

Safety data sheet
according to 1907/2006/EC, Article 31

Printing date: 19.05.2015

Version number 10

Revision: 19.05.2015

SECTION 1: Identification of the substance/mixture and of the company/undertaking

- **1.1 Product identifier**
- **Product name:** Ferro Cerium
Lighter Flints
- **REACH-Registration number:**
Cerium: 01-2119480148-35-0000
Lanthanum: 01-2119971281-39-0000
Iron: 01-2119462838-24-0360
- **1.2 Relevant identified uses of the substance or mixture and uses advised against**
- **Application of the substance / the preparation:**
Raw material for industrial applications.
Lighter flints
- **1.3 Details of the supplier of the safety data sheet**
- **Manufacturer/Supplier:**
Light My Fire Sweden AB
Västkustvägen 7
21124 Malmö
Sweden
Telefon: +46 (0) 40 660 16 60
www.lightmyfire.com
- **Further information obtainable from:** info@lightmyfire.com
- **1.4 Emergency telephone number:**
+43 (0) 1 406 4343-0 (Austrian Poison Information Centre)

SECTION 2: Hazards identification

- **2.1 Classification of the substance or mixture**
- **Classification according to Regulation (EC) No 1272/2008**
The product is not classified according to the CLP regulation.
- **Classification according to Directive 67/548/EEC or Directive 1999/45/EC** Void
- **Information concerning particular hazards for human and environment:**
No hazards to be particularly mentioned. Please note the information of this Material Safety Data Sheet.
- **Classification system:**
The classification is according to the latest editions of the EU-lists, and extended by company and literature data.
- **2.2 Label elements**
- **Labelling according to Regulation (EC) No 1272/2008** Void
- **Hazard pictograms** Void
- **Signal word** Void
- **Hazard statements** Void
- **Additional information:**
Safety data sheet available on request.
- **2.3 Other hazards**
Lighter flints in the delivered form (cylindrical pieces) have no special risk.
Moderate risk of explosions of fine material.
Dust can have irritant effects to eyes and respiratory organs.
Inappropriate use of lighter flints (e.g. use for sparking effects) can lead to fire and burn injuries.
- **Results of PBT and vPvB assessment**
- **PBT:** Not applicable.

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· vPvB: Not applicable.

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SECTION 3: Composition/information on ingredients

· 3.1 Chemical characterisation: Substances

Ferro Cerium
Lighter Flints

· 3.2 Chemical characterisation: Mixtures

· Components:

	Mischmetal (Rare Earth Metals) R10 	> 76%
CAS: 7439-89-6 EINECS: 231-096-4 Reg.nr.: 01-2119462838-24-0360	Iron	~ 20%
CAS: 7439-95-4 EINECS: 231-104-6 Index number: 012-001-00-3	Magnesium  	~ 2%

· Additional information:

Rare Earth Mischmetal contains:

Cerium (EINECS: 231-154-9; CAS: 7440-45-1)

Lanthanum (EINECS: 231-099-0; CAS: 7439-91-0)

SECTION 4: First aid measures

· 4.1 Description of first aid measures



· General information:

When used and handled according to specifications, the product does not have any harmful effects to our experience and the information provided to us.

· After inhalation:

Supply fresh air.

Seek medical treatment in case of complaints.

· After skin contact:

Immediately wash with water and soap and rinse thoroughly.

If skin irritation continues, consult a doctor.

· After eye contact:

Rinse opened eye for several minutes under running water. If symptoms persist, consult a doctor.

· After swallowing: Drink plenty of water and provide fresh air. Call for a doctor immediately.

· 4.2 Most important symptoms and effects, both acute and delayed

No further relevant information available.

· Information for doctor: Treat symptomatically.

· 4.3 Indication of any immediate medical attention and special treatment needed

No further relevant information available.

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SECTION 5: Firefighting measures

- **5.1 Extinguishing media**
- **Suitable extinguishing agents:**
 - Dry sand
 - Fire-extinguishing powder
 - Special powder for metal fires. Do not use water.
- **For safety reasons unsuitable extinguishing agents:**
 - Water
 - Carbon dioxide
 - Halogen extinguisher
- **5.2 Special hazards arising from the substance or mixture**
 - In case of fire, the following can be released:
 - Toxic metal oxide smoke
- **5.3 Advice for firefighters**
- **Protective equipment:**
 - Wear self-contained respiratory protective device.
 - Wear fully protective suit.
- **Additional information:**
 - Cover all exposed surfaces with sand, salt or metal-extinguisher powder. Material should not be mixed until the material has been allowed to cool down.
 - Dispose of fire debris and contaminated fire fighting water in accordance with official regulations.

SECTION 6: Accidental release measures

- **6.1 Personal precautions, protective equipment and emergency procedures**
 - Avoid formation of dust.
 - Keep away from ignition sources.
- **6.2 Environmental precautions:** No special measures required.
- **6.3 Methods and material for containment and cleaning up:**
 - Pick up mechanically.
 - Send for recovery or disposal in suitable receptacles.
 - Use non-sparking tools, because the rubbing of the product with metallic objects may cause a formation of sparks.
- **6.4 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

- **7.1 Precautions for safe handling**
 - Prevent formation of dust.
 - When working with powdered material it is recommended to use a dry inert gas atmosphere and a local explosion proof exhaust system.
- **7.2 Information about fire - and explosion protection:**
 - Keep ignition sources away - Do not smoke.
 - Keep away from oxidizing agents.
 - Finely distributed particles may be flammable or explosive.

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- **Conditions for safe storage, including any incompatibilities**
- **Storage:**
- **Requirements to be met by storerooms and receptacles:**
Keep container tightly sealed.
Store in dry conditions.
- **Information about storage in one common storage facility:**
Store away from flammable substances.
Do not store together with acids.
Store away from oxidising agents.
Store away from water.
- **Further information about storage conditions:**
Protect from contamination.
Never store lighter flints uncontrolled.
- **7.3 Specific end use(s)** No further relevant information available.

SECTION 8: Exposure controls/personal protection

- **Additional information about design of technical facilities:**
Ensure good ventilation/exhaustion at the workplace.
- **8.1 Control parameters**
- **Ingredients with limit values that require monitoring at the workplace:**
The product does not contain any relevant quantities of materials with critical values that have to be monitored at the workplace.

· DNELs

7440-45-1 Cerium

Oral	DNEL system. effects	3.04 mg/kg bw/day (Human (consumer))
Dermal	DNEL system. effects	3.04 mg/kg bw/day (Human (consumer))
		5.07 mg/kg bw/day (Human (worker))
Inhalative	DNEL system. effects	6 mg/m ³ (Human (consumer))
		10 mg/m ³ (Human (worker))

7439-91-0 Lanthanum

Oral	Acute syst. effects	- (General Population) No hazard identified
	LT syst. effects	- (General Population) No hazard identified
Dermal	Acute local effects	- (General Population) No hazard identified
		- (Human (worker)) No hazard identified
	Acute syst. effects	- (General Population) No hazard identified
	LT local effects	- (General Population) No hazard identified
		- (Human (worker)) No hazard identified

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Inhalative	LT syst. effects	- (General Population) No hazard identified - (Human (worker)) No hazard identified
	Acute local effects	- (General Population) No hazard identified
	Acute syst. effects	- (General Population) No hazard identified
	DNEL acute effects	- (Human (worker)) No hazard identified
	DNEL local effects	- (Human (worker)) No hazard identified
	LT local effects	- (General Population) No hazard identified
Irritation of eyes	LT syst. effects	- (General Population) No hazard identified - (Human (worker)) No hazard identified
	Local effects	- (General Population) No hazard identified - (Human (worker)) No hazard identified

· **PNECs****7440-45-1 Cerium**

PNEC STP	60.9 mg/l (Microorganisms (activated sludge)) (OECD 209 (Activated Sludge, Resp. Inhibition Test)) Test material: Dicerium tricarbonate Grutzner I (2006)
PNEC freshwater	0.6 mg/l (Freshwater organisms) Extrapolation method: assessment factor
PNEC marine water	60.9 µg/l (Marine organisms) Extrapolation method: assessment factor

7439-91-0 Lanthanum

PNEC	- (-) No hazard identified
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· **Additional information:** The lists valid during the making were used as basis.· **8.2 Exposure controls**· **Personal protective equipment:**· **General protective and hygienic measures:**

Do not eat, drink, smoke or sniff while working.

Wash hands before breaks and at the end of work.

· **Respiratory protection:** Not necessary if room is well-ventilated.

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· **Protection of hands:**



Protective gloves

· **Material of gloves** Wear gloves for the protection against mechanical hazards according to EN 388.

· **Penetration time of glove material**

The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.

· **Eye protection:**



Safety glasses

· **Body protection:** Protective work clothing

SECTION 9: Physical and chemical properties

· **9.1 Information on basic physical and chemical properties**

· **General Information**

· **Appearance:**

Form:	Solid lumpy
Colour:	Grey Different according to colouring

· **Odour:** Odourless

· **Odour threshold:** Not applicable

· **pH-value:** Not applicable

· **Melting point/Melting range:** ca. 700 °C

· **Boiling point/Boiling range:** ca. 1100 °C

· **Flash point:** Not applicable

· **Flammability (solid, gaseous):** Flammable.

· **Ignition temperature:** Solid material (flints): 400 °C
Powder: 195 - 280 °C

· **Self-igniting:** Product is not selfigniting.

· **Danger of explosion:** Lighter flints: not applicable.
Powder: not determined.

· **Explosion limits:**

Lower: Not determined

Upper: Not determined

· **Oxidising properties**

Lumpy: none
In form of powder: yes.

· **Density:** 6.5 g/cm³

· **Solubility in / Miscibility with
water:**

Insoluble.

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- **Partition coefficient (n-octanol/water):** Not determined
- **Viscosity:**
 - Dynamic:** Not determined
 - Kinematic:** Not determined
- **9.2 Other information** No further relevant information available.

SECTION 10: Stability and reactivity

- **10.1 Reactivity**
- **10.2 Chemical stability**
- **Thermal decomposition / conditions to be avoided:** Lumpy material is stable against corrosion.
- **10.3 Possibility of hazardous reactions**
Reacts with strong oxidising agents.
Reacts with water and acids.
- **10.4 Conditions to avoid** No further relevant information available.
- **10.5 Incompatible materials:**
Keep away from water.
Keep away from oxidising agents and acidic substances.
- **10.6 Hazardous decomposition products:** No dangerous decomposition products known.
- **Additional information:**
If ferro mischmetal gets inadvertently wet, put it on an absorptive material and dry it with warm air (not to hot).

SECTION 11: Toxicological information

- **11.1 Information on toxicological effects**
- **Acute toxicity:**

- **LD/LC50 values relevant for classification:**

7440-45-1 Cerium

Oral	LD50	> 5000 mg/kg (rat (Sprague-Dawley)) (EPA OPPTS 870.1100 (Acute Oral Toxicity)) Test material: Dicerium tricarbonate Lambert CE, Barnum EC, Shapiro R (1993)
	NOAEL	150 mg/kg bw/day (rat (Sprague-Dawley)) (OECD Guideline 422) Repeated dose toxicity oral Test material: Dicerium tricarbonate Target organs: digestive: stomach
Inhalative	LC50/4 h	5.05 mg/l (rat (wistar)) (OECD Guideline 403 (Acute Inhalation Toxicity)) Test material: Dicerium tricarbonate F. Duchosal (1993)

7439-91-0 Lanthanum

Oral	LD50	- mg/kg (-) Study technically not feasible
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	NOAEL	10648 ppm (rat (wistar)) (OECD Guideline 408; EU Method B.7) read-across from supporting substance(structural analogue or surrogate) Test material: lanthanum carbonate octahydrate 1126 mg/kg bw/day (rat (wistar - female)) (OECD Guideline 408; EU Method B.7) read-across from supporting substance(structural analogue or surrogate) Test material: lanthanum carbonate octahydrate 741 mg/kg bw/day (rat (wistar - male)) (OECD Guideline 408; EU Method B.7) read-across from supporting substance(structural analogue or surrogate) Test material: lanthanum carbonate octahydrate
Dermal	LD50	- mg/kg (-) Study technically not feasible
Inhalative	LC50	- mg/m ³ (-) Study technically not feasible
Irritation of skin	-	- (-) study technically not feasible
Irritation of eyes	-	- (-) study technically not feasible

7439-89-6 Iron

Oral	LD50	20000 mg/kg (Guinea pig) Lit.: Indian Journal of Pharmacy. Vol. 13, Pg. 240, 1951. 30000 mg/kg (Rat) Lit.: Indian Journal of Pharmacy. Vol. 13, Pg. 240, 1951.
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- **on the skin:** No data available.
- **on the eye:** No data available.
- **Sensitisation:** No sensitising effects known.
- **Other information (about experimental toxicology):** Caution - substance not yet fully tested.
- **Additional toxicological information:**
The product is not subject to classification according to the calculation method of the General EU Classification Guidelines for Preparations as issued in the latest version.
- **CMR effects (carcinogenicity, mutagenicity and toxicity for reproduction)** Not determined

SECTION 12: Ecological information

· 12.1 Toxicity

· Aquatic toxicity:

7440-45-1 Cerium

EC50/72h	> 100 mg/l (Desmodesmus subspicatus) (OECD Guideline 201 (Alga, Growth Inhibition Test)) Test material: Dicerium tricarbonate Bätscher Roger (2007)
LC50/48h	> 100 mg/l (Daphnia magna) (OECD Guideline 202; EU Method C.2) Test material: Dicerium tricarbonate Bätscher R (2007b)
LC50/96h	> 100 mg/l (Oncorhynchus mykiss) (OECD Guideline 203; EU Method C.1) Test material: Dicerium tricarbonate Bätscher R (2007a)

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7439-91-0 Lanthanum

EC50/48h - mg/l (Daphnia)
Study technically not feasible

EC50/72h - mg/l (Ag)
Study technically not feasible

- **12.2 Persistence and degradability** Not determined
- **12.3 Bioaccumulative potential** Not determined
- **12.4 Mobility in soil** No further relevant information available.
- **Additional ecological information:**
- **AOX-indication:** The product does not contain organically bounded halogens (AOX-free).
- **General notes:** Generally not hazardous for water
- **12.5 Results of PBT and vPvB assessment**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.
- **12.6 Other adverse effects** No further relevant information available.

SECTION 13: Disposal considerations

- **13.1 Waste treatment methods**
- **Recommendation**
Ferro Mischmetal tends to oxidize if they are stored for a longer time. The formed oxides are mostly available in form of powder. Powder and swarf of Mischmetal have pyrophoric properties and spontaneous ignition is possible. Put small portions of about 100 g in 1 l saltwater (5 - 15 %) in a metallic vessel and place it outside buildings. Wait till the reaction process (Hydrogen development) is finished, which may take a few days. The remaining sludge can be disposed riskless. In case of doubt contact manufacturer or supplier. Disposal must be made according to official regulations.
- **Waste disposal key:** 51310 (ÖNORM S 2100)
- **European waste catalogue** 06 03 16
- **Uncleaned packaging:**
- **Recommendation:**
Packagings that may not be cleansed are to be disposed of in the same manner as the product. Disposal must be made according to official regulations.

SECTION 14: Transport information

- | | |
|---|----------------|
| <ul style="list-style-type: none"> · 14.1 UN-Number · ADR, ADN, IMDG, IATA | Void |
| <ul style="list-style-type: none"> · 14.2 UN proper shipping name · ADR, ADN, IMDG, IATA | Void |
| <ul style="list-style-type: none"> · 14.3 Transport hazard class(es) · ADR, ADN, IMDG, IATA · Class | Void |
| <ul style="list-style-type: none"> · 14.4 Packing group · ADR, IMDG, IATA | Void |
| <ul style="list-style-type: none"> · 14.5 Environmental hazards: | Not applicable |

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- | | |
|---|--|
| · 14.6 Special precautions for user | Not applicable. |
| · 14.7 Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code | Not applicable. |
| · Transport/Additional information: | Not dangerous according to the above specifications. |
| · IATA | No dangerous good according to "IATA Dangerous Goods Regulation (DGR) 56th Edition 2015" |
| · UN "Model Regulation": | - |

SECTION 15: Regulatory information

- **15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**
· Sara

· **Section 302 (extremely hazardous substances):**

None of the ingredients is listed.

· **Section 313 (Specific toxic chemical listings):**

None of the ingredients is listed.

· **TSCA (Toxic Substances Control Act):**

All ingredients are listed.

· **Proposition 65**

· **Chemicals known to cause cancer:**

None of the ingredients is listed.

· **Chemicals known to cause reproductive toxicity to females:**

None of the ingredients is listed.

· **Chemicals known to cause reproductive toxicity for males:**

None of the ingredients is listed.

· **Chemicals known to cause developmental toxicity:**

None of the ingredients is listed.

· **Carcinogenicity categories**

· **EPA (Environmental Protection Agency)**

None of the ingredients is listed.

· **TLV (Threshold Limit Value established by ACGIH)**

None of the ingredients is listed.

· **NIOSH-Ca (National Institute for Occupational Safety and Health)**

None of the ingredients is listed.

· **European Inventory of Existing Commercial chemical Substances (EINECS)**

All ingredients are listed.

· **Canadian substance listings:**

· **Canadian Domestic Substances List (DSL)**

All ingredients are listed.

· **Canadian Ingredient Disclosure list (limit 0.1%)**

None of the ingredients is listed.

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· **Canadian Ingredient Disclosure list (limit 1%)**

None of the ingredients is listed.

· **Philippines Inventory of Chemicals and Chemical Substances**

All ingredients are listed.

· **Chinese Chemical Inventory of Existing Chemical Substances**

7440-45-1 Cerium

7439-89-6 Iron

7439-95-4 Magnesium

· **Australian Inventory of Chemical Substances**

All ingredients are listed.

· **Korean Existing Chemical Inventory**

7440-45-1 Cerium

KE-05379

7439-91-0 Lanthanum

KE-21820

7439-89-6 Iron

KE-21059

7439-95-4 Magnesium

KE-22673

· **Standard for the Uniform Scheduling of Medicines and Poisons**

7439-91-0 Lanthanum

S4

· **Existing and New Chemical List (Japan)**

7440-45-1 Cerium

· **15.2 Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

SECTION 16: Other information

· **Relevant phrases**

H228 Flammable solid.

H250 Catches fire spontaneously if exposed to air.

H260 In contact with water releases flammable gases which may ignite spontaneously.

R10 Flammable.

R15 Contact with water liberates extremely flammable gases.

R17 Spontaneously flammable in air.

· **Department issuing MSDS:**

HSE Department

Chemical Management

· **Abbreviations and acronyms:**

RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)

ICAO: International Civil Aviation Organisation

ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)

IMDG: International Maritime Code for Dangerous Goods

IATA: International Air Transport Association

GHS: Globally Harmonised System of Classification and Labelling of Chemicals

ACGIH: American Conference of Governmental Industrial Hygienists

EINECS: European Inventory of Existing Commercial Chemical Substances

ELINCS: European List of Notified Chemical Substances

CAS: Chemical Abstracts Service (division of the American Chemical Society)

DNEL: Derived No-Effect Level (REACH)

PNEC: Predicted No-Effect Concentration (REACH)

LC50: Lethal concentration, 50 percent

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LD50: Lethal dose, 50 percent

Flam. Sol. 2: Flammable solids, Hazard Category 2

Pyr. Sol. 1: Pyrophoric Solids, Hazard Category 1

Water-react. 1: Substances and Mixtures which, in contact with water, emit flammable gases, Hazard Category 1

· * **Data compared to the previous version altered.**