOT INDUCE VOMITING. Wash out mouth with water.

Notes to physician: Treat patient symptomatically.

General advice: If you feel unwell, seek medical advice (show the label where possible). Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves. Show this safety data sheet to the doctor in attendance. Avoid contact with eyes and skin. Keep out of reach of children.

5. Fire Fighting Measures

Flammable properties: Not flammable by OSHA criteria.

Extinguishing media

Suitable extinguishing media: Treat for surrounding material.

Unsuitable extinguishing media: Not available

Protection of firefighters

Specific hazards arising from the chemical: Not available

Protective equipment for firefighters: Firefighters should wear full protective clothing including self contained breathing apparatus.

Hazardous combustion products: May include and are not limited to: Oxides of carbon. Oxides of sulfur. Oxides of nitrogen. Some metallic oxides.

Explosion data

Sensitivity to mechanical impact: Not available

Sensitivity to static discharge: Not available

6. Accidental Release Measures

Personal precautions: Keep unnecessary personnel away. Do not touch or walk through spilled material. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Keep people away from and upwind of spill/leak.

Environmental precautions: Do not discharge into lakes, streams, ponds or public waters. Advise authorities if product has penetrated drains, sewers or water pipes.

Methods for containment: Prevent entry into waterways, sewers, basements or confined areas. Stop leak if you can do so without risk.
Methods for cleaning up

Before attempting clean up, refer to hazard data given above. Use broom or dry vacuum to collect material for proper disposal without raising dust. Rinse area with water. Prevent large spills from entering sewers or waterways. Contact emergency services and supplier for advice.

7. Handling and Storage

Handling

Ensure adequate ventilation.
Avoid contact with eyes, skin, clothing and contamination of food.
Do not ingest.
Use good industrial hygiene practices in handling this material.
When using do not eat or drink.
Wash hands before breaks and immediately after handling the product.
Do not reuse the empty container.
Do not pierce or attempt to unwrap capsules.

Storage

Keep out of reach of children.
Store in a closed container away from incompatible materials.
Keep container tightly closed in a cool, dry and well-ventilated place.
Keep in properly labelled containers.
Keep away from direct sunlight.
Protect from freezing.
Protect from water and heat.
Store between 15°C (56°F) and 30°C (86°F).
## 8. Exposure Controls / Personal Protection

<table>
<thead>
<tr>
<th>Exposure limits Ingredient(s)</th>
<th>Exposure Limits</th>
</tr>
</thead>
<tbody>
<tr>
<td>A-Amylase (EC# 3.2.1.1)</td>
<td>ACGIH-TLV</td>
</tr>
<tr>
<td></td>
<td>Not established</td>
</tr>
<tr>
<td></td>
<td>OSHA-PEL</td>
</tr>
<tr>
<td></td>
<td>Not established</td>
</tr>
<tr>
<td>Acetic acid ethenyl ester, polymer with ethenol</td>
<td>ACGIH-TLV</td>
</tr>
<tr>
<td></td>
<td>Not established</td>
</tr>
<tr>
<td></td>
<td>OSHA-PEL</td>
</tr>
<tr>
<td></td>
<td>Not established</td>
</tr>
<tr>
<td>Alcohols, C12-15, ethoxylated propoxylated</td>
<td>ACGIH-TLV</td>
</tr>
<tr>
<td></td>
<td>Not established</td>
</tr>
<tr>
<td></td>
<td>OSHA-PEL</td>
</tr>
<tr>
<td></td>
<td>Not established</td>
</tr>
<tr>
<td>Alpha-D-Glucopyranoside, beta-D-fructofuranosyl</td>
<td>ACGIH-TLV</td>
</tr>
<tr>
<td></td>
<td>TWA: 10 mg/m3</td>
</tr>
<tr>
<td></td>
<td>OSHA-PEL</td>
</tr>
<tr>
<td></td>
<td>TWA: 15 mg/m3</td>
</tr>
<tr>
<td>Sodium carbonate</td>
<td>ACGIH-TLV</td>
</tr>
<tr>
<td></td>
<td>Not established</td>
</tr>
<tr>
<td></td>
<td>OSHA-PEL</td>
</tr>
<tr>
<td></td>
<td>Not established</td>
</tr>
<tr>
<td>Sodium citrate</td>
<td>ACGIH-TLV</td>
</tr>
<tr>
<td></td>
<td>Not established</td>
</tr>
<tr>
<td></td>
<td>OSHA-PEL</td>
</tr>
<tr>
<td></td>
<td>Not established</td>
</tr>
<tr>
<td>Sodium percarbonate</td>
<td>ACGIH-TLV</td>
</tr>
<tr>
<td></td>
<td>Not established</td>
</tr>
<tr>
<td></td>
<td>OSHA-PEL</td>
</tr>
<tr>
<td></td>
<td>Not established</td>
</tr>
<tr>
<td>Subtilisin carlsburg</td>
<td>ACGIH-TLV</td>
</tr>
<tr>
<td></td>
<td>Ceiling: 0.0001 mg/m3</td>
</tr>
<tr>
<td></td>
<td>OSHA-PEL</td>
</tr>
<tr>
<td></td>
<td>Not established</td>
</tr>
<tr>
<td>Titanium oxide</td>
<td>ACGIH-TLV</td>
</tr>
<tr>
<td></td>
<td>TWA: 10 mg/m3</td>
</tr>
<tr>
<td></td>
<td>OSHA-PEL</td>
</tr>
<tr>
<td></td>
<td>TWA: 15 mg/m3</td>
</tr>
</tbody>
</table>

### Engineering controls

General ventilation normally adequate.

### Personal protective equipment

Consult the product label for special protection or precautions that have been identified for using this product under directed consumer use conditions. The following recommendations are given for workplace employees, emergency personnel and for other conditions and situations where there is a greater potential for large-scale or prolonged exposure.

### Eye / face protection

tightly fitting safety goggles
Emergency responders should wear full eye and face protection.
Hand protection
PVC disposable gloves. Emergency responders should wear impermeable gloves.

Skin and body protection
Usual safety precautions while handling the product will provide adequate protection against injury or irritation. Follow label directions carefully. Emergency responders should wear impermeable clothing and footwear when responding to a situation where contact with the liquid is possible.

Respiratory protection
Where exposure guideline levels may be exceeded, use an approved NIOSH respirator. Emergency responders should wear self-contained breathing apparatus (SCBA) to avoid inhalation of vapours generated by this product during a spill or other clean-up operations.

General hygiene considerations
Handle in accordance with good industrial hygiene and safety practice. When using do not eat or drink. Washing with soap and water after use is recommended as good hygienic practice to prevent possible eye irritation from hand contact.

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9. Physical and Chemical Properties

<table>
<thead>
<tr>
<th>Appearance</th>
<th>Tablet</th>
</tr>
</thead>
<tbody>
<tr>
<td>Color</td>
<td>White / Blue / Red / Yellow</td>
</tr>
<tr>
<td>Form</td>
<td>Liquid gel in a soluble capsule</td>
</tr>
<tr>
<td>Odor</td>
<td>Various</td>
</tr>
<tr>
<td>Odor threshold</td>
<td>Not available</td>
</tr>
<tr>
<td>Physical state</td>
<td>Solid</td>
</tr>
<tr>
<td>pH</td>
<td>10.5 (10%)</td>
</tr>
<tr>
<td>Freezing point</td>
<td>Not available</td>
</tr>
<tr>
<td>Boiling point</td>
<td>Not available</td>
</tr>
<tr>
<td>Pour point</td>
<td>Not available</td>
</tr>
<tr>
<td>Evaporation rate</td>
<td>Not available</td>
</tr>
<tr>
<td>Flash point</td>
<td>&gt; 212.00 °F (&gt; 100 °C)</td>
</tr>
<tr>
<td>Auto-ignition temperature</td>
<td>Not available</td>
</tr>
<tr>
<td>Flammability limits in air, lower, % by volume</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Flammability limits in air, upper, % by volume</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Vapor pressure</td>
<td>Not available</td>
</tr>
<tr>
<td>Vapor density</td>
<td>Not available</td>
</tr>
<tr>
<td>Specific gravity</td>
<td>Not available</td>
</tr>
<tr>
<td>Octanol/water coefficient</td>
<td>Not available</td>
</tr>
<tr>
<td>Solubility (H2O)</td>
<td>Complete</td>
</tr>
</tbody>
</table>

10. Stability and Reactivity

Reactivity
This product may react with strong oxidizing agents.

Possibility of hazardous reactions
Hazardous polymerization does not occur.

Chemical stability
Stable under recommended storage conditions.

Conditions to avoid
DO NOT MIX WITH BLEACH or use in conjunction with other household products. Extremes of temperature and direct sunlight. Exposure to water or water vapor. Keep away from extreme heat. Keep from freezing.

Incompatible materials
Oxidizers.

Hazardous decomposition products
May include and are not limited to: Oxides of carbon. Oxides of sulfur. Oxides of nitrogen.
## 11. Toxicological Information

<table>
<thead>
<tr>
<th>Component analysis - LC50</th>
<th>Ingredient(s)</th>
<th>LC50</th>
</tr>
</thead>
<tbody>
<tr>
<td>A-Amylase (EC# 3.2.1.1)</td>
<td>Not available</td>
<td></td>
</tr>
<tr>
<td>Acetic acid ethenyl ester, polymer with ethenol</td>
<td>Not available</td>
<td></td>
</tr>
<tr>
<td>Alcohols, C12-15, ethoxylated propoxylated</td>
<td>Not available</td>
<td></td>
</tr>
<tr>
<td>Alpha-D-Glucopyranoside, beta-D-fructofuranosyl</td>
<td>Not available</td>
<td></td>
</tr>
<tr>
<td>Sodium carbonate</td>
<td>400 mg/m3 guinea pig</td>
<td></td>
</tr>
<tr>
<td>Sodium citrate</td>
<td>Not available</td>
<td></td>
</tr>
<tr>
<td>Sodium percarbonate</td>
<td>Not available</td>
<td></td>
</tr>
<tr>
<td>Subtilisin carlsburg</td>
<td>Not available</td>
<td></td>
</tr>
<tr>
<td>Titanium oxide</td>
<td>Not available</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Component analysis - Oral LD50</th>
<th>Ingredient(s)</th>
<th>LD50</th>
</tr>
</thead>
<tbody>
<tr>
<td>A-Amylase (EC# 3.2.1.1)</td>
<td>7500 mg/kg rat</td>
<td></td>
</tr>
<tr>
<td>Acetic acid ethenyl ester, polymer with ethenol</td>
<td>5000 mg/kg rat</td>
<td></td>
</tr>
<tr>
<td>Alcohols, C12-15, ethoxylated propoxylated</td>
<td>1200 mg/kg rat</td>
<td></td>
</tr>
<tr>
<td>Alpha-D-Glucopyranoside, beta-D-fructofuranosyl</td>
<td>29700 mg/kg rat</td>
<td></td>
</tr>
<tr>
<td>Sodium carbonate</td>
<td>4090 mg/kg rat</td>
<td></td>
</tr>
<tr>
<td>Sodium citrate</td>
<td>Not available</td>
<td></td>
</tr>
<tr>
<td>Sodium percarbonate</td>
<td>2200 mg/kg mouse; 1034 mg/kg rat</td>
<td></td>
</tr>
<tr>
<td>Subtilisin carlsburg</td>
<td>Not available</td>
<td></td>
</tr>
<tr>
<td>Titanium oxide</td>
<td>24000 mg/kg rat</td>
<td></td>
</tr>
</tbody>
</table>

### Effects of acute exposure

- **Eye**: Irritating to eyes.
- **Skin**: None expected during normal conditions of use. Not expected to be a skin sensitizer.
- **Inhalation**: Exposure to decomposition products may cause a health hazard. Serious effects may be delayed following exposure.
- **Ingestion**: Harmful if swallowed.

**Sensitization**: The finished product is not expected to have chronic health effects.

**Chronic effects**: The finished product is not expected to have chronic health effects.

**Carcinogenicity**: The finished product is not expected to have chronic health effects.

**Mutagenicity**: The finished product is not expected to have chronic health effects.

**Reproductive effects**: The finished product is not expected to have chronic health effects.

**Teratogenicity**: The finished product is not expected to have chronic health effects.

**Name of Toxicologically Synergistic Products**: Not available
12. Ecological Information

Ecotoxicity

Ecotoxicity - Freshwater Algae - Acute Toxicity Data
Sodium carbonate 497-19-8 120 Hr EC50 Nitzschia: 242 mg/L
Sodium percarbonate 15630-89-4 240 Hr EC50 Chlorella emersonii: 70 mg/L

Ecotoxicity - Freshwater Fish - Acute Toxicity Data
Sodium carbonate 497-19-8 96 Hr LC50 Lepomis macrochirus: 300 mg/L [static]; 96 Hr LC50 Pimephales promelas: 310 - 1220 mg/L [static]
Sodium percarbonate 15630-89-4 96 Hr LC50 Pimephales promelas: 70.7 mg/L [static]

Ecotoxicity - Water Flea - Acute Toxicity Data
Sodium carbonate 497-19-8 48 Hr EC50 Daphnia magna: 265 mg/L
Sodium percarbonate 15630-89-4 48 Hr EC50 Daphnia pulex: 4.9 mg/L

Persistence / degradability Not available
Bioaccumulation / accumulation Not available
Mobility in environmental media Not available
Environmental effects Not available
Aquatic toxicity Not available
Partition coefficient Not available
Chemical fate information Not available

13. Disposal Considerations

Disposal instructions Dispose in accordance with all applicable regulations. Empty containers should be recycled.
Waste from residues / unused products Not available
Contaminated packaging Not available

14. Transport Information

UN/ID N.o. Not applicable

U.S. Department of Transportation (DOT): Classification: Not regulated
Proper shipping name Not applicable
U.S. DOT Hazard Class Not applicable
Subsidiary Risk Not applicable
Packing group Not applicable
DOT RQ (lbs) Not applicable
ERG NO Not applicable

Transportation of Dangerous Goods (TDG - Canada): Classification: Not regulated
Proper shipping name Not applicable
Status Not applicable
Packing group Not applicable
IMDG (Marine Transport): Classification: Not regulated
Proper shipping name Not applicable
Class Not applicable
Subsidiary Risk Not applicable
Packing group Not applicable
IMDG Page Not applicable
Marine pollutant Not applicable
EMS Not applicable
MFAG Not applicable
Maximum Quantity Not applicable

IATA/ICAO (Air): Classification: Not regulated
Proper shipping name Not applicable
Class Not applicable
Subsidiary Risk: Not applicable
Packing group Not applicable
Maximum Quantity Not applicable

15. Regulatory Information

Occupational Safety and Health Administration (OSHA)
29 CFR 1910.1200 hazardous chemical Yes
US Federal regulations This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.
Product Registration: Product is compliant with CPSC regulatory guidelines; a specific registration is not required for this product.

CERCLA (Superfund) reportable quantity
None

Superfund Amendments and Reauthorization Act of 1986 (SARA)
Hazard categories Immediate Hazard - Yes
Delayed Hazard - No
Fire Hazard - No
Pressure Hazard - No
Reactivity Hazard - No
Section 302 extremely hazardous substance No
Section 311 hazardous chemical No
Clean Water Act (CWA) Not available
State regulations

This product is not subject to warning labeling under the California Proposition 65 regulation.

U.S. - California - 8 CCR Section 339 - Director's List of Hazardous Substances
Subtilisin carlsburg 9014-01-1 Present

U.S. - Illinois - Toxic Air Contaminant Carcinogens
Titanium oxide 13463-67-7 IARC 2B Carcinogen

U.S. - Massachusetts - Right To Know List
Alpha-D-Glucopyranoside, beta-D-fructofuranosyl 57-50-1 Present (dust)
Titanium oxide 13463-67-7 Present

U.S. - Illinois - Toxic Air Contaminant Carcinogens
Titanium oxide 13463-67-7 Present

U.S. - Massachusetts - Right To Know List
Alpha-D-Glucopyranoside, beta-D-fructofuranosyl 57-50-1 Present (dust)
Titanium oxide 13463-67-7 Present (dust)

U.S. - Minnesota - Hazardous Substance List
Alpha-D-Glucopyranoside, beta-D-fructofuranosyl 57-50-1 Present (dust)
Titanium oxide 13463-67-7 Present (dust)

U.S. - New Jersey - Right to Know Hazardous Substance List
Titanium oxide 13463-67-7 sn 1861

U.S. - Pennsylvania - RTK (Right to Know) List
Alpha-D-Glucopyranoside, beta-D-fructofuranosyl 57-50-1 Present
Titanium oxide 13463-67-7 Present

U.S. - Rhode Island - Hazardous Substance List
Alpha-D-Glucopyranoside, beta-D-fructofuranosyl 57-50-1 Toxic
Titanium oxide 13463-67-7 Toxic

Inventory status

<table>
<thead>
<tr>
<th>Country(s) or region</th>
<th>Inventory name</th>
<th>On inventory (yes/no)*</th>
</tr>
</thead>
<tbody>
<tr>
<td>United States &amp; Puerto Rico</td>
<td>Toxic Substances Control Act (TSCA) Inventory</td>
<td>Yes</td>
</tr>
</tbody>
</table>

A “Yes” indicates that all components of this product comply with the inventory requirements administered by the governing country(s)

16. Other Information

Disclaimer
This product should only be used as directed on the label and for the purpose intended. To the best of our knowledge, the information contained herein is accurate. However, neither the above named supplier nor any of its subsidiaries assumes any liability whatsoever for the accuracy or completeness of the information contained herein. Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.

Further information
FINISH® QUANTUM® - Original - 0375595v3.0
FINISH® QUANTUM® - Baking Soda - 8036496v2.0
FINISH® QUANTUM® - Lemon Sparkle - 8036461v3.0

Issue date
16-Jan-2013

Effective date
15-Jan-2013

Prepared by
Reckitt Benckiser Regulatory Department 800-333-3899

Other information
For an updated MSDS, please contact the supplier/manufacturer listed on the first page of the document.
This MSDS conforms to the ANSI Z400.1/Z129.1-2010 Standard.