1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

CHEMICAL PRODUCT IDENTIFICATION
Product/Trade Name: InsulSafe® 4
              OPTIMA®
              System 5™
Chemical Name: Mixture
CAS No: None Assigned
Common Name: Fiber Glass Insulation
Product Use: Thermal Insulation

MANUFACTURER INFORMATION
CertainTeed Corporation
750 E. Swedesford Road
P.O. Box 860
Valley Forge, PA USA 19482-0105

EMERGENCY TELEPHONE: CHEMTREC 800-424-9300

2. COMPOSITION/INFORMATION ON INGREDIENTS

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>Glass, oxide, chemicals</th>
</tr>
</thead>
<tbody>
<tr>
<td>CAS No:</td>
<td>65997-17-3</td>
</tr>
<tr>
<td>Common Name:</td>
<td>Fibrous glass wool</td>
</tr>
<tr>
<td>Percent in Product:</td>
<td>99% maximum by weight</td>
</tr>
<tr>
<td>LD₅₀:</td>
<td>N/A</td>
</tr>
<tr>
<td>LC₅₀:</td>
<td>N/A</td>
</tr>
<tr>
<td>Exposure Limits:</td>
<td></td>
</tr>
<tr>
<td>OSHA PEL TWA</td>
<td></td>
</tr>
<tr>
<td>Total Nuisance Dust:</td>
<td>15 mg/m³</td>
</tr>
<tr>
<td>Respirable Nuisance Dust:</td>
<td>5 mg/m³</td>
</tr>
<tr>
<td>HSPP Voluntary:</td>
<td>1 f/cc</td>
</tr>
</tbody>
</table>

OSHA PEL TWA                         | ACGIH TLV TWA            | NIOSH REL TWA
Total Glass Dust: 5 mg/m³            | Synthetic Vitreous       | Total Glass Dust: 5 mg/m³
Fibers - Glass Wool Fibers: 1 f/cc   | Respirable Fibers: 3 f/cc |

Oil Mist (Mineral)

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>Distillates (petroleum), solvent dewaxed and/or hydrotreated heavy paraffinic</th>
</tr>
</thead>
<tbody>
<tr>
<td>CAS No:</td>
<td>64742-65-0 and/or 64742-54-7</td>
</tr>
<tr>
<td>Common Name:</td>
<td>Petroleum hydrocarbons</td>
</tr>
<tr>
<td>Percent in Product:</td>
<td>2.5% maximum by weight</td>
</tr>
<tr>
<td>LD₅₀:</td>
<td>N/A</td>
</tr>
<tr>
<td>LC₅₀:</td>
<td>N/A</td>
</tr>
<tr>
<td>Exposure Limits:</td>
<td>Oil Mist (Mineral)</td>
</tr>
<tr>
<td>OSHA PEL TWA</td>
<td>5 mg/m³</td>
</tr>
<tr>
<td>ACGIH TLV TWA</td>
<td>5 mg/m³</td>
</tr>
<tr>
<td>NIOSH REL TWA</td>
<td>5 mg/m³</td>
</tr>
<tr>
<td></td>
<td>STEL 10 mg/m³</td>
</tr>
</tbody>
</table>
3. HAZARD IDENTIFICATION

EMERGENCY OVERVIEW

<table>
<thead>
<tr>
<th></th>
<th>Health</th>
<th>Fire</th>
<th>Reactivity</th>
</tr>
</thead>
<tbody>
<tr>
<td>NFPA Rating:</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>HMIS Rating:</td>
<td>1*</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

(see section 16 for acronyms)

POTENTIAL HEALTH EFFECTS

Primary Routes of Entry: Inhalation, skin and eye contact.

Acute Inhalation: Temporary upper respiratory irritation.

Chronic Inhalation: None known.

Acute Skin Contact and Sensitization: Temporary skin irritation seen in certain individuals.

Chronic Skin Contact: None known.

Skin Absorption: None.

Acute Eye Contact: Temporary eye irritation.

Chronic Eye Contact: None known.

Acute Ingestion: Unlikely. Consult physician if unusual reaction is noted.

Chronic Ingestion: None known.

Medical Conditions Which May Be Aggravated: Pre-existing conditions which may be aggravated by mechanical irritants upon inhalation or skin contact.

Carcinogenicity:

Ingredient: Fiber glass wool, Glasswool (respirable size)

IARC: Group 3, not classifiable as to carcinogenicity to humans.

NTP: Listed as 2, reasonably anticipated to be a carcinogen, sufficient evidence from studies in experimental animals.

OSHA: Not Listed

Mutagenicity: None.

Teratogenicity: None.

Reproductive Toxicity: None.

Toxicological Synergistic Products: None.

Other Potential Health Risks:

Hearing Conservation: Some blowing machines, used to install blowing wool products, create elevated sound levels which may affect worker’s hearing. Use of hearing protection by workers exposed above 85 dB(A) as an 8-hour TWA is recommended.

4. FIRST AID MEASURES

Inhalation: Remove from exposure. Get medical help if irritation persists.

Eye Contact: Flush well with running water for at least 15 minutes. Get medical help if irritation persists.

Skin Contact: Cleanse with soap and water. Get medical help if irritation persists.

Ingestion: Unlikely. Consult physician if unusual reaction is noted.

Fires: Remove to fresh air. Administer oxygen and get medical help.

Information for Medical Practitioners: Skin irritation responds well to mild hydrocortisone cream.
5. FIRE FIGHTING MEASURES

Flash Point (˚F) and Method: Does not support combustion
Flammable Limits: LEL: N/A  UEL: N/A
Autoignition Temperature: N/A
Extinguishing Media: Use that which is applicable to surrounding fire.

Conditions of Flammability and Special Fire Fighting Procedures: Treat as residential building materials.

Unusual Fire and Explosion Hazard, Decomposition Products: None. Comparative animal inhalation toxicity studies of combustion products on a number of CertainTeed fiber glass insulation products found the insulation products to be no more toxic than wood, based on incapacitation and mortality. A non-hazardous mineral oil dust suppressant additive in a concentration of less than 1% may emit carbon monoxide as a decomposition product.

6. ACCIDENTAL RELEASE MEASURES

Spills/Leaks: Vacuum dust deposits.
Accidental or Unplanned Releases: Clean area with vacuum or wet methods.

7. HANDLING AND STORAGE

Handling: When handling and/or applying this insulation:
- Wear long sleeves, gloves and cap.
- Wear eye protection (goggles, safety glasses or face mask).
- Use a NIOSH-certified disposable or reusable particulate respirator with an efficiency of N95 or higher, such as a 3M Brand #8210, #8511, #8233 or equivalent.

After handling and/or applying this insulation:
- Bathe with soap and warm water.
- Wash work clothes separately and rinse washer after use.

Storage: Store under cover to protect product.

8. EXPOSURE CONTROL/PERSONAL PROTECTION

Personal Protective Equipment:

Respirators: Wear NIOSH-certified respirators when handling and applying fiber glass insulation products in accordance with the following NIOSH-based exposure guidelines:

<table>
<thead>
<tr>
<th>Exposure</th>
<th>Respirator (or equivalent)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than 10 times exposure guideline</td>
<td>1/2 mask N95 or higher, such as a 3M Brand 8210, 8511 or 8233</td>
</tr>
<tr>
<td>Less than 50 times exposure guideline</td>
<td>Full-face N100 or higher, such as a 3M Brand 6000 or 7000 series</td>
</tr>
</tbody>
</table>

Work Practices and Engineering Controls: Avoid spread of fiber glass dust. Provide general and/or local exhaust ventilation to control airborne dust levels below exposure limits.
8. **EXPOSURE CONTROL/PERSONAL PROTECTION (Continued)**

Product Package Label:

**WARNING**
Contains fiber glass wool which, under the National Toxicology Program, is a possible cause of cancer if inhaled. This product contains a chemical known to the State of California to cause cancer. This fiber glass wool may cause temporary skin, eye, throat and upper respiratory irritation. P

In 2001, the International Agency for Research on Cancer (IARC) reclassified glass wool as Group 3, not classifiable as to carcinogenicity to humans.

9. **PHYSICAL AND CHEMICAL PROPERTIES**

<table>
<thead>
<tr>
<th>Physical State:</th>
<th>Solid</th>
</tr>
</thead>
<tbody>
<tr>
<td>Boiling Point (°F):</td>
<td>N/A</td>
</tr>
<tr>
<td>Softening Point (°F):</td>
<td>1300°</td>
</tr>
<tr>
<td>Melting Point (°F):</td>
<td>2200°</td>
</tr>
<tr>
<td>Odor:</td>
<td>None</td>
</tr>
<tr>
<td>Odor Threshold:</td>
<td>None</td>
</tr>
<tr>
<td>Color:</td>
<td>White</td>
</tr>
<tr>
<td>pH:</td>
<td>N/A</td>
</tr>
<tr>
<td>Appearance:</td>
<td>White, unbonded glass fibers</td>
</tr>
</tbody>
</table>

| Vapor Density (Air=1): | N/A |
| Specific Gravity (H₂O=1): | Glass=2.5 |
| % Volatile by Volume: | N/A |
| Vapor Pressure: | N/A |
| Evaporative Rate (ethyl ether=1): | N/A |
| % Solubility (H₂O): | Small |
| Freezing Point: | None |
| Coefficient of Water to Oil Distribution: | None |

10. **REACTIVITY**

Stability: Material is stable.

Corrosivity: None

Incompatibility: Hydrofluoric Acid

Reactivity: None

Reactivity with water: None

Explosion: Product is not sensitive to mechanical impact or static discharge.

11. **TOXICOLOGICAL INFORMATION**

Following a thorough review of all of the medical-scientific data available at a meeting in October 2001, the IARC panel lowered the classification for glass wool insulation fibers from a Group 2B classification (“possibly carcinogenic to humans”) to a Group 3 classification (“not classifiable as to carcinogenicity to humans”). IARC said that there is “no evidence of increased risks of lung cancer or of mesothelioma...from occupational exposures during the manufacture of these materials, and inadequate evidence overall of any cancer risk.”

12. **ECOLOGICAL INFORMATION**

This product is not manufactured with, nor does it contain any Class I Ozone depleting chemicals as defined by EPA in Title VI of the Clean Air Act Amendments of 1990 40 CFR Part 82, Protection of Stratospheric Ozone. This product is not classified as a hazardous air pollutant in Title III Clean Air Act of 1990.

Fiber glass is hydrophobic, therefore, no adverse environmental effects would be expected if this product were accidentally released in the water or soil. No harm to fish or wildlife would be caused by this product.
12. ECOLOGICAL INFORMATION (Continued)

CertainTeed’s InsulSafe®4, Optima® and System™5 fiber glass insulation products meet GREENGUARD Emission Standards. CertainTeed’s certification confirms compliance with GREENGUARD Emission Standards, which are based on criteria used by the State of Washington, the U.S. Environmental Protection Agency (EPA), OSHA and the World Health Organization for total particulate and Volatile Organic Compounds (VOC) emissions, including formaldehyde. Additionally, CertainTeed’s residential fiber glass insulation products meet the following emission criteria: California Section CA1350 material specification for schools and offices; OSHA Purchase Specification; State of Washington; EPA; and Proposed State of California. CertainTeed’s residential fiber glass insulations also meet the EPA Recovered Material Guideline for recycled content.

13. WASTE DISPOSAL CONSIDERATIONS

Scrap material should be disposed of in a sanitary landfill in accordance with federal, state and local regulations. Waste material is not considered hazardous as defined by RCRA (40 CFR Part 261).

14. TRANSPORTATION INFORMATION

National Motor Freight Classification (NMFC): 103300S3, Insulation Material – NOI (Not Otherwise Indexed)

15. REGULATORY INFORMATION

As this product is considered a mixture, each component is listed below identifying its status on specific regulatory lists.

<table>
<thead>
<tr>
<th>CHEMICAL NAME</th>
<th>SARA Title III Section 313</th>
<th>SARA Title III Section 302</th>
<th>California Proposition 65</th>
<th>Canada DSL</th>
<th>Korea KECI</th>
<th>EU EINECS</th>
<th>Japan MITI</th>
<th>Philippines</th>
<th>Australia ACS</th>
<th>USA TSCA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fiber glass 65997-17-3</td>
<td>—</td>
<td>—</td>
<td>✓</td>
<td>—</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Petroleum hydrocarbons 64742-65-0 and/or 64742-54-7</td>
<td>—</td>
<td>—</td>
<td>✓</td>
<td>—</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
</tbody>
</table>

† listed as glass wool fibers (airborne particulates of respirable size)

16. ADDITIONAL COMMENTS

Acronyms/definitions used in this MSDS:

ACGIH: American Conference of Governmental Industrial Hygienists
CAS No: Chemical Abstracts Service Number
EPA: Environmental Protection Agency
f/cc: Fibers per cubic centimeter
HMIS: Hazardous Material Identification System
HSPP: Health & Safety Partnership Program between OSHA and the North American Insulation Manufacturer’s Association (NAIMA)
16. ADDITIONAL COMMENTS (Continued)

IARC: International Agency for Research on Cancer
LC₅₀: The air concentration of a substance, when administered over a specified time period in an animal assay, is expected to cause the death of 50% of a defined animal population.
LD₅₀: The single dose of a substance that, when administered by a defined route in an animal assay, is expected to cause the death of 50% of a defined animal population.
LEL: Lower Explosive Limit
mg/m³: Milligrams per cubic meter
N/A: Not Applicable
NFPA: National Fire Protection Association
NIOSH: National Institute for Occupational Safety and Health
NMFC: National Motor Freight Classification
NOI: Not Otherwise Indexed
NTP: National Toxicology Program
N95: A particulate filter respirator certified for at least 95% filter efficiency. For use in atmospheres containing solid or particulate hazards that do not contain oil.
N100: A particulate filter respirator certified for 99.97% filter efficiency. For use in atmospheres containing solid or particulate hazards that do not contain oil.
OSHA: Occupational Safety and Health Administration
PEL: Permissible Exposure Limit
RCRA: Resource Conservation and Recovery Act
REL: Recommended Exposure Limit
SARA: Superfund Amendments and Reauthorization Act
STEL: Short Term Exposure Limit:
Title III: Emergency Planning and Community Right to Know Act
Section 302 – Extremely Hazardous Substances
Section 313 – Toxic Chemicals
TLV: Threshold Limit Value
TSCA: Toxic Substances Control Act (USA)
TWA: Time Weighted Average
UEL: Upper Explosive Limit

Australia AICS: Australian Inventory of Chemical Substances
California Proposition 65: California Title 22, Division 2, Chapter 3 Safe Drinking Water and Toxic Enforcement Act of 1986
Canada DSL: Canadian Domestic Substance List
Canada NDSL: Canadian Non-Domestic Substance List
Europe EINECS: European Inventory of Existing Commercial Chemical Substances
Japan MITI: Ministry of International Trade and Industry
Korea CEIC: Korean Existing Chemicals Inventory
Philippines PICCS: Philippine Inventory of Chemicals and Chemical Substances
Respirable Nuisance Dust: The respirable fraction of suspended airborne particulates
Respirable Fibers (ACGIH): Suspended airborne particulates with lengths greater than 5 microns and a 3:1 length to width aspect ratio. Results given as f/cc.
Respirable Fibers (HSPP): Suspended airborne particulates with diameters of 3 micrometers or less, lengths of 5 micrometers or more and 5:1 length-to-width aspect ratio (NIOSH 7400 method, B rules). Results given as f/cc.
Respirable Fibers (NIOSH): Suspended airborne particulates with diameters of 3.5 microns or less and lengths of 10 microns or more. Results given as f/cc.
Total Nuisance Dust: Suspended airborne particles of “nuisance” dusts including those of non-respirable size
Total Glass Dust: Suspended airborne particles of dust composed of glass only, including those of non-respirable size

This is the end of CertainTeed MSDS CT 2538-18