

1. Identification

- **Product identifier**

 - **Shurlite Part numbers:**

 - 5011, 5021, 4501, 4501B, 3001, 3001B, 3011, 3021, 1501, 1501B, 700B, 710, 730, 5001XB, 5003X, 5012X, 3001X, 3001XA, 3001XB, 3001XC, 3011X, 3021X, 732X

- **Product name: Ferro Cerium**

 - **Lighter Flints**

- **Relevant identified uses of the substance or mixture and uses advised against**

- REACH-Registration Number:

 - Cerium: 01-2119480148-35-0000

 - Lanthanum: 01-2119971281-39-0000

 - Iron: 01-2119462838-24-0360

- **Application of the substance / the preparation:**

 - Raw material for industrial applications.

 - Lighter Flints

- **Details of the supplier of the safety data sheet**

- **Manufacturer:**

 - Treibacher Industrie AG

 - Auer von Welsbachstraße 1

 - 9330 Althofen

 - Austria

- **Supplier:**

 - G. C. Fuller Mfg. Co., Inc.

 - 1 Shurlite Drive

 - Lawrenceburg, IN 47025

 - P: 812-539-2831

 - F: 812-539-4029

 - www.shurlite.com

- **Information department:** custserv@shurlite.com

- **Emergency telephone number:**

 - +43 (0) 4262 505-0 (7:00 - 16:00) - Central European Time (CET)

 - +43 (0) 1 406 4343-0 (Austrian Poison Information Centre)

 - CHEMTREC - USA / CA (24-h emergency number): +1 800 424 9300

2. Hazard(s) identification

- **Classification of the substance or mixture**

The product is not classified according to the Globally Harmonized System (GHS).

- **Label elements**

- **GHS label elements** Void

- **Hazard pictograms** Void

- **Signal word** Void

- **Hazard statements** Void

- **Classification system:**

- **NFPA ratings (scale 0 - 4)**



Health = 0
Fire = 0
Reactivity = 0

· **HMIS-ratings (scale 0 - 4)**



Health = 0
Fire = 0
Reactivity = 0

· **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.

· **vPvB:** Not applicable.

3. Composition/information on ingredients

· **Chemical characterization: Substances**

Ferro Cerium

Lighter Flints

Product name: Ferro Cerium

Lighter Flints

· **Chemical characterization: Mixtures**

· **Components:**

	Mischmetal (Rare Earth Metals)	> 76%
CAS: 7439-89-6 EINECS: 231-096-4	Iron	~20%
CAS: 7439-95-4 EINECS: 231-104-6 Index number: 012-001-00-3	Magnesium -Pyr. Sol. 1, H250; Water-react. 1, H260	~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)

4. First-aid measures

· **Description of first aid measures**



· **General Information:**

When used and handled according to specifications, the product does not have any harmful effects according to our experience and the information provided to us.
Seek medical treatment in case of complaints.

· **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.
Protect unharmed eye.

· **After swallowing:**

If swallowed, rinse mouth with water (only if person is conscious)
Drink plenty of water and provide fresh air.
Induce vomiting, only if person is fully conscious.
** Do not induce vomiting
If symptoms persist consult a doctor.

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

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

· **Information for doctor:** Treat symptomatically.

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

No further relevant information available.

5. Fire-fighting measures

· **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 with full jet
Carbon dioxide
Halogen extinguisher

· **Special hazards arising from the substance or mixture**

In case of fire, the following can be released:
Toxic metal oxide smoke

· **Advice for firefighters**

· **Protective equipment:**

Wear self-contained respiratory protective device.
Wear fully protective equipment.
Do not inhale explosion gases or combustion gases.

· **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 firefighting water in accordance with official regulations.

6. Accidental release measures

· **Personal precautions, protective equipment and emergency procedures**

Wear protective clothing
Avoid contact with eye and skin

Use respiratory protective device against the effects of fumes/dust/aerosol
 Avoid formation of dust.
 Keep away from ignition sources
 Use explosion-proof apparatus / fittings and spark-proof tools
 Ensure adequate ventilation

· **Environmental precautions:** No special measures required.

· **Methods and material for containment and cleaning up:**

Avoid formation of dust

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.

· **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.

· **Protective Action Criteria for Chemicals**

PAC-1		
7440-45-1	Cerium	30 mg/m ³
7439-91-0	Lanthanum	30 mg/m ³
7439-89-6	Iron	3.2 mg/m ³
7439-95-4	Magnesium	18 mg/m ³

PAC-2		
7440-45-1	Cerium	330 mg/m ³
7439-91-0	Lanthanum	330 mg/m ³
7439-89-6	Iron	35 mg/m ³
7439-95-4	Magnesium	200 mg/m ³

PAC-3		
7440-45-1	Cerium	2,000 mg/m ³
7439-91-0	Lanthanum	2,000 mg/m ³
7439-89-6	Iron	150 mg/m ³
7439-95-4	Magnesium	1,200 mg/m ³

7. Handling and storage

· **Precautions for safe handling**

Wear protective clothing.

Prevent formation of dust.

Any deposit of dust which cannot be avoided must be regularly removed.

Provide suction extractors if dust is formed.

Use respiratory protective device against the effects of fumes/dust/aerosol.

When working with powdered material it is recommended to use a dry inert gas atmosphere and a local explosion proof exhaust system.

Keep away from heat and direct sunlight.

Keep away from ignition sources

Avoid contact with the eyes and skin.

· **Information about protection against explosions and fires:**

Keep ignition sources away - Do not smoke.

Keep away from oxidizing agents.

Finely distributed particles may be flammable or explosive.

Avoid formation of dust.

- Use explosion-proof apparatus / fittings and spark-proof tools.
- Keep away from combustible material.
- Handle with care. Avoid jolting, friction and impact.
- **Conditions for safe storage, including any incompatibilities**
- **Storage:**
- **Requirements to be met by storerooms and receptacles:**
 - Keep receptacle tightly sealed.
 - Store receptacle in a well-ventilated area.
 - Use only receptacles specifically permitted for this substance/product.
- **Information about storage in one common storage facility:**
 - Store away from flammable substances.
 - Do not store together with acids.
 - Store away from oxidizing agents.
 - Store away from water.
 - Keep away from ignition sources
- **Further information about storage conditions:**
 - Protect from contamination.
 - Never store Lighter Flints uncontrolled.
 - Protect from heat and direct sunlight.
 - Store in a cool place.
 - Store in dry conditions.
- **Specific end use(s)** See section 1.2

8. Exposure controls/personal protection

- **Additional information about design of technical systems:**
 - Ensure good ventilation/exhaustion at the workplace.
- **Control parameters**
- **Components with limit values that require monitoring at the workplace:**
 - The following constituent is the only constituent of the product which has a PEL, TLV or other recommended exposure limit.

7439-89-6 Iron

EV (Canada)	Long-term value: 1* 5** mg/m ³ as iron;*salts, water-soluble;**welding fume
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· DNELs

7440-45-1 Cerium		
Oral	DNEL system. Effects	3.04 mg/kg bw/day (Human (consumer))
DermaI	DNEL system. Effects	3.04 mg/kg bw/day (Human (consumer))
Inhalative	DNEL system. effects	5.07 mg/kg bw/day (Human (worker)) 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
DermaI	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
	LT syst. effects	(General Population) No hazard identified (Human (worker) No hazard identified
Inhalative	Acute local effects	(General Population) No hazard identified
	Acute syst. Effects	(General Population) No hazard identified

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

7439-89-6 Iron		
Oral Inhalative	LT syst. Effects LT local effects	0.71 mg/kg bw/day (General Population) 1.5 mg/m ³ (General Population) 3 mg/m ³ (Human (worker))

· **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	60.9 µg/l (Marine organisms) Extrapolation method: assessment factor
7439-91-0 Lanthanum	
PNEC	- (-) No hazard identified

· **Additional information:** The lists that were valid during the creation were used as basis.

· **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.
- Avoid contact with the eyes and skin.

· **Breathing equipment:** Not necessary if room is well-ventilated.

· **Protection of hands:**



Protective gloves

Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation. The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.

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

· **Penetration time of glove material**

Value for the permeation: Level ≥ 60 min. (EN374)

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

9. Physical and chemical properties

- **Information on basic physical and chemical properties**
- **General Information**
- **Appearance:**
 - Form:** Solid, Lumpy
 - Color:** Grey
 - Different according to coloring
- **Odor:** Odorless
- **Odor threshold:** Not applicable
- **pH-value:** Not applicable
- **Melting point/Melting range:** ca. 700 °C (~1,292 °F)
- **Boiling point/Boiling range:** ca. 1100 °C (~2,012 °F)
- **Flash point:** Not applicable
- **Flammability (solid, gaseous):** Lumpy: Product is not flammable.
Finely distributed particles may be flammable or explosive.
- **Ignition temperature:** Solid material (flints): 400 °C (752°F)
Powder: 195 - 280 °C (338°F – 536°F)
- **Auto igniting:** Product is not self-igniting.
- **Danger of explosion:** Lighter flints: not applicable.
Powder: not determined.
- **Explosion limits:**
 - Lower:** Not determined
 - Upper:** Not determined
- **Oxidizing properties** Lumpy: none
In form of powder: yes.
- **Density:** 6.5 g/cm³ (54.243 lbs/gal)
- **Solubility in / Miscibility with**
 - Water:** Insoluble.
- **Partition coefficient (n-octanol/water):** Not determined
- **Viscosity:**
 - Dynamic:** Not determined
 - Kinematic:** Not determined
- **Other information** No further relevant information available.

10. Stability and reactivity

- **Reactivity** – No further relevant information available
- **Chemical stability**
- **Thermal decomposition / conditions to be avoided:** Lumpy material is stable against corrosion.
- **Possibility of hazardous reactions**
 - Reacts with strong oxidizing agents.
 - Reacts with water and acids.
- **Conditions to avoid:**
 - Avoid formation of dust.
 - Protect from heat.
 - Keep ignition sources away - Do not smoke.
 - Fine material may ignite during handling.
- **Incompatible materials:**
 - Keep away from water.
 - Keep away from oxidizing agents and acidic substances.
 - Keep away from combustible material.
 - Keep away from sources of ignition - No smoking.
- **Hazardous decomposition products:**
 - In case of fire, the following can be released:

-Toxic metal oxide smoke

· **Additional information:**

If ferro mischmetal gets inadvertently wet, put it on an absorptive material and dry it with warm air (not too hot).

11. Toxicological information

· **Information on toxicological effects**

· **Acute toxicity:**

· **LD/LC50 values that are 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
	NOAEL	10,648 ppm (rat (wistar)) (OECD Guideline 408; EU Method B.7) read-across from supporting substance(structural analogue or surrogate) Test material: lanthanum carbonate octahydrate
	NOAEL	1126 mg/kg bw/day (rat (wistar - female)) (OECD Guideline 408; EU Method B.7) Read-across von unterstützender Substanz (Struktur analog oder Ersatz) Testmaterial: Lanthankarbonat oktahydrat 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 (-)
Inhalative	LC50	mg/m ³ (-)
Irritation of skin	-	
Irritation of eyes	-	
7439-89-6 Iron		
Oral	LD50	20,000 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.
Inhalative	LC50 LC0/96h	>250 mg/m ³ (Rat (male)) (Weight of evidence) >50,000 mg/l (Danio rerio) (Federal Environmental Agency Germany May 1984), (Bayer AG 1989).

- **on the skin:** No data available.
- **on the eye:** No data available.
- **Sensitization:** No sensitizing effects known.
- **Additional toxicological information:**
The product is not subject to classification according to internally approved calculation methods for preparations:
- **Carcinogenic categories**

ARC (International Agency for Research on Cancer)
None of the ingredients is listed.
NTP (National Toxicology Program)
None of the ingredients is listed.
OSHA-Ca (Occupational Safety & Health Administration)
None of the ingredients is listed.

12. Ecological information

- **Toxicity**
- **Aquatic toxicity:**

7440-45-1 Cerium	
EC50/72h	> 100 mg/l (Desmodesmus subspicatus) (OECD Guideline 201 (Alga, Growth Inhibition Test)) Test material: Dicerium tricarbonat Bätscher Roger (2007)
LC50/48h	> 100 mg/l (Daphnia magna) (OECD Guideline 202; EU Method C.2) Test material: Dicerium tricarbonat Bätscher R (2007b)
LC50/96h	> 100 mg/l (Oncorhynchus mykiss) (OECD Guideline 203; EU Method C.1) Test material: Dicerium tricarbonat Bätscher R (2007a)
7439-89-6 Iron	
EC50/48h	>100 mg/l (Daphnia magna) (OECD Guideline 202) (Currenta 2008)

- **Persistence and degradability** Not determined
- **Bioaccumulative potential** Not determined
- **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:** Not hazardous for water
- **Results of PBT and vPvB assessment**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.
- **Other adverse effects** No further relevant information available.

13. Disposal considerations

- **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. Disposal must be made according to official regulations.

· **Waste disposal key:**

European waste catalogue 06 03 16

· **Uncleaned packaging:**

· **Recommendation:**

Packaging that cannot be cleansed are to be disposed of in the same manner as the product.

Disposal must be made according to official regulations.

14. Transport information

· **UN-Number**

· DOT, ADR, ADN, IMDG, IATA Void

· **UN proper shipping name**

· DOT, ADR, ADN, IMDG, IATA Void

· **Transport hazard class(es)**

· DOT, ADR, ADN, IMDG, IATA

· **Class** Void

· **Packing group**

· DOT, ADR, IMDG, IATA Void

· **Environmental hazards:** Not applicable

· **Special precautions for user** Not applicable.

· **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) 55th Edition 2014"

· **UN "Model Regulation":** -

15. Regulatory information

· **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 for 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.

· **New Jersey Right-to-Know List:**

7440-45-1 Cerium

7439-95-4 Magnesium

· **New Jersey Special Hazardous Substance List:**

7440-45-1 Cerium F3, R3

· **Pennsylvania Right-to-Know List:**

7439-95-4 Magnesium

· **Pennsylvania Special Hazardous Substance List:**

None of the ingredients is listed.

· **Carcinogenicity categories**

· **EPA (Environmental Protection Agency) - Integrated Risk Information System (IRIS)**

None of the ingredients is listed.

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

None of the ingredients is listed.

· **MAK (German Maximum Workplace Concentration)**

None of the ingredients is listed.

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

None of the ingredients is 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.

· **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 Drugs and Poisons**

7439-91-0 Lanthanum S4

· **New Zealand Inventory of Chemicals**

All ingredients are listed.

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

None of the ingredients is listed.

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

16. Other information

· **Relevant phrases**

H250 Catches fire spontaneously if exposed to air.

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

· **Department issuing SDS:**

Health, Safety, Environment and Quality Management

Chemical Management

· **Date of preparation / last revision** 03/21/2019 / 12

· **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
DOT: US Department of Transportation
IATA: International Air Transport Association
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)
NFPA: National Fire Protection Association (USA)
HMIS: Hazardous Materials Identification System (USA)
DNEL: Derived No-Effect Level (REACH)
PNEC: Predicted No-Effect Concentration (REACH)
LC50: Lethal concentration, 50 percent
LD50: Lethal dose, 50 percent

PBT: Persistent, Bioaccumulative and Toxic
vPvB: very Persistent and very Bioaccumulative
NIOSH: National Institute for Occupational Safety
OSHA: Occupational Safety & Health
TLV: Threshold Limit Value
PEL: Permissible Exposure Limit
REL: Recommended Exposure Limit
Pyr. Sol. 1: Pyrophoric solids – Category 1
Water-react. 1: Substances and mixtures which in contact with water emit flammable gases – Category 1

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