Material Safety Data Sheet
TECOFLEX™ AG-8451, CAKE [AG8451Z]


1 Chemical Product and Company Identification

The Lubrizol Corporation
29400 Lakeland Boulevard
Wickliffe, Ohio 44092
Tel: (440) 943-4200

Product Trade Name TECOFLEX™ AG-8451, CAKE [AG8451Z]
CAS Number Confidential.
Synonyms None.
Generic Chemical Name Aliphatic polyurethane polymer
Product Type Not applicable.
Preparation/Revision Date 28 May 2008
Transportation Emergency Phone No.
FOR TRANSPORT EMERGENCY call CHEMTREC: (+1) 703-527-3887 (outside the
U.S.), 1-800-424-9300 (in the U.S.)
MSDS No. 16063005-1222715-1041820-102103

2 Hazards Identification

Appearance Clear pellets.
Odor Slight
Principal Hazards
- This material has no known health hazards.

See Section 11 for complete health hazard information.

3 Composition/Information on Ingredients

Hazardous Ingredients This material has no known hazards under applicable laws.

4 First Aid Measures

Eyes Treat as any foreign particulate matter.
Skin Wash with soap and water. Get medical attention if irritation develops.
Inhalation Remove exposed person to fresh air if adverse effects are observed.
Oral DO NOT INDUCE VOMITING. Get immediate medical attention.
Additional Information Note to physician: Treat symptomatically.

5 Fire Fighting Measures

Flash Point 400 °C, 752 °F PMCC (Typical)
Extinguishing Media
Dry chemical, foam, water.

Firefighting Procedures
Wear full protective firegear including self-containing breathing apparatus operated in the positive pressure mode with full facepiece, coat, pants, gloves and boots. Water may cause splattering.

Unusual Fire & Explosion Hazards
Solid does not readily release flammable vapors. Thermoplastic polymers can burn. Protect product from flames; maintain proper clearance when using heat devices, etc. Irritating or toxic substances will be emitted upon burning, combustion or decomposition. Large masses of molten polymer held at elevated temperatures for extended periods of time may auto-ignite.

Exposure Controls/Personal Protection

Exposure Limits
None established

Other Exposure Limits
None known.

Engineering Controls
Use with adequate ventilation.

Gloves Procedures
To avoid burns from contact with molten product, use thermal insulating gloves.

Eye Protection
Safety Glasses.

Respiratory Protection
Under normal use conditions, respirator is not usually required.

Clothing Recommendation
Long sleeve shirt is recommended.

Physical and Chemical Properties

Pumping Temperature
Not applicable.

Maximum Handling Temperature
Not determined.

Handling Procedures
Loading and unloading operations may cause nuisance dust to form. Do not discharge into drains or the environment, dispose to an authorized waste collection point. Use appropriate containment to avoid environmental contamination. Refer to Processing Guide and/or contact your local Technical Service representative for melt processing temperature range. For most thermoplastic polyurethanes, melt processing is in the range of 177 - 232 deg. C (350 - 450 deg. F), however, some products may process at different temperatures. Fume condensates may include hazardous contaminants from additives. Condensate may be combustible and should be periodically removed from exhaust hoods, ductwork, and other surfaces. Impervious gloves should be worn during cleanup operations to prevent skin contact. Post thermal processing activities necessary to produce molded articles (such as cutting, sanding, sawing, grinding, drilling, or regrinding) may create dust or "fines." Powders, dust, and/or fines may pose a dust explosion hazard. Ground and bond containers when transferring material. The major off-gasses from normal melt processing are expected to be water vapor and carbon dioxide. Other trace volatile organic components may also be emitted. Wash thoroughly after handling.

Maximum Storage Temperature
Not determined.

Storage Procedures
Use good housekeeping measures to prevent dust accumulations. Store in well ventilated place.

Loading Temperature
Not determined.
Flash Point 400 °C, 752 °F PMCC (Typical)
Upper Flammable Limit Not determined.
Lower Flammable Limit Not determined.
Autoignition Point Not determined.
Explosion Data Material does not have explosive properties.
Vapor Pressure Not determined.
pH Not determined.
Specific Gravity 1 (20 °C)
Bulk Density Not determined.
Water Solubility Insoluble.
Percent Solid Not determined.
Percent Volatile Unknown.
Volatile Organic Compound Not determined.
Vapor Density Not determined.
Evaporation Rate Not determined.
Odor Slight
Appearance Clear pellets.
Viscosity Unknown.
Odor Threshold Unknown.
Boiling Point Not determined.
Pour Point Temperature Not determined.
Melting / Freezing Point > 163 °C, > 325.4 °F

The above data are typical values and do not constitute a specification. Vapor pressure data are calculated unless otherwise noted.

### Stability and Reactivity

**Stability**
Material is normally stable at moderately elevated temperatures and pressures.

**Decomposition Temperature**
Not determined.

**Incompatibility**
Strong oxidizing agents.

**Polymerization**
Will not occur.

**Thermal Decomposition**
Smoke, carbon monoxide, carbon dioxide, aldehydes and other products of incomplete combustion. Under combustion conditions, oxides of the following elements will be formed: nitrogen. May also include isocyanates and small amounts of hydrogen cyanide.

**Conditions to Avoid**
Overheating

### Toxicological Information

--- **ACUTE EXPOSURE** ---

**Eye Irritation**
Not expected to cause eye irritation. Based on data from components or similar materials. Particulates may cause mechanical irritation. Contact with heated material may cause thermal burns. Airborne nuisance dust may cause eye irritation. At processing or combustion temperatures this product may emit fumes and vapors that cause irritation, possibly severe, to the eyes.

**Skin Irritation**
Not expected to be a primary skin irritant. Based on data from components or similar materials. Contact with heated polymer may cause thermal burns and adhesion of solidified product to the skin.
Respiratory Irritation
At processing or combustion temperatures this product may emit fumes and vapors that cause irritation, possibly severe, to the respiratory tract, eyes, or skin.

Dermal Toxicity
The LD50 in rabbits is > 2000 mg/Kg. Based on data from components or similar materials.

Inhalation Toxicity
Overexposure to vapors or mist may cause dizziness, headache, nausea, and/or flu-like symptoms. Avoid inhalation of mists or vapors.

Oral Toxicity
The LD50 in rats is > 5000 mg/kg. Based on data from components or similar materials. Ingestion of this material may cause gastrointestinal irritation.

Dermal Sensitization
No data available to indicate product or components may be a skin sensitizer.

Inhalation Sensitization
No data available to indicate product or components may be respiratory sensitizers.

-- CHRONIC EXPOSURE --

Chronic Toxicity
No data available to indicate product or components present at greater than 1% are chronic health hazards.

Carcinogenicity
No data available to indicate any components present at greater than 0.1% may present a carcinogenic hazard.

Mutagenicity
No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.

Reproductive Toxicity
No data available to indicate either product or components present at greater than 0.1% that may cause reproductive toxicity.

Teratogenicity
No data available to indicate product or any components contained at greater than 0.1% may cause birth defects.

-- ADDITIONAL INFORMATION --

Other
Under decomposition conditions, isocyanates may be generated from this product. Isocyanates can cause skin sensitization and/or respiratory sensitization. Pre-existing skin conditions may be aggravated by prolonged or repeated exposure. Persons with sensitive airways (e.g., asthmatics) may react to vapors.

-- ENVIRONMENTAL TOXICITY --

Freshwater Fish Toxicity
The acute LC50 is 10 - 100 mg/L based on component data.

Freshwater Invertebrates Toxicity
Not determined.

Algal Inhibition
Not determined.

Saltwater Fish Toxicity
Not determined.

Saltwater Invertebrates Toxicity
Not determined.

Bacteria Toxicity
Not determined.

Miscellaneous Toxicity
Not determined.

-- ENVIRONMENTAL FATE --

Biodegradation
Adequate data is not available to estimate the biodegradation potential of this material.

Bioaccumulation
Less than 1.0% of the components bioconcentrate in aquatic organisms.

Soil Mobility
Not determined.

-- DISPOSAL CONSIDERATIONS --

Waste Disposal
This material, if discarded, is not a hazardous waste under RCRA Regulation 40 CFR 261. Treatment, storage, transportation, and disposal must be in accordance with applicable Federal, State/Provincial, and Local regulations.
<table>
<thead>
<tr>
<th>14</th>
<th>Transport Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>ICAO/IATA I</td>
<td>Not regulated.</td>
</tr>
<tr>
<td>ICAO/IATA II</td>
<td>Not regulated.</td>
</tr>
<tr>
<td>IMDG</td>
<td>Not regulated.</td>
</tr>
<tr>
<td>IMDG EMS Fire</td>
<td>Not applicable.</td>
</tr>
<tr>
<td>IMDG EMS Spill</td>
<td>Not applicable.</td>
</tr>
<tr>
<td>IMDG MFAG</td>
<td>Not applicable.</td>
</tr>
<tr>
<td>MARPOL Annex II</td>
<td>Not determined.</td>
</tr>
<tr>
<td>USCG Compatibility</td>
<td>Not determined.</td>
</tr>
<tr>
<td>U.S. DOT Bulk</td>
<td>Not regulated.</td>
</tr>
<tr>
<td>U.S. DOT Non-Bulk</td>
<td>Not regulated.</td>
</tr>
<tr>
<td>DOT NAERG</td>
<td>Not applicable.</td>
</tr>
<tr>
<td>TDG Bulk</td>
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</tr>
<tr>
<td>TDG Non-Bulk</td>
<td>Not regulated.</td>
</tr>
<tr>
<td>Mexico</td>
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</tr>
<tr>
<td>Mexico Non-Bulk</td>
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<tr>
<td>Bulk Quantity</td>
<td>85000 KG, 187391 lbs.</td>
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<tr>
<td>Non-Bulk Quantity</td>
<td>207.8 KG, 458 lbs.</td>
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</tbody>
</table>

Review classification requirements before shipping materials at elevated temperatures.

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<thead>
<tr>
<th>15</th>
<th>Regulatory Information</th>
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</table>

**-- Global Chemical Inventories --**

**USA**
All components of this material are on the US TSCA Inventory or are exempt.

**Other TSCA Reg.**
None known.

**EU**
All components are in compliance with the EC Seventh amendment Directive 92/32/EEC.

**Japan**
All components are in compliance with the Chemical Substances Control Law of Japan.

**Australia**
May require notification before sale under Australian regulations.

**New Zealand**
This product requires notification before sale in New Zealand.

**Canada**
This material contains one or more components that are on the Non-Domestic Substances list (NDSL). This material or products containing this material may be exported to Canada in limited quantities.

**Switzerland**
All components are in compliance with the Environmentally Hazardous Substances Ordinance in Switzerland.

**Korea**
All components are in compliance in Korea.

**Philippines**
All components are in compliance with the Philippines Toxic Substances and Hazardous and Nuclear Wastes Control Act of 1990 (R.A. 6969).

**China**
This product requires notification in China.

**-- Other U.S. Federal Regulations --**

**SARA Ext. Haz. Subst.**
This product does not contain greater than 1.0% of any chemical substance on the SARA Extremely Hazardous Substances list.

**SARA Section 313**
This product does not contain greater than 1.0% (greater than 0.1% for carcinogenic substance) of any chemical substances listed under SARA Section 313.

**SARA 311 Classifications**

<p>| Acute Hazard | No |</p>
<table>
<thead>
<tr>
<th>Chronic Hazard</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fire Hazard</td>
<td>No</td>
</tr>
<tr>
<td>Reactivity Hazard</td>
<td>No</td>
</tr>
</tbody>
</table>

**CERCLA Hazardous Substances**

None known.

**FDA Approval**

Not applicable.

--- State Regulations ---

**Cal. Prop. 65**

This product contains chemicals(s) known to the state of California to cause cancer and/or birth defects. Call 440-943-4200 for additional information.

--- Product Registrations ---

**U.S. Fuel Registration**

Not applicable.

**U.S. Dept of Agriculture**

This product has not been filed with the USDA to support H2 approvals.

**NSF Nonfood Compounds Registration**

This product has not been filed with the NSF to support H1 or H2 approvals.

**Finnish Registration Number**

Not Registered

**Swedish Registration Number**

Not Registered

**Norwegian Registration Number**

Not Registered

**Danish Registration Number**

Not Registered

**Swiss Registration Number**

Not Registered

**Italian Registration Number**

Not Registered

**Korean Registration Number**

Not Registered

--- Other / International ---

**TDG Regulated Limit.**

None known.

<table>
<thead>
<tr>
<th>16</th>
<th>Other Information</th>
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</thead>
</table>

**US NFPA Codes**

<table>
<thead>
<tr>
<th>Health</th>
<th>Fire</th>
<th>Reactivity</th>
<th>Special</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>1</td>
<td>0</td>
<td>N/E</td>
</tr>
</tbody>
</table>

(N/E) - None established

**HMIS Codes**

<table>
<thead>
<tr>
<th>Health</th>
<th>Fire</th>
<th>Reactivity</th>
</tr>
</thead>
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<td>0</td>
<td>1</td>
<td>0</td>
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</tbody>
</table>

**Precautionary Labels**

- This material has no known health hazards.

**Revision Indicators**

This MSDS has no revisions since 28 May 2008

As the conditions or methods of use are beyond our control, we do not assume any responsibility and expressly disclaim any liability for any use of this product. Information contained herein is believed to be true and accurate but all statements or suggestions are made without warranty, expressed or implied, regarding accuracy of the information, the hazards connected with the use of the material or the results to be obtained from the use thereof. Compliance with all applicable federal, state, and local regulations remains the responsibility of the user.