VULTAC® 710

1. PRODUCT AND COMPANY IDENTIFICATION

Company

Arkema Inc.
900 First Avenue
King of Prussia, Pennsylvania 19406

Thio and Fine Chemicals

Customer Service Telephone Number: (800) 628-4453
(Monday through Friday, 8:00 AM to 5:00 PM EST)

Emergency Information

Transportation: CHEMTREC: (800) 424-9300
(24 hrs., 7 days a week)
Medical: Rocky Mountain Poison Center: (866) 767-5089
(24 hrs., 7 days a week)

Product Information

Product name: VULTAC® 710
Synonyms: Not available
Molecular formula: Not available
Chemical family: Polysulfide
Product use: Curing agent for rubber

2. HAZARDS IDENTIFICATION

Emergency Overview

Color: brown
Physical state: solid
Form: tablets
Odor: phenol-like

***Classification of the substance or mixture:**
Skin sensitisation, Category 1, H317

*For the full text of the H-Statements mentioned in this Section, see Section 16.

GHS-Labelling

Hazard pictograms:

Signal word: **Warning**

Hazard statements:

H317 : May cause an allergic skin reaction.

Supplemental Hazard Statements:

Processing may release vapors and/or fumes which cause eye, skin and respiratory tract irritation.

Precautionary statements:

Prevention:

P261 : Avoid breathing gas/mist/vapours/spray.
P272 : Contaminated work clothing should not be allowed out of the workplace.
P280 : Wear protective gloves.

Response:

P302 + P352 : IF ON SKIN: Wash with plenty of soap and water.
P333 + P313 : If skin irritation or rash occurs: Get medical advice/ attention.
P363 : Wash contaminated clothing before reuse.

Disposal:

P501 : Dispose of contents/ container to an approved waste disposal plant.

Supplemental information:

Potential Health Effects:

Contains high molecular weight polymer(s). Effects due to processing releases: Irritating to eyes, respiratory system and skin.
Prolonged or repeated exposure may cause: headache, drowsiness, nausea, weakness, (severity of effects depends on extent of exposure).

Other:

This product may release fume and/or vapor of variable composition depending on processing time and temperature.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	CAS-No.	Wt/Wt	GHS Classification**
Phenol, 4-(1,1-dimethylpropyl)-, polymer with sulfur chloride (S2Cl2)	68555-98-6	>= 85 - <= 95 %	H317
Octadecanoic acid	57-11-4	>= 9 - < 11 %	Not classified
Sulfur	7704-34-9	< 3 %	H315

**For the full text of the H-Statements mentioned in this Section, see Section 16.

4. FIRST AID MEASURES

4.1. Description of necessary first-aid measures:

Inhalation:
If inhaled, remove victim to fresh air.

Skin:
In case of contact, immediately flush skin with soap and plenty of water. If molten polymer gets on the skin, cool rapidly with cold water. Do not peel solidified product off the skin. Remove contaminated clothing and shoes. Get medical attention if symptoms occur. Wash clothing before reuse. Thoroughly clean shoes before reuse.

Eyes:
Immediately flush eye(s) with plenty of water. Obtain medical treatment for thermal burns.

Ingestion:
If swallowed, DO NOT induce vomiting. Get medical attention. Never give anything by mouth to an unconscious person.

4.2. Most important symptoms/effects, acute and delayed:

For most important symptoms and effects (acute and delayed), see Section 2 (Hazard Statements and Supplemental Information) and Section 11 (Toxicology Information) of this SDS.

4.3. Indication of immediate medical attention and special treatment needed, if necessary:

Unless otherwise noted in Notes to Physician, no specific treatment noted; treat symptomatically.

5. FIREFIGHTING MEASURES

Extinguishing media (suitable):
Water spray, Carbon dioxide (CO2), Foam, Dry chemical

Protective equipment:
Fire fighters and others who may be exposed to products of combustion should wear full fire fighting turn out gear (full Bunker Gear) and self-contained breathing apparatus (pressure demand / NIOSH approved or equivalent).

Further firefighting advice:
Fire fighting equipment should be thoroughly decontaminated after use.

Fire and explosion hazards:
When burned, the following hazardous products of combustion can occur:
Carbon oxides
Sulphur oxides
Hazardous organic compounds

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, Emergency procedures, Methods and materials for containment/clean-up:
Prevent further leakage or spillage if you can do so without risk. Ventilate the area. Sweep up and shovel into suitable properly labeled containers for prompt disposal. Possible fall hazard – floor may become slippery from leakage/spillage of product. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Consult a regulatory specialist to determine appropriate state or local reporting requirements, for assistance in waste characterization and/or hazardous waste disposal and other requirements listed in pertinent environmental permits.

Protective equipment:
Appropriate personal protective equipment is set forth in Section 8.

7. HANDLING AND STORAGE

Handling

General information on handling:
Avoid breathing dust.
Avoid breathing processing fumes or vapors.
Avoid prolonged or repeated contact with skin.
Wash thoroughly after handling.
Emptied container retains product residue.
Observe all labeled safeguards until container is cleaned, reconditioned or destroyed.

Storage

General information on storage conditions:
Stable under normal conditions.

Keep in a dry, cool place. Store in closed containers, in a secure area to prevent container damage and subsequent spillage.

Storage incompatibility – General:
Store separate from: Strong oxidizing agents

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Airborne Exposure Guidelines:

Octadecanoic acid (57-11-4)

US. ACGIH Threshold Limit Values

Time weighted average	10 mg/m3

Only those components with exposure limits are printed in this section. Limits with skin contact designation above have skin contact effect. Air sampling alone is insufficient to accurately quantitate exposure. Measures to prevent significant cutaneous absorption may be required. Limits with a sensitizer designation above mean that exposure to this material may cause allergic reactions.

Engineering controls:
Investigate engineering techniques to reduce exposures below airborne exposure limits or to otherwise reduce exposures. Provide ventilation if necessary to minimize exposures or to control exposure levels to below airborne exposure limits (if applicable see above).If practical, use local mechanical exhaust ventilation at sources of air contamination such as open process equipment.

Respiratory protection:
Avoid breathing dust. Avoid breathing processing fumes or vapors. Where airborne exposure is likely or airborne exposure limits are exceeded (if applicable, see above), use NIOSH approved respiratory protection equipment appropriate to the material and/or its components. Full facepiece equipment is recommended and, if used, replaces need for face shield and/or chemical goggles. Consult respirator manufacturer to determine appropriate type equipment for a given application. Observe respirator use limitations specified by NIOSH or the manufacturer. For emergency and other conditions where there may be a potential for significant exposure or where exposure limit may be significantly exceeded, use an approved full face positive-pressure, self-contained breathing apparatus or positive-pressure airline with auxiliary self-contained air supply. Respiratory protection programs must comply with 29 CFR § 1910.134.

Skin protection:
Wear appropriate chemical resistant protective clothing and chemical resistant gloves to prevent skin contact. Consult glove manufacturer to determine appropriate type glove material for given application. Rinse immediately if skin is contaminated. Wash contaminated clothing and clean protective equipment before reuse. Provide a safety shower at any location where skin contact can occur. Wash thoroughly after handling.

Eye protection:
Where eye contact may be likely, wear chemical goggles and have eye flushing equipment available.

9. PHYSICAL AND CHEMICAL PROPERTIES

Color: brown

Physical state:	solid
Form:	tablets
Odor:	phenol-like
Odor threshold:	No data available.
Flash point	480 °F (249 °C) (Method: TCC (USA) method)
Lower flammable limit (LFL):	Not determined
Upper flammable limit (UFL):	Not determined
pH:	not determined
Density:	Not applicable
Specific Gravity (Relative density):	Not applicable
Bulk density:	1,200 kg/m3 77 °F (25 °C)
Boiling point/boiling range:	Not applicable
Melting point/range:	No data available.
Freezing point:	not determined
Evaporation rate:	No data available.
Solubility in water:	insoluble
Viscosity, dynamic:	No data available.
% Volatiles:	0 %
Oil/water partition coefficient:	log Pow: > 7
Thermal decomposition:	No data available.
Flammability:	See GHS Classification in Section 2

10. STABILITY AND REACTIVITY

Stability:
This material is chemically stable under normal and anticipated storage, handling and processing conditions.

Hazardous reactions:
Hazardous polymerization does not occur.

Materials to avoid:
Strong oxidizing agents

Conditions / hazards to avoid:
Avoid dust formation. To avoid thermal decomposition, do not overheat. Avoid flames, welding arcs, potential ignition sources, or other high temperature sources which induce thermal decomposition.

Hazardous decomposition products:

Thermal decomposition giving flammable and toxic products :
Carbon oxides
Sulphur oxides
Hazardous organic compounds

11. TOXICOLOGICAL INFORMATION

Data on this material and/or its components are summarized below.

Data for Phenol, 4-(1,1-dimethylpropyl)-, polymer with sulfur chloride (S2Cl2) (68555-98-6)

Acute toxicity

Oral:
Practically nontoxic. (rat) LD50 = 5,500 mg/kg.

Dermal:
No deaths occurred. (rabbit) LD0 > 2,000 mg/kg.

Skin Irritation:
Not irritating. (rabbit) (4 h)

Eye Irritation:
Causes mild eye irritation. (rabbit)

Skin Sensitization:
May cause an allergic skin reaction. Guinea pig maximization test. Skin allergy was observed. (Strong sensitizer)

Human experience
Skin contact:
Skin: Slightly irritating.

Data for Octadecanoic acid (57-11-4)

Acute toxicity

Oral:
Practically nontoxic. (rat) LD50 > 5,000 mg/kg.

Dermal:
No deaths occurred. (rabbit) LD0 > 2,000 mg/kg.

Skin Irritation:
Not irritating. (rabbit)

Eye Irritation:
Causes mild eye irritation. (rabbit)

Skin Sensitization:
Not a sensitizer. Buehler method. (guinea pig) No skin allergy was observed (data for a similar material)

Repeated dose toxicity
Repeated oral administration to rat / No adverse effects reported. (data for a similar material)

Carcinogenicity
Chronic dietary administration to rat / No increase in tumor incidence was reported.

Genotoxicity

Assessment in Vitro:
No genetic changes were observed in laboratory tests using: bacteria, animal cells, (data for a similar material)

Developmental toxicity
Reproductive/Developmental Effects Screening Assay. oral (rat) / No birth defects were observed. (data for a similar material)

Reproductive effects
Reproductive/Developmental Effects Screening Assay. oral (rat) / No toxicity to reproduction / (data for a similar material)

Human experience
Skin contact:
Skin: No skin allergy was observed (studied using human volunteers)

Data for Sulfur (7704-34-9)

Acute toxicity

Oral:
No deaths occurred. (rat) LD0 > 2,000 mg/kg.

Dermal:
No deaths occurred. (rabbit) LD0 > 2,000 mg/kg.

Inhalation:
Practically nontoxic. (rat) 4 h LC50 > 5.43 mg/l. (dust)

Skin Irritation:
Causes skin irritation. (rabbit)

Eye Irritation:
Causes mild eye irritation. (rabbit)

Skin Sensitization:
Not a sensitizer. Repeated skin exposure. (guinea pig) No skin allergy was observed

Repeated dose toxicity
Subchronic inhalation administration to rat / signs: reduced body weight

Subchronic oral administration to rat / No adverse effect has been observed in chronic toxicity tests.

Repeated dermal administration to rat / affected organ(s): Skin / signs: Irritation

Genotoxicity

Assessment in Vitro:
No genetic changes were observed in laboratory tests using: bacteria, animal cells

Genotoxicity

Assessment in Vivo:
No genetic changes were observed in a laboratory test using: mice

Human experience
Inhalation:
Respiratory disorders, chronic bronchitis. (dust)

Human experience
Skin contact:
Erythema. (repeated or prolonged exposure)

Human experience
Eye contact:
Dust and/or vapor are reported to cause irritation when proper industrial hygiene controls/procedures are not used.

12. ECOLOGICAL INFORMATION

Chemical Fate and Pathway
Data on this material and/or its components are summarized below.

Data for Octadecanoic acid (57-11-4)

Biodegradation:
Readily biodegradable. (28 d) biodegradation 72 %

Octanol Water Partition Coefficient:
log Pow: > 8.23

Ecotoxicology
Data on this material and/or its components are summarized below.

Data for Octadecanoic acid (57-11-4)

Aquatic toxicity data:
No effect up to the limit of solubility. Leuciscus idus (Golden orfe) 48 h LC50 > 1,000 mg/l (nominal concentrations reported, Water accommodated fraction was tested.)

Aquatic invertebrates:
No effect up to the limit of solubility. Daphnia magna (Water flea) 47 h EC50 > 32 mg/l (nominal concentrations reported, Water accommodated fraction was tested.)
Slightly harmful to daphnia 48 h EC50 > 4.8 mg/l (No effect up to the limit of solubility.)

Algae:
No effect up to the limit of solubility. Scenedesmus capricornutum (fresh water algae) 72 h NOEC > 0.9 mg/l (nominal concentrations reported, Water accommodated fraction was tested.)

Microorganisms:
No effect up to the limit of solubility. Pseudomonas putida 18 h EC10 = 883 mg/l (nominal concentrations reported, Water accommodated fraction was tested.)

Data for Sulfur (7704-34-9)

Aquatic toxicity data:
No effect up to the limit of solubility. Oncorhynchus mykiss (rainbow trout), Bluegill sunfish 96 h LD50 > 0.005 mg/l

Aquatic invertebrates:
No effect up to the limit of solubility. Daphnia magna (Water flea) 48 h EC50 > 0.005 mg/l

Algae:
No effect up to the limit of solubility. Algae 72 h NOEC > 0.005 mg/l

Microorganisms:
Activated sludge 3 h EC50 = 1,900 mg/l

Chronic toxicity to aquatic invertebrates:
Practically nontoxic. Daphnia magna (Water flea) 21 d NOEC > 100 mg/l (Nominal concentration)

Chronic toxicity to aquatic plants:
No effect up to the limit of solubility. Algae 72 d NOEC > 0.005 mg/l

Terrestrial toxicity data:
Practically nontoxic. Eisenia fetida (earthworms) 14 d NOEC > 1,000 mg/kg

13. DISPOSAL CONSIDERATIONS

Waste disposal:
Disposal via incineration is recommended. Dispose of in accordance with federal, state and local regulations. Consult a regulatory specialist to determine appropriate state or local reporting requirements, for assistance in waste characterization and/or hazardous waste disposal and other requirements listed in pertinent environmental permits. Note: Chemical additions to, processing of, or otherwise altering this material may make this waste management information incomplete, inaccurate, or otherwise inappropriate. Furthermore, state and local waste disposal requirements may be more restrictive or otherwise different from federal laws and regulations.

14. TRANSPORT INFORMATION

US Department of Transportation (DOT): not regulated

International Maritime Dangerous Goods Code (IMDG): not regulated

15. REGULATORY INFORMATION

Chemical Inventory Status

US. Toxic Substances Control Act	TSCA	The components of this product are all on the TSCA Inventory.
Canadian Domestic Substances List (DSL)	DSL	All components of this product are on the Canadian DSL
China. Inventory of Existing Chemical Substances in China (IECSC)	IECSC (CN)	Conforms to
Japan. ENCS - Existing and New Chemical Substances Inventory	ENCS (JP)	Conforms to
Japan. ISHL - Inventory of Chemical Substances	ISHL (JP)	Conforms to
Korea. Korean Existing Chemicals Inventory (KECI)	KECI (KR)	Conforms to
Philippines Inventory of Chemicals and Chemical Substances (PICCS)	PICCS (PH)	The mixture contains a polymer. The monomers for this polymer have been notified.
Australia Inventory of Chemical Substances (AICS)	AICS	Conforms to

United States – Federal Regulations

SARA Title III – Section 302 Extremely Hazardous Chemicals:
The components in this product are either not SARA Section 302 regulated or regulated but present in negligible concentrations.

SARA Title III - Section 311/312 Hazard Categories:
Acute Health Hazard

SARA Title III – Section 313 Toxic Chemicals:
This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) - Reportable Quantity (RQ):

The components in this product are either not CERCLA regulated, regulated but present in negligible concentrations, or regulated with no assigned reportable quantity.

United States – State Regulations

New Jersey Right to Know

Chemical name	CAS-No.
Sulfur	7704-34-9

Pennsylvania Right to Know

Chemical name	CAS-No.
Phenol, 4-(1,1-dimethylpropyl)-, polymer with sulfur chloride (S2Cl2)	68555-98-6
Octadecanoic acid	57-11-4
Sulfur	7704-34-9
Hydrochloric acid	7647-01-0

Pennsylvania Right to Know – Environmentally Hazardous Substance(s)

Chemical name	CAS-No.
Hydrochloric acid	7647-01-0

California Prop. 65
This product does not contain any chemicals known to the State of California to cause cancer, birth defects, or any other reproductive defects.

16. OTHER INFORMATION

Full text of H-Statements referred to under sections 2 and 3.
H315 Causes skin irritation.
H317 May cause an allergic skin reaction.

Latest Revision(s):

Reference number:	200005543
Date of Revision:	12/04/2017
Date Printed:	12/05/2017

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when such product is used in combination with other materials or in any process. The user should thoroughly test any application before commercialization. Nothing contained herein constitutes a license to practice under any patent and it should not be construed as an inducement to infringe any patent and the user is advised to take appropriate steps to be sure that any proposed use of the product will not result in patent infringement. See SDS for Health & Safety Considerations.

Arkema has implemented a Medical Policy regarding the use of Arkema products in Medical Devices applications that are in contact with the body or circulating bodily fluids (http://www.arkema.com/en/social-responsibility/responsible-product-management/medical-device-policy/index.html) Arkema has designated Medical grades to be used for such Medical Device applications. Products that have not been designated as Medical grades are not authorized by Arkema for use in Medical Device applications that are in contact with the body or circulating bodily fluids. In addition, Arkema strictly prohibits the use of any Arkema products in Medical Device applications that are implanted in the body or in contact with bodily fluids or tissues for greater than 30 days. The Arkema trademarks and the Arkema name shall not be used in conjunction with customers' medical devices, including without limitation, permanent or temporary implantable devices , and customers shall not represent to anyone else, that Arkema allows, endorses or permits the use of Arkema products in such medical devices.
It is the sole responsibility of the manufacturer of the medical device to determine the suitability (including biocompatibility) of all raw materials, products and components, including any medical grade Arkema products, in order to ensure that the final end-use product is safe for its end use; performs or functions as intended; and complies with all applicable legal and regulatory requirements (FDA or other national drug agencies) It is the sole responsibility of the manufacturer of the medical device to conduct all necessary tests and inspections and to evaluate the medical device under actual end-use requirements and to adequately advise and warn purchasers, users, and/or learned intermediaries (such as physicians) of pertinent risks and fulfill any postmarket surveillance obligations. Any decision regarding the appropriateness of a particular Arkema material in a particular medical device should be based on the judgment of the manufacturer, seller, the competent authority, and the treating physician.