

<u>Barium Dodecairon Nonadecaoxide</u>	<u>Pricing ></u>
<u>Barium Ferrite</u>	<u>Pricing ></u>
<u>Barium Ferrite Sputtering Target</u>	<u>Pricing ></u>
<u>Barium Iron Oxide</u>	<u>Pricing ></u>
<u>Barium Iron Oxide Nanoparticle Dispersion</u>	<u>Pricing ></u>
<u>Barium Iron Oxide Nanoparticles / Nanopowder</u>	<u>Pricing ></u>

InChI Key	BaFe ₉ O ₂₆
PubChem CID	16217742
MOL Number	MFCD00075637
EC No.	234-874-5
IUPAC Name	oxobarium; oxo (oxoferriooxy) iron
Belustein/Razays No.	N/A
SMILES	[O-][O-][O-][O-][O-][O-][O-][Ba+2].[Fe+3].[Fe+3].[Fe+3].[Fe+3].[Fe+3].[Fe+3].[Fe+3].[Fe+3].[Fe+3].[Fe+3].[Fe+3].[Fe+3].[Fe+3].[Fe+3]
Inch Identifier	InChi=1S/Ba.12Fe.19O(s)+2.12^+3.19^-2
Inchi Key	HPIYMVBXZPJVIVUHFFFAQYSAN

Signal Word	Warning
Hazard Statements	H302+H332
Hazard Codes	Xn
Precautionary Statements	P261-P264-P304+P340-P301+P312-P312-P501
Risk Codes	20/22
Safety Statements	26
RTECS Number	N/A
Transport Information	UN 1564 6.1/PG 3
WGK Germany	3
GHS Pictograms	<u>GHS07 Exclamation Point</u>

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SAFETY DATA SHEET

Date Accessed: 04/25/2024

Date Revised: 01/15/2022

SECTION 1. IDENTIFICATION

Product Identifiers: All applicable American Elements product codes for CAS #12047-11-9

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:

Domestic, North America +1 800-424-9300

International +1 703-527-3887

SECTION 2. HAZARDS IDENTIFICATION

Classification of the substance or mixture

Classification according to Regulation (EC) No
1272/2008

GHS07

Acute Tox. 4 H302 Harmful if swallowed.

Acute Tox. 4 H332 Harmful if inhaled.

Classification according to Directive 67/548/EEC or
Directive 1999/45/EC

Xn; Harmful

R20/22: Harmful by inhalation and if swallowed.

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



GHS07

Signal word

Warning

Hazard statements

H302+H332 Harmful if swallowed or if inhaled.

Precautionary statements

P261 Avoid breathing
dust/fume/gas/mist/vapors/spray.

P264 Wash thoroughly after handling.

P304+P340 IF INHALED: Remove person to fresh air
and keep comfortable for breathing.

P301+P312 IF SWALLOWED: Call a POISON
CENTER/doctor/.../if you feel unwell.

P312 Call a POISON CENTER/doctor/.../if you feel unwell.
P501 Dispose of contents/container in accordance with local/regional/national/international regulations.
WHMIS classification
D1B - Toxic material causing immediate and serious toxic effects
Classification system
HMIS ratings (scale 0-4)
(Hazardous Materials Identification System)
HEALTH
FIRE
REACTIVITY
2
0
1
Health (acute effects) = 2
Flammability = 0
Physical Hazard = 1
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:
12047-11-9 Barium dodecairon nonadecaoxide
(Barium iron oxide, barium ferrite)
Identification number(s):
EC number:
234-974-5
Index number:
056-002-00-7

SECTION 4. FIRST AID MEASURES

Description of first aid measures
If inhaled:
Supply patient with 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 data available
Indication of any immediate medical attention and special treatment needed
No data available

SECTION 5. FIREFIGHTING MEASURES

Extinguishing media
Suitable extinguishing agents
Product is not flammable. Use fire-fighting measures that suit the surrounding fire.
Special hazards arising from the substance or mixture
If this product is involved in a fire, the following can be released:
Barium oxide
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
Use personal protective equipment. Keep unprotected persons away.
Ensure adequate ventilation
Environmental precautions:
Do not allow material to be released to the environment without official permits.
Do not allow product to enter drains, sewage systems, or other water courses.
Do not allow material to penetrate the ground or soil.
Methods and materials for containment and cleanup:
Dispose of contaminated material as waste according to section 13.
Ensure adequate ventilation.
Prevention of secondary hazards:
No special measures required.
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

Keep container tightly sealed.

Store in cool, dry place in tightly closed containers.

Ensure good ventilation at the workplace.

Information about protection against explosions and fires:

The product is not flammable

Conditions for safe storage, including any incompatibilities

Requirements to be met by storerooms and receptacles:

No special requirements.

Information about storage in one common storage facility:

Store away from oxidizing agents.

Further information about storage conditions:

Keep container tightly sealed.

Store in cool, dry conditions in well-sealed containers.

Specific end use(s)

No data 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:

Barium, and soluble compounds, as Ba mg/m³

ACGIH TLV 0.5; Not classified as a human carcinogen

Austria MAK 0.5

Belgium TWA 0.5

Denmark TWA 0.5

Finland TWA 0.5

Germany MAK 0.5 (total dust)

Hungary 0.5-STEL

Ireland TWA 0.5

Korea TLV 0.5

Netherlands MAC-TGG 0.5
Norway TWA 0.5
Poland TWA 0.5; 1.5-STEL
Sweden TWA 0.5
Switzerland MAK-W 0.5
United Kingdom LTEL 0.5
USA PEL 0.5
Additional information:
No data
Exposure controls
Personal protective equipment
Follow typical protective and hygienic practices 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.
Maintain an ergonomically appropriate working environment.
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
Body protection:
Protective work clothing

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties
Appearance:
Form: Powder or solid in various forms
Color: Black
Odor: No data available
Odor threshold: No data available.
pH: N/A
Melting point/Melting range: >1315 °C (>2399 °F)
Boiling point/Boiling range: No data available
Sublimation temperature / start: No data available
Flash point: N/A
Flammability (solid, gas)
No data available.
Ignition temperature: No data available
Decomposition temperature: No data available

Autoignition: No data available.
Danger of explosion: Product does not present an explosion hazard.
Explosion limits:
Lower: No data available
Upper: No data available
Vapor pressure: N/A
Density: No data available
Relative density
No data available.
Vapor density
N/A
Evaporation rate
N/A
Solubility in Water (H₂O): No data available
Partition coefficient (n-octanol/water): No data available.
Viscosity:
Dynamic: N/A
Kinematic: N/A
Other information
No data available

SECTION 10. STABILITY AND REACTIVITY

Reactivity
No data available
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
No dangerous reactions known
Conditions to avoid
No data available
Incompatible materials:
Oxidizing agents
Hazardous decomposition products:
Carbon monoxide and carbon dioxide
Barium oxide
Metal oxide fume

SECTION 11. TOXICOLOGICAL INFORMATION

Information on toxicological effects
Acute toxicity:
Harmful if inhaled.
Harmful if swallowed.
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:
No effects known.
Carcinogenicity:
ACGIH A4: Not classifiable as a human carcinogen:
Inadequate data on which to classify the agent in
terms of its carcinogenicity in humans and/or animals.
Reproductive toxicity:
No effects known.
Specific target organ system toxicity - repeated
exposure:
No effects known.
Specific target organ system toxicity - single
exposure:
No effects known.
Aspiration hazard:
No effects known.
Subacute to chronic toxicity:
Barium compounds may cause severe gastroenteritis,
including abdominal pain, vomiting and
diarrhea, tremors, faintness, paralysis of the arms and
legs, and slow or irregular heartbeat. Severe cases
may produce collapse and death due to respiratory
failure. Soluble barium compounds are more likely to
cause these effects than insoluble compounds.
Inhalation of fumes may cause sore throat, coughing,
labored breathing, and irritation of the respiratory tract
as well as the above symptoms.
Subacute to chronic toxicity:
No effects known.
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 data available
Persistence and degradability
No data available
Bioaccumulative potential
No data available
Mobility in soil
No data available
Additional ecological information:
Do not allow material to be released to the

environment without official permits.
Do not allow undiluted product or large quantities to reach groundwater, water courses, or sewage systems.
Avoid transfer into the environment.
Results of PBT and vPvB assessment
PBT:
N/A
vPvB:
N/A
Other adverse effects
No data available

SECTION 13. DISPOSAL CONSIDERATIONS

Waste treatment methods
Recommendation
Consult official 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
UN1564
UN proper shipping name
DOT
Barium compounds, n.o.s. (Barium dodecairon nonadecaoxide)
IMDG, IATA
BARIUM COMPOUND, N.O.S. (Barium dodecairon nonadecaoxide)
Transport hazard class(es)
DOT
Class
6.1 Toxic substances.
Label
6.1
Class
6.1 (T5) Toxic substances
Label
6.1
IMDG, IATA
Class
6.1 Toxic substances.
Label
6.1

Packing group
DOT, IMDG, IATA
III
Environmental hazards: N/A
Special precautions for user
Warning: Toxic substances
EMS Number: F-A,S-A
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":
UN1564, Barium compounds, n.o.s. (Barium
dodecairon nonadecaoxide), 6.1, III

SECTION 15. REGULATORY INFORMATION

Safety, health and environmental
regulations/legislation specific for the substance or
mixture
National regulations
This product is not listed in the U.S. Environmental
Protection Agency Toxic Substances
Control Act Chemical Substance Inventory. Use of
this product is restricted to research and development
only. This product must be used by or directly under
the supervision of a technically qualified individual as
defined by TSCA. This product must not be used for
commercial purposes
or in formulations for commercial purposes.
SARA Section 313 (specific toxic chemical listings)
12047-11-9 Barium dodecairon nonadecaoxide
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.
This product contains barium and is subject to the
reporting requirements of section 313 of the
Emergency Planning and Community Right to Know
Act of 1986 and 40CFR372.
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.

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
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