SAFETY DATA SHEET

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SECTION 1. IDENTIFICATION

Product Identifier: (4N) 99.99% Cerium Particles

Product Code: CE-M-04-PTCS

CAS Number: 7440-45-1

Relevant identified uses of the substance: Scientific research and development

Supplier details:

American Elements
10884 Weyburn Ave.
Los Angeles, CA 90024
Tel: +1 310-208-0551
Fax: +1 310-208-0351
Emergency telephone number:
+1 800-424-9300

SECTION 2. HAZARDS IDENTIFICATION

Classification of the substance or mixture
Classification according to Regulation (EC) No 1272/2008
GHS02 Flame
Flam. Sol. 1 H228 Flammable solid.
Water-react. 2 H261 In contact with water releases flammable gas.
Classification according to Directive 67/548/EEC or Directive 1999/45/EC
F; Highly flammable
R11-15: Highly flammable. Contact with water liberates extremely flammable gases.
Information concerning particular hazards for human and environment:
N/A
Hazards not otherwise classified
No data available.
Label elements
Labelling according to Regulation (EC) No 1272/2008
The substance is classified and labeled according to the CLP regulation.
Hazard pictograms



GHS02

Signal word: Danger
Hazard statements
H228 Flammable solid.
H261 In contact with water releases flammable gas.
Precautionary statements
P210 Keep away from heat/sparks/open flames/hot surfaces. No smoking.
P231+P232 Handle under inert gas. Protect from moisture.
P280 Wear protective gloves/protective clothing/eye protection/face protection.
P370+P378 In case of fire: Use for extinction: CO2, sand, extinguishing powder.
P402+P404 Store in a dry place. Store in a closed container.
P501 Dispose of contents/container in accordance with local/regional/national/international regulations.
WHMIS classification
B6 - Reactive flammable material
Classification system
HMIS ratings (scale 0-4)
(Hazardous Materials Identification System)
HEALTH
FIRE
REACTIVITY
1
3
3
Health (acute effects) = 1
Flammability = 3
Physical Hazard = 3
Other hazards
Results of PBT and vPvB assessment:
PBT: N/A.
vPvB: N/A.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substances
CAS No. / Substance Name:
7440-45-1 Cerium
Identification number(s):
EC number: 231-154-9

SECTION 4. FIRST AID MEASURES

Description of first aid measures
If inhaled:
Supply fresh air. If not breathing, provide artificial respiration. Keep patient warm.
Seek immediate medical advice.
In case of skin contact:
Immediately wash with soap and water; rinse thoroughly.
Seek immediate medical advice.
In case of eye contact:
Rinse opened eye for several minutes under running water. Consult a physician.
If swallowed:

Seek medical treatment.
Information for doctor
Most important symptoms and effects, both acute and delayed
No information available.
Indication of any immediate medical attention and special treatment needed
No information available.

SECTION 5. FIREFIGHTING MEASURES

Extinguishing media
Suitable extinguishing media
Special powder for metal fires. Do not use water.
For safety reasons unsuitable extinguishing media
Water
Special hazards arising from the substance or mixture
If this product is involved in a fire, the following can be released:
Metal oxide fume
Advice for firefighters
Protective equipment:
Wear self-contained respirator.
Wear fully protective impervious suit.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures
Wear protective equipment. Keep unprotected persons away.
Ensure adequate ventilation
Keep away from ignition sources
Environmental precautions:
Do not allow material to be released to the environment without official permits.
Do not allow product to reach sewage system or any water course.
Do not allow to penetrate the ground/soil.
Methods and material for containment and cleanup:
Keep away from ignition sources.
Ensure adequate ventilation.
Do not flush with water or aqueous cleansing agents
Prevention of secondary hazards:
Keep away from ignition sources.
Reference to other sections
See Section 7 for information on safe handling
See Section 8 for information on personal protection equipment.
See Section 13 for disposal information.

SECTION 7. HANDLING AND STORAGE

Handling
Precautions for safe handling
Handle under dry protective gas.
Keep container tightly sealed.
Store in cool, dry place in tightly closed containers.

Ensure adequate ventilation.
Reacts violently with water
Information about protection against explosions and fires:
Protect against electrostatic charges.
Conditions for safe storage, including any incompatibilities
Storage
Requirements to be met by storerooms and receptacles:
Store in a cool location.
Information about storage in one common storage facility:
Store away from halogens.
Store away from air.
Store away from water/moisture.
Further information about storage conditions:
Store under dry inert gas.
Keep container tightly sealed.
Store in cool, dry conditions in well-sealed containers.
Protect from humidity and water.
Specific end use(s)
No information available.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Additional information about design of technical systems:
Properly operating chemical fume hood designed for hazardous chemicals and having an average face velocity of at least 100 feet per minute.
Control parameters
Components with limit values that require monitoring at the workplace:
The product does not contain any relevant quantities of materials with critical values that should be monitored at the workplace.
Additional information: No data
Exposure controls
Personal protective equipment
Follow typical general protective and industrial hygiene measures for handling chemicals.
Keep away from foodstuffs, beverages and feed.
Remove all soiled and contaminated clothing immediately.
Wash hands before breaks and at the end of work.
Breathing equipment:
Use suitable respirator when high concentrations are present.
Protection of hands:
Impervious gloves
Inspect gloves prior to use.
Suitability of gloves should be determined both by material and quality, the latter of which may vary by manufacturer.
Penetration time of glove material (in minutes)
No data available.
Eye protection:
Safety glasses
Full face protection
Body protection:
Protective work clothing.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties
Appearance:
Form: Powder
Color: Dark gray
Odor: Odorless
Odor threshold: No data available.
pH: N/A.
Melting point/range: 798 °C (1468 °F)
Boiling point/range: 3433 °C (6211 °F)
Sublimation temperature / start: No data available.
Flammability (solid, gas): Highly flammable.
Contact with water liberates extremely flammable gases.
Ignition temperature: No data available.
Decomposition temperature: No data available.
Auto igniting: No data available.
Danger of explosion: No data available.
Explosion limits:
Lower: No data available.
Upper: No data available.
Vapor pressure at 20 °C (68 °F): 0 hPa
Density at 20 °C (68 °F): 6.77 g/cm³ (56.496 lbs/gal)
Relative density: No data available.
Vapor density: N/A.
Evaporation rate: N/A.
Solubility in Water (H_2O):
Contact with water releases flammable gases
Partition coefficient (n-octanol/water): No data available.
Viscosity:
Dynamic: N/A.
Kinematic: N/A.
Other information
No further relevant information available

SECTION 10. STABILITY AND REACTIVITY

Reactivity
In contact with water releases flammable gases which may ignite spontaneously.
Chemical stability
Stable under recommended storage conditions.
Thermal decomposition / conditions to be avoided:
Decomposition will not occur if used and stored according to specifications.
Possibility of hazardous reactions
Contact with water releases flammable gases
Conditions to avoid
No information available.
Incompatible materials:
Air
Halogens
Water/moisture
Hazardous decomposition products:
Metal oxide fume

SECTION 11. TOXICOLOGICAL INFORMATION

Information on toxicological effects
Acute toxicity: N/A
LD/LC50 values that are relevant for classification: No data
Skin irritation or corrosion: May cause irritation
Eye irritation or corrosion: May cause irritation
Sensitization: No sensitizing effects known.
Germ cell mutagenicity: N/A
Carcinogenicity:
No classification data on carcinogenic properties of this material is available from the EPA, IARC, NTP, OSHA or ACGIH.
Reproductive toxicity: N/A
Specific target organ system toxicity - repeated exposure: N/A
Specific target organ system toxicity - single exposure: N/A
Aspiration hazard: N/A
Subacute to chronic toxicity: N/A
Additional toxicological information:
To the best of our knowledge the acute and chronic toxicity of this substance is not fully known.

SECTION 12. ECOLOGICAL INFORMATION

Toxicity
Aquatic toxicity:
No information available.
Persistence and degradability:
No information available.
Bioaccumulative potential:
No information available.
Mobility in soil:
No information available.
Additional ecological information:
General notes:
Do not allow material to be released to the
environment without official permits.
Do not allow undiluted product or large quantities to
reach ground water, water course or sewage system.
Avoid transfer into the environment.
Results of PBT and vPvB assessment:
PBT: N/A.
vPvB: N/A.
Other adverse effects
No information available.

SECTION 13. DISPOSAL CONSIDERATIONS

Waste treatment methods
Recommendation:
Consult state, local or national regulations to ensure proper disposal.
Uncleaned packagings:

Recommendation:
Disposal must be made according to official regulations.

SECTION 14. TRANSPORT INFORMATION

UN-Number
DOT, IMDG, IATA
UN3078
UN proper shipping name
DOT
Cerium
IMDG, IATA
CERIUM
Transport hazard class(es)
DOT
Class
4.3 Substances which, in contact with water, emit flammable gases.
Label
4.3
Class
4.3 (W2) Substances which, in contact with water, emit flammable gases
Label
4.3
IMDG, IATA
Class
4.3 Substances which, in contact with water, emit flammable gases.
Label
4.3
Packing group
DOT, IMDG, IATA
II
Environmental hazards:
N/A.
Special precautions for user
Warning: Substances which, in contact with water, emit flammable gases
EMS Number:
F-G,S-O
Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code
N/A.
Transport/Additional information:
DOT
Marine Pollutant (DOT):
No
UN "Model Regulation":
UN3078, Cerium, 4.3, II

SECTION 15. REGULATORY INFORMATION

Safety, health and environmental regulations/legislation specific for the substance or mixture
National regulations
All components of this product are listed in the U.S. Environmental Protection Agency Toxic

Substances Control Act Chemical substance Inventory.
All components of this product are listed on the Canadian Domestic Substances List (DSL).
SARA Section 313 (specific toxic chemical listings)
Substance is not listed.
California Proposition 65
Prop 65 - Chemicals known to cause cancer
Substance is not listed.
Prop 65 - Developmental toxicity
Substance is not listed.
Prop 65 - Developmental toxicity, female
Substance is not listed.
Prop 65 - Developmental toxicity, male
Substance is not listed.
Information about limitation of use:
For use only by technically qualified individuals.
Other regulations, limitations and prohibitive regulations
Substance of Very High Concern (SVHC) according to the REACH Regulations (EC) No. 1907/2006.
Substance is not listed.
The conditions of restrictions according to Article 67 and Annex XVII of the Regulation (EC) No 1907/2006 (REACH) for the manufacturing, placing on the market and use must be observed.
Substance is not listed.
Annex XIV of the REACH Regulations (requiring Authorisation for use)
Substance is not listed.
REACH - Pre-registered substances
Substance is listed.
Chemical safety assessment:
A Chemical Safety Assessment has not been carried out.

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16. OTHER INFORMATION

Safety Data Sheet according to Regulation (EC) No. 1907/2006 (REACH). 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 with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. American Elements shall not be held liable for any damage resulting from handling or from contact with the above product. See reverse side of invoice or packing slip for additional terms and conditions of sale. COPYRIGHT 1997-2022 AMERICAN ELEMENTS. LICENSED GRANTED TO MAKE UNLIMITED PAPER COPIES FOR INTERNAL USE ONLY.