



SAFETY DATA SHEET

FORTICOAT HT

According to Appendix D, OSHA Hazard Communication Standard 29 CFR §1910.1200

1. Identification

Product identifier

Product name Forticoat HT

Recommended use of the chemical and restrictions on use

Application Coating

Uses advised against No specific uses advised against are identified

Details of the supplier of the safety data sheet

Manufacturer FortiSystems
16601 Central Green Blvd., Ste. 100
Houston, TX 77032 USA
T: 833.840.2777

Emergency telephone number

Emergency telephone 832.922.2926

2. Hazard(s) identification

Classification of the substance or mixture

Physical hazards Not Classified

Health hazards Carc. 1A – H350

Label elements

Pictogram



Signal word Danger

Hazard Statements H350 May cause cancer.

Precautionary statements P201 Obtain special instructions before use.
P202 Do not handle until all safety precautions have been read and understood.
P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.
P308+P313 If exposed or concerned: Get medical advice/ attention.
P405 Store locked up.
P501 Dispose of contents/ container in accordance with national regulations.

Contains Titanium Dioxide, Quartz (SiO₂, Biocide – withheld as TRADE SECRET

Other hazards

This product does not contain any substances classified as PBT or vPvB.

3. Composition/information on ingredients

Mixtures

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Limestone CAS number: 1317-65-3	10-<50%
Titanium dioxide CAS number: 13463-67-7	1 - <15%
Zinc oxide CAS number: 1314-13-2	0 - <0.5%
Aluminum hydroxide CAS number: 21645-51-2	0 - <15%
Quartz (SiO₂) CAS number: 14808-60-7	0.25 - <0.5%
Ammonia CAS number: 1336-21-6	<1%
Biocide - withheld as TRADE SECRET CAS number: Proprietary	<1%
Kaolin CAS number: 1332-58-7	<1%

Composition comments

The exact percentage is withheld as a trade secret in accordance with 29 CFR 1910.1200
The product identifiers are withheld as a trade secret in accordance with 29 CFR 1910.1200

4. First-aid measures

Description of first aid measures

General information

Get medical attention if any discomfort continues. Show this Safety Data Sheet to the medical personnel.

Inhalation

Move affected person to fresh air and keep warm and at rest in a position comfortable for breathing. Maintain an open airway. Loosen tight clothing such as collar, tie or belt. Get medical attention if symptoms are severe or persist.

Ingestion

Rinse mouth thoroughly with water. Give a few small glasses of water or milk to drink. Stop if the affected person feels sick as vomiting may be dangerous. Do not induce vomiting unless under the direction of medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Never give anything by mouth to an unconscious person. Move affected person to fresh air and keep warm and at rest in a position comfortable for breathing. Place unconscious person on their side in the recovery position and ensure breathing can take place. Keep affected person under observation. Get medical attention if symptoms are severe or persist.

Skin contact

Rinse with water.

Eye contact

Rinse immediately with plenty of water. Do not rub eye. Remove any contact lenses and open eyelids wide apart. Continue to rinse for at least 10 minutes. Get medical attention if any discomfort continues.

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Protection of first aiders First aid personnel should wear appropriate protective equipment during any rescue.

Most important symptoms and effects, both acute and delayed

General information	See Section 11 for additional information on health hazards. The severity of the symptoms described will vary dependent on the concentration and the length of exposure.
Inhalation	Prolonged inhalation of high concentrations may damage respiratory system. Prolonged or repeated exposure may cause the following adverse effects: May cause cancer.
Ingestion	Gastrointestinal symptoms, including upset stomach. Nausea, vomiting. Prolonged or repeated exposure may cause the following adverse effects: May cause cancer.
Skin contact	Redness. Irritating to skin. Prolonged or repeated exposure may cause the following adverse effects: May cause cancer.
Eye contact	May cause temporary eye irritation.

Indication of immediate medical attention and special treatment needed

Notes for the doctor Treat symptomatically.

5. Fire-fighting measures

Extinguishing media

Suitable extinguishing media Use extinguishing media appropriate for surrounding fire.

Unsuitable extinguishing media No data available.

Special hazards arising from the substance or mixture

Specific hazards arising from the chemical During fire, gases hazardous to health may be formed.

Unusual Fire and Explosion Hazards In a fire or if heated, a pressure increase will occur and the container may burst.

Advice for firefighters

Protective actions during firefighting No data available.

Special protective equipment for firefighters Wear self-contained breathing apparatus and protective suit.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

Personal precautions Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Wear appropriate protective equipment and clothing during clean-up. Ensure adequate ventilation. Local authorities should be advised if significant spillages cannot be contained. For personal protection, see section 8 of the SDS.

Environmental precautions

Environmental precautions Avoid discharge into drains or watercourses or onto the ground. Avoid discharge to the aquatic environment. Large Spillages: Inform the relevant authorities if environmental pollution occurs (sewers, waterways, soil or air).

Methods and material for containment and cleaning up

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Methods for cleaning up

Large Spills: Stop the flow of material, if this is without risk. Dike the spilled material, where this is possible. Cover with plastic sheet to prevent spreading. Absorb in vermiculite, dry sand or earth and place into containers. Following product recovery, flush area with water.

Small Spills: Wipe up with absorbent material (e.g. cloth, fleece). Clean surface thoroughly to remove residual contamination.

Never return spills to original containers for re-use. For waste disposal, see section 13 of the SDS

Reference to other sections

For personal protection, see Section 8. See Section 11 for additional information on health hazards. See Section 12 for additional information on ecological hazards. For waste disposal, see Section 13.

7. Handling and storage

Precautions for safe handling

Usage precautions

Read and follow manufacturer's recommendations. Wear protective clothing as described in Section 8 of this safety data sheet. Keep away from food, drink and animal feeding stuffs. Handle all packages and containers carefully to minimize spills. Keep container tightly sealed when not in use. Avoid the formation of mists. May cause cancer. Avoid discharge to the aquatic environment. Do not handle until all safety precautions have been read and understood. Do not handle broken packages without protective equipment. Do not reuse empty containers.

Advice on general occupational hygiene

Wash promptly if skin becomes contaminated. Take off contaminated clothing and wash before reuse. Wash contaminated clothing before reuse. Do not eat, drink or smoke when using this product. Wash at the end of each work shift and before eating, smoking and using the toilet. Change work clothing daily before leaving workplace.

Conditions for safe storage, including any incompatibilities

Storage precautions

Store away from incompatible materials (see Section 10). Store locked up. Keep only in the original container. Keep container tightly closed, in a cool, well ventilated place. Keep containers upright. Protect containers from damage.

Storage class

Miscellaneous hazardous material storage.

Shelf-Life

12 months

Storage temperature

Minimum storage temperature: 1°C/33.8°F
Maximum storage temperature: 49°C/120.2°F

Specific end use(s)

Specific end use(s)

The identified uses for this product are detailed in Section 1.

8. Exposure Controls/personal protection

Control parameters

Occupational exposure limits

Comments

The following constituents are the only constituents of the product which have a PEL, TLV or other recommended exposure limit. At this time, the other constituents have no known exposure limits.

Limestone

Long-term exposure limit (8-hour TWA): OSHA 5 mg/m³

respirable fraction

Long-term exposure limit (8-hour TWA): OSHA 15 mg/m³

total dust

Titanium dioxide

Long-term exposure limit (8-hour TWA): ACGIH 10 mg/m³ A4

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Long-term exposure limit (8-hour TWA): OSHA 15 mg/m³

total dust

Zinc oxide

Long-term exposure limit (8-hour TWA): OSHA 5 mg/m³

fume

Long-term exposure limit (8-hour TWA): OSHA 15 mg/m³

total dust

Long-term exposure limit (8-hour TWA): ACGIH 2 mg/m

respirable fraction

Short-term exposure limit (15-minute): ACGIH 10 mg/m³

respirable fraction

Long-term exposure limit (8-hour TWA): OSHA 5 mg/m³

respirable fraction

Aluminum hydroxide

Long-term exposure limit (8-hour TWA): ACGIH 1 mg/m³

A4

Quartz (SiO₂)

Long-term exposure limit (8-hour TWA): ACGIH 0.025 mg/m³

respirable fraction

A2

Ammonia

Long-term exposure limit (8-hour TWA): ACGIH 25 ppm 17 mg/m³ Short-term exposure limit (15-minute): ACGIH 35 ppm 24 mg/m³

Long-term exposure limit (8-hour TWA): OSHA 50 ppm 35 mg/m³

Biocide - withheld as TRADE SECRET

Long-term exposure limit (8-hour TWA): ACGIH 10 mg/m³ A4

Kaolin

Long-term exposure limit (8-hour TWA): ACGIH 2 mg/m³

respirable fraction

A4

Long-term exposure limit (8-hour TWA): OSHA 5 mg/m³

respirable fraction

Long-term exposure limit (8-hour TWA): OSHA 15 mg/m³

total dust

OSHA = Occupational Safety and Health Administration.

ACGIH = American Conference of Governmental Industrial Hygienists.

A4 = Not Classifiable as a Human Carcinogen.

A2 = Suspected Human Carcinogen.

Titanium Dioxide (CAS: 13463-67-7)

Immediate danger to life
and health

5000 mg/m³

Zinc oxide (CAS: 1314-13-2)

Immediate danger to life
and health

500 mg/m³

Silicon dioxide (CAS: 7361-86-9)

Immediate danger to life
and health

3000 mg/m³

Quartz (SiO₂) (CAS: 14808-60-7)

Immediate danger to life
and health

25 mg/m³ 50 mg/m³

Ammonia (CAS: 1336-21-6)

Immediate danger to life
and health

300 ppm

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Exposure controls

Protective equipment



Appropriate engineering controls

Provide adequate ventilation. Ensure the ventilation system is regularly maintained and tested. Good general ventilation should be adequate to control worker exposure to airborne contaminants. Observe any occupational exposure limits for the product or ingredients.

Eye/face protection

Eyewear complying with an approved standard should be worn if a risk assessment indicates eye contact is possible. Personal protective equipment for eye and face protection should comply with OSHA 1910.133. Unless the assessment indicates a higher degree of protection is required, the following protection should be worn: Tight-fitting safety glasses. If inhalation hazards exist, a full-face respirator may be required instead.

Hand protection

Chemical-resistant, impervious gloves complying with an approved standard should be worn if a risk assessment indicates skin contact is possible. The most suitable glove should be chosen in consultation with the glove supplier/manufacturer, who can provide information about the breakthrough time of the glove material. To protect hands from chemicals, gloves should comply with OSHA 1910.138 and be demonstrated to be impervious to the chemical and resist degradation. Considering the data specified by the glove manufacturer, check during use that the gloves are retaining their protective properties and change them as soon as any deterioration is detected. Frequent changes are recommended.

Other skin and body protection Appropriate footwear and additional protective clothing complying with an approved standard should be worn if a risk assessment indicates skin contamination is possible.

Hygiene measures Wash after use and before eating, smoking and using the toilet. Do not eat, drink or smoke when using this product.

Respiratory protection Respiratory protection complying with an approved standard should be worn if a risk assessment indicates inhalation of contaminants is possible. Ensure all respiratory protective equipment is suitable for its intended use and is NIOSH approved. Check that the respirator fits tightly and the filter is changed regularly. Gas and combination filter cartridges should comply with OSHA 1910.134. Full face mask respirators with replaceable filter cartridges should comply with OSHA 1910.134. Half mask and quarter mask respirators with replaceable filter cartridges should comply with OSHA 1910.134.

Environmental exposure controls Keep container tightly sealed when not in use. Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

9. Physical and Chemical Properties

Information on basic physical and chemical properties

Appearance	Liquid.
Color	Various colors.
Odor	Mild. Amine.
Odor threshold	Not available.
pH	Not available.
Melting point	0°C (as water)
Initial boiling point and range	100°C (boiling point of water)
Evaporation rate	Not available.

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Upper/lower flammability or explosive limits	Not available.
Vapor pressure	17 mm Hg @ 20°C/68°F
Vapor density	Not available.
Relative density	Not available.
Specific Gravity	1.2 – 1.5
Partition coefficient	Not available.
Auto-ignition temperature	Not available.
Decomposition temperature	Not available.
Viscosity	Not available.
Explosive properties	Not available.
Oxidizing properties	Not available.
Volatile organic compound	<50g/liter

10. Stability and reactivity

Reactivity	See the other subsections of this section for further details.
Stability	Stable at normal ambient temperatures and when used as recommended. Stable under the prescribed storage conditions.
Possibility of hazardous reactions	No potentially hazardous reactions known.
Conditions to avoid	There are no known conditions that are likely to result in a hazardous situation.
Materials to avoid	No specific material or group of materials is likely to react with the product to produce a hazardous situation.
Hazardous decomposition products	Does not decompose when used and stored as recommended. Thermal decomposition or combustion products may include the following substances: Harmful gases or vapors.

11. Toxicological information

Information on toxicological effects

Acute toxicity – oral

Notes (oral LD₅₀) Based on available data the classification criteria are not met.

Acute toxicity - dermal

Notes (dermal LD₅₀) Based on available data the classification criteria are not met.

Acute toxicity - inhalation

Notes (inhalation LC₅₀) Based on available data the classification criteria are not met.

Skin corrosion/irritation

Skin corrosion/irritation Based on available data the classification criteria are not met.

Serious eye damage/irritation

Serious eye damage/irritation Based on available data the classification criteria are not met.

Respiratory sensitization

Respiratory sensitization Based on available data the classification criteria are not met.

Skin sensitization

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Skin sensitization	Based on available data the classification criteria are not met. The product contains a small amount of sensitizing substance. May cause skin sensitization or allergic reactions in sensitive individuals.
<u>Germ cell mutagenicity</u>	
Genotoxicity - in vitro	Based on available data the classification criteria are not met.
Genotoxicity - in vivo	Based on available data the classification criteria are not met.
<u>Carcinogenicity</u>	
Carcinogenicity	May cause cancer.
IARC carcinogenicity	Contains a substance/a group of substances which may cause cancer. IARC Group 1 Carcinogenic to humans.
NTP carcinogenicity	Contains: Silica, Crystalline (Respirable Size) Known human carcinogen.
<u>Reproductive toxicity</u>	
Reproductive toxicity - fertility	Based on available data the classification criteria are not met.
Reproductive toxicity - development	Based on available data the classification criteria are not met.
<u>Specific target organ toxicity - single exposure</u>	
STOT - single exposure	Not classified as a specific target organ toxicant after a single exposure.
<u>Specific target organ toxicity - repeated exposure</u>	
STOT - repeated exposure	Not classified as a specific target organ toxicant after repeated exposure.
<u>Aspiration hazard</u>	
Aspiration hazard	Based on available data the classification criteria are not met
General information	May cause cancer after repeated exposure. Risk of cancer depends on duration and level of exposure. The severity of the symptoms described will vary dependent on the concentration and the length of exposure.
Inhalation	Prolonged inhalation of high concentrations may damage respiratory system.
Ingestion	Gastrointestinal symptoms, including upset stomach. Fumes from the stomach contents may be inhaled, resulting in the same symptoms as inhalation.
Skin contact	Discoloration of the skin. Prolonged contact may cause redness, irritation and dry skin.
Eye contact	May cause temporary eye irritation.
Route of entry	Ingestion, Inhalation, skin and/or eye contact.
Target organs	No specific target organs known.

12. Ecological information

Ecotoxicity	The product is not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.
<u>Persistence and degradability</u>	
Persistence and degradability	The degradability of the product is not known.
<u>Bio-accumulative potential</u>	
Bio-accumulative potential	No data available on bioaccumulation.
Partition coefficient	Not available.
<u>Mobility in soil</u>	
Mobility	No data available.
<u>Other adverse effects</u>	

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Other adverse effects None known.

13. Disposal considerations

Waste treatment methods

General information

The generation of waste should be minimized or avoided wherever possible. Reuse or recycle products wherever possible. This material and its container must be disposed of in a safe way. Disposal of this product, process solutions, residues and by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any local authority requirements. When handling waste, the safety precautions applying to handling of the product should be considered. Care should be taken when handling emptied containers that have not been thoroughly cleaned or rinsed out. Empty containers or liners may retain some product residues and hence be potentially hazardous.

Disposal methods

Do not empty into drains. Dispose of waste to licensed waste disposal site in accordance with the requirements of the local Waste Disposal Authority.

14. Transport information

General

The product is not covered by international regulations on the transport of dangerous goods (IMDG, IATA, DOT).

UN Number

Not applicable.

UN proper shipping name

Not applicable.

Transport hazard class(es)

No transport warning sign required.

Packing group

Not applicable.

Environmental hazards

Environmentally Hazardous Substance

No.

Special precautions for user

Not applicable.

DOT TIH Zone

Not applicable.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code Not applicable.

15. Regulatory information

Regulatory Status

Classified in accordance with Appendix A, Appendix B and Appendix F of the OSHA Hazard Communication Standard 29 CFR § 1910.1200

Regulatory References

OSHA Hazard Communication Standard 29 CFR §1910.1200

US Federal Regulations

SARA Section 302 Extremely Hazardous Substances Tier II Threshold Planning Quantities

None of the ingredients are listed or exempt.

CERCLA/Superfund, Hazardous Substances/Reportable Quantities (EPA)

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The following ingredients are listed or exempt:

Ammonia

Final CERCLA RQ: 1000(454) pounds (Kilograms)

methyl benzimidazol-2-yl carbamate

Final CERCLA RQ: 10(4.54) pounds (Kilograms)

Biocide - withheld as TRADE SECRET

Final CERCLA RQ: 100(45.4) pounds (Kilograms)

SARA Extremely Hazardous Substances EPCRA Reportable Quantities

None of the ingredients are listed or exempt.

SARA 313 Emission Reporting

The following ingredients are listed or exempt:

Ammonia

1.0%

Zinc oxide

1.0%

Biocide - withheld as TRADE SECRET

1.0%

Biocide - withheld as TRADE SECRET

1.0%

CAA Accidental Release Prevention

None of the ingredients are listed or exempt.

FDA - Essential Chemical

None of the ingredients are listed or exempt.

FDA - Precursor Chemical

None of the ingredients are listed or exempt.

SARA (311/312) Hazard Categories

None of the ingredients are listed or exempt.

OSHA Highly Hazardous Chemicals

None of the ingredients are listed or exempt.

US State Regulations

California Proposition 65 Carcinogens and Reproductive Toxins

The following ingredients are listed or exempt:

Benzophenone

Known to the State of California to cause cancer.

Silicon dioxide

Known to the State of California to cause cancer.

Titanium Dioxide

Known to the State of California to cause cancer.

Biocide - withheld as TRADE SECRET

Known to the State of California to cause cancer.

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California Air Toxics "Hot Spots" (A-I)

The following ingredients are listed or exempt:

Silicon dioxide

Zinc oxide

California Air Toxics "Hot Spots" (A-II)

None of the ingredients are listed or exempt.

California Directors List of Hazardous Substances

The following ingredients are listed or exempt:

Ammonia

Silicon dioxide

Biocide - withheld as TRADE SECRET

Massachusetts "Right To Know" List

The following ingredients are listed or exempt:

Ammonia

Limestone

Quartz (SiO₂)

Silicon dioxide

Titanium Dioxide

Zinc oxide

Biocide - withheld as TRADE SECRET

Kaolin

Rhode Island "Right To Know" List

The following ingredients are listed or exempt:

Benzophenone

Limestone

Quartz (SiO₂)

Silicon dioxide

Titanium Dioxide

Zinc oxide

Propane-1,2-diol

Biocide - withheld as TRADE SECRET

Kaolin

Minnesota "Right To Know" List

The following ingredients are listed or exempt:

Benzophenone

Limestone

Quartz (SiO₂)

Silicon dioxide

Titanium Dioxide

Zinc oxide

Propane-1,2-diol

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Biocide - withheld as TRADE SECRET

Kaolin

New Jersey "Right To Know" List

The following ingredients are listed or exempt:

Ammonia

Limestone

Quartz (SiO₂)

Titanium Dioxide

Zinc oxide

Propane-1,2-diol

Biocide - withheld as TRADE SECRET

methyl benzimidazol-2-yl carbamate

Biocide - withheld as TRADE SECRET

Kaolin

Pennsylvania "Right To Know" List

The following ingredients are listed or exempt:

Ammonia

Limestone

Quartz (SiO₂)

Silicon dioxide

Titanium Dioxide

Zinc oxide

Propane-1,2-diol

Biocide - withheld as TRADE SECRET

Kaolin

Inventories

US – TSCA

All the ingredients are listed or exempt.

US - TSCA 12(b) Export Notification

None of the ingredients are listed or exempt.

Note: Based on information provided by our suppliers, this product is considered “DRC Conflict Free” as defined by the SEC Conflict Minerals Final Rule (Release No. 34-67716; File No. S7- 40-10; Date: 2012-08-22).

16. Other information

Classification abbreviations and acronyms

Carc. = Carcinogenicity

Training advice

Read and follow manufacturer's recommendations. Only trained personnel should use this material.

Revision date

4/24/2018

Revision

4

Supersedes date

1/18/2018

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SDS No. 5533

Hazard statements in full H350 May cause cancer.

This information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process. Such information is, to the best of the company's knowledge and belief, accurate and reliable as of the date indicated. However, no warranty, guarantee or representation is made to its accuracy, reliability or completeness. It is the user's responsibility to satisfy himself as to the suitability of such information for his own particular use.