



THE HANSON GROUP, LLC
GOOD PEOPLE, GREAT SCIENCE

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SAFETY DATA SHEET

AO-1010

1. Substance/preparation and company name

Trade name: AO-1010

Company:

THE HANSON GROUP, LLC

3044 Adriatic Court

Peachtree Corners, GA 30071

TEL: 770-495-9554 FAX: 770-495-9449

Emergency telephone number: Chemtrec 800-424-9300

Chemical name: Pentaerythritol tetrakis(3-(3,5-di-tert-butyl-4-hydroxyphenyl)propionate)

CAS NO.: 6683-19-8

EC NO. : 229-722-6

REACH A registration number is not available for this substance as the substance or its uses are exempted from registration, the annual tonnage does not require a registration or the registration is envisaged for a later registration deadline.

2. Hazard identification

According to Regulation 2012 OSHA Hazard Communication Standard; 29 CFR Part 1910.1200

Classification of the product: May form combustible dust concentration in the air

LABEL ELEMENTS

Signal Word:

Warning

3. Composition/Information on ingredients

According to Regulation 2012 OSHA Hazard Communication Standard; 29 CFR Part 1910.1200: Under the referenced regulation, this product does not contain any components classified for health hazards above the relevant cut off value.

4. First aid measures

If inhaled:

Remove to fresh air and summon medical help if respiratory irritation develops or if breathing becomes difficult.

On skin contact:

Wipe away excess material with dry towel and then wash affected areas with plenty of water for several minutes. Get medical attention immediately if irritation occurs.

On contact with eyes:

Immediately wash affected eyes for several minutes under running water with eyelids held open. Get medical attention immediately if irritation occurs.

If swallowed:

Wash out mouth with water and then drink plenty of water and summon physician immediately. Do not give anything by mouth to an unconscious or convulsing person.

5. Fire fighting and measures

Extinguishing media

Suitable extinguishing media: dry powder, carbon dioxide, alcohol-resistant foam

Unsuitable extinguishing media for safety reasons: water jet

Special hazards arising from the substance or mixture.

Hazards during firefighting: harmful vapors, Evolution of fumes/fog. The substances/groups of substances mentioned can be released in case of fire.

Advice for fire-fighters

Protective equipment for firefighting: Firefighters should be equipped with self-contained breathing apparatus and turn-out gear.

Further information:

Dusty conditions may ignite explosively in the presence of an ignition source causing flash fire.

6. Accidental release measures

Further accidental release measures: Avoid dispersal of dust in the air (i.e., clearing dust surfaces with compressed air). Avoid the formation and build-up of dust - danger of dust explosion. Dust in sufficient concentration can result in an explosive mixture in air. Handle to minimize dusting and eliminate open flame and other sources of ignition.

Personal precautions, protective equipment, and emergency procedures: Avoid dust formation. Use personal protective clothing.

Environmental precautions: Contain contaminated water/firefighting water. Do not discharge into drains/surface waters/groundwater.

Methods and material for containment: Non-sparking tools should be used.

7. Handling and storage

Handling precautions: Provide appropriate exhaust ventilation at places where dust is formed as breathing must be protected when large quantities are decanted.

Closed containers should only be opened in well-ventilated areas. Avoid dust formation. Do not use any sparking tools.

Protection against fire and explosion:

Avoid dust formation. Dust in sufficient concentration can result in an explosive mixture in air. Handle to minimize dusting and eliminate open flame and other sources of ignition. Routine housekeeping should be instituted to ensure that dusts do not accumulate on surfaces. Dry powders can build static

electricity charges when subjected to the friction of transfer and mixing operations. Provide adequate precautions, such as electrical grounding and bonding, or inert atmospheres. Refer to NFPA 654, Standard for the Prevention of Fire and Dust Explosions from the Manufacturing, Processing, and Handling of Combustible Particulate Solids (2013 Edition) for safe handling.

Dust explosion class: Dust explosion class 2 (Kst-value 200 up to 300 bar m s⁻¹).

Conditions for safe storage: Store in cool place. Keep container tightly closed in a dry and well-ventilated area.

8. Exposure controls and personal protection

Advice on system design:

It is recommended that all dust control equipment such as local exhaust ventilation and material transport systems involved in handling of this product contain explosion relief vents or an explosion suppression system or an oxygen deficient environment. Ensure that dust-handling systems (such as exhaust ducts, dust collectors, vessels, and processing equipment) are designed in a manner to prevent the escape of dust into the work area (i.e., there is no leakage from the equipment). Use only appropriately classified electrical equipment and powered industrial trucks.

Personal protective equipment

Respiratory protection: Respiratory protection may not be required under normal operating conditions if adequate ventilation is provided.

Hand protection: Wear chemical resistant protective gloves.

Eye protection: Safety glasses with side-shields.

Body protection: Body protection must be chosen based on level of activity and exposure.

General safety and hygiene measures: Wear protective clothing as necessary to minimize contact. Handle in accordance with good industrial hygiene and safety practice. Handle in accordance with good industrial hygiene and safety practice.

9. Physical and chemical properties

Physical and chemical properties

Information on basic physical and chemical properties

- a) Appearance Form: powder Color: white
- b) Odor no data available
- c) Odor Threshold no data available
- d) pH no data available
- e) Melting point/freezing point Melting point/range: 115 - 125 °C - dec.
- f) Initial boiling point and boiling range 281 °C at 1.013 hPa - OECD Test Guideline 103
- g) Flash point no data available
- h) Evaporation rate no data available
- i) Flammability (solid, gas) no data available
- j) Upper/lower flammability or explosive limits no data available
- k) Vapor pressure no data available
- l) Vapor density no data available
- m) Relative density 1,116 g/cm³ at 20 °C
- n) Water solubility no data available
- o) Partition coefficient: noctanol/water no data available
- p) Auto-ignition temperature no data available

- q) Decomposition temperature no data available
r) Viscosity no data available
s) Explosive properties no data available
t) Oxidizing properties no data available
9.2 Other safety information no data available Specific gravity: ca. 1.03 (H₂O)

10. Stability and reactivity

Stability and Reactivity

Reactivity: No hazardous reactions if stored and handled as prescribed/indicated.

Corrosion to metals: Corrosive effects to metal are not anticipated.

Oxidizing properties: Based on its structural properties the product is not classified as oxidizing.

Dust explosivity characteristics:

Kst: 210 m.bar/s

Revaluation 2015

Dust explosion class: Dust explosion class 2 (Kst-value 200 up to 300 bar m s⁻¹) (St 2)

Chemical stability The product is stable if stored and handled as prescribed/indicated.

Possibility of hazardous reactions

The product is chemically stable.

Dust explosion hazard.

Conditions to avoid: Avoid dust formation. Avoid deposition of dust. Avoid all sources of ignition: heat, sparks, open flame. Avoid electro-static charge.

Incompatible materials: strong acids, strong bases, strong oxidizing agents

Hazardous decomposition products

Decomposition products: Hazardous decomposition products: No hazardous decomposition products if stored and handled as prescribed/indicated.

Thermal decomposition: > 350 °C.

11. Toxicological information

Primary routes of exposure

Routes of entry for solids and liquids are ingestion and inhalation but may include eye or skin contact. Routes of entry for gases include inhalation and eye contact. Skin contact may be a route of entry for liquefied gases.

Acute Toxicity/Effects

Acute toxicity Assessment of acute toxicity: Virtually nontoxic after a single ingestion. Virtually nontoxic after a single skin contact. Virtually nontoxic by inhalation.

Oral

Type of value: LD50

Species: rat (male)

Value: > 5,000 mg/kg (OECD Guideline 423)

Inhalation

Type of value: LC50

Species: rat (male/female)

Value: > 1.95 mg/l (similar to OECD guideline 403)

Exposure time: 4 h

An aerosol was tested.
No mortality was observed.

Dermal

Type of value: LD50
Species: rat
Value: > 3,160 mg/kg (other)

Assessment other acute effects

Assessment of STOT single:

Based on the available information there is no specific target organ toxicity to be expected after a single exposure.

Irritation / corrosion

Assessment of irritating effects: Not irritating to eyes and skin.

Skin

Species: rabbit
Result: non-irritant
Method: OPP 81-5 (EPA-Guideline)

Eye

Species: rabbit
Result: non-irritant
Method: similar to OECD guideline 405

Sensitization

Assessment of sensitization: Skin sensitizing effects were not observed in animal studies.

Maurer optimization test

Species: guinea pig
Result: Non-sensitizing.
Method: similar to OECD guideline 406

Aspiration Hazard

No aspiration hazard expected.

Chronic Toxicity/Effects

Repeated dose toxicity

Assessment of repeated dose toxicity: No substance-specific organ toxicity was observed after repeated administration to animals.

Repeated oral uptake of the substance did not cause substance-related effects.

Genetic toxicity

Assessment of mutagenicity: No mutagenic effect was found in various tests with bacteria and mammals.

The substance was not genotoxic in a test with mammals.

Carcinogenicity

Assessment of carcinogenicity: In long-term studies in rats and mice in which the substance was given by feed, a carcinogenic effect was not observed.

Reproductive toxicity

Assessment of reproduction toxicity: The results of animal studies gave no indication of a fertility impairing effect.

Teratogenicity

Assessment of teratogenicity: No indications of a developmental toxic / teratogenic effect were seen in animal studies.

12. Ecological information

Toxicity to fish static test LC50 - Danio rerio (zebra fish) - > 100 mg/l - 96 h (OECD Test Guideline 203) Toxicity to daphnia and other aquatic invertebrates Immobilization EC50 - Daphnia magna (Water flea) - > 86 mg/l - 24 h (OECD Test Guideline 202) Toxicity to algae static test EC50 - Desmodesmus subspicatus (Scenedesmus subspicatus) - > 100 mg/l - 72 h Toxicity to bacteria Respiration inhibition IC50 - Sludge Treatment - > 100 mg/l - 3 h (OECD Test Guideline 209)

Persistence and degradability Biodegradability aerobic - Exposure time 28 d Result: 5 % - Not biodegradable. (OECD Test Guideline 301B)

Bioaccumulative potential no data available

Mobility in soil no data available

Results of PBT and vPvB assessment PBT/vPvB assessment not available as chemical safety assessment not required/not conducted.

Other adverse effects no data available.

13. Disposal considerations

Waste disposal of substance: Do not discharge into drains/surface waters/groundwater. Dispose of in accordance with national, state and local regulations.

Container disposal: Dispose of in accordance with national, state and local regulations. Recommend crushing, puncturing or other means to prevent unauthorized use of used containers.

14. Transport information

Land transport

USDOT - Not classified as a dangerous good under transport regulations.

Sea transport

IMDG - Not classified as a dangerous good under transport regulations

Air transport

IATA/ICAO - Not classified as a dangerous good under transport regulations.

15. Regulatory information

Federal Regulations

Registration status:

Cosmetic TSCA, US released / exempt

Chemical TSCA, US released / listed

EPCRA 311/312 (Hazard categories): Refer to SDS section 2 for GHS hazard classes applicable for this product.

Safe Drinking Water & Toxic Enforcement Act, CA Prop. 65:

WARNING: This product can expose you to chemicals including METHANOL, which is known to the State of California to cause birth defects or other reproductive harm. For more information, go to www.P65Warnings.ca.gov.

NFPA Hazard codes:

Health: 0 Fire: 2 Reactivity: 0 Special:

HMIS III rating

Health: 0 Flammability: 2 Physical hazard: 0

16. Other information

Shelf life: 2 years minimum in sealed containers

The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product regarding appropriate safety precautions. It does not represent any guarantee of the properties of the product. We shall not be held liable for any damage resulting from handling or from contact with the above product.