

# SAFETY DATA SHEET

Version #: 06 Issue date: 17-May-2015 Revision date: 30-April-2024 Supersedes date: 10-January-2018

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

Registration number	-
Synonyms	Cerium trifluoride (as F) * Cerium(III) fluoride * Cerium fluoride (CeF3) * Cerium trifluoride * Cerium fluoride
Materion Code	1FG
1.1. Product identifier	
Name of the substance	Cerium fluoride (CeF3)
Identification number	231-841-3 (EC number)
1.2. Relevant identified uses of Identified uses	<b>the substance or mixture and uses advised against</b> Not available.
Uses advised against	None known.
1.3. Details of the supplier of t	he safety data sheet
Supplier	
Company name	Materion Electronic Materials
Address	6070 Parkland Blvd
	Mayfield Heights, OH 44124
	United States
Division	
Telephone	1.216.383.4019
e-mail	Materion-PS@materion.com
Contact person	Product Stewardship Director
1.4. Emergency telephone number	
Document number	1FG

## **SECTION 2: Hazards identification**

### 2.1. Classification of the substance or mixture

The substance has been assessed and/or tested for its physical, health and environmental hazards and the following classificatior applies. According to GHS criteria.

### Classification according to Regulation (EC) No 1272/2008 as amended

This substance does not meet the criteria for classification according to Regulation (EC) 1272/2008 as amended.

### 2.2. Label elements

**Contains:** 

Label according to Regulation (EC) No. 1272/2008 as amended

Cerium fluoride

Hazard pictograms



Signal word

•	
Varning	

### Hazard statements

H302	Harmful if swallowed.
H315	Causes skin irritation.
H319	Causes serious eye irritation.
H335	May cause respiratory irritation.

V

### Precautionary statements

Prevention	
P264	Wash thoroughly after handling.
P270	Do not eat, drink or smoke when using this product.
P260	Do not breathe dust/fume/gas/mist/vapours/spray.

P280	Wear protective gloves/protective clothing/eye protection/face protection.		
Response			
P304 + P340 P308 + P313 P302 + P350 P332 + P313 P337 + P313	<ul> <li>IF IN EYES: Rinse cautiously with water for several minuts. Remove contact lenses, if present and easy to do. Continue rinsing.</li> <li>IF INHALED: Remove to fresh air and keep at rest in a position comfortable for breathing.</li> <li>IF exposed or concerned: Get medical advice/attention.</li> <li>IF ON SKIN: Gently wash with plenty of soap and water.</li> <li>If skin irritation occurs: Get medical advice/attention.</li> <li>If eye irritation persists: Get medical advice/attention.</li> </ul>		
Storage			
P403 + P233	Store in a well-ventilated place. Keep container tightly closed.		
Disposal	Not available.		
Supplemental label information	For further information, please contact the Product Stewardship Department at +1.800.862.4118.		
2.3. Other hazards	This substance does not meet vPvB / PBT criteria of Regulation (EC) No 1907/2006, Annex XIII. The substance is not included in the list established in accordance with REACH Article 59(1) for having endocrine disrupting properties.		

## **SECTION 3: Composition/information on ingredients**

#### 3.1. Substances

General information					
Chemical name	%	CAS-No. / EC No.	<b>REACH Registration No.</b>	Index No.	Notes
Cerium fluoride	100	7758-88-5 231-841-3	-	-	#
	Classification: Acute Tox.	4;H302, Skin Irrit. 2	2;H315, Eye Irrit. 2;H319, ST(	OT SE 3;H335	

### List of abbreviations and symbols that may be used above

DSD: Directive 67/548/EEC.

CLP: Regulation No. 1272/2008.

ATE: Acute toxicity estimate.

M: M-factor

vPvB: very persistent and very bioaccumulative substance.

PBT: persistent, bioaccumulative and toxic substance.

#: This substance has been assigned Union workplace exposure limit(s).

All concentrations are in percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume.

### **SECTION 4: First aid measures**

 General information
 Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves.

 4.1. Description of first aid measures

#### Inhalation Move to fresh air. Call a physician if symptoms develop or persist. Skin contact Wash off with soap and water. Get medical attention if irritation develops and persists. Eye contact Rinse with water. Remove contact lenses, if present and easy to do. Get medical attention if irritation develops and persists. Ingestion Rinse mouth. Get medical attention if symptoms occur. 4.2. Most important Severe eye irritation. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. symptoms and effects, both May cause respiratory irritation. Skin irritation. acute and delayed 4.3. Indication of any Treat symptomatically. immediate medical attention and special treatment needed

## **SECTION 5: Firefighting measures**

General fire hazards	No unusual fire or explosion hazards noted.
5.1. Extinguishing media Suitable extinguishing media	Water fog. Foam. Dry chemical powder. Carbon dioxide (CO2).
Unsuitable extinguishing media	Do not use water jet as an extinguisher, as this will spread the fire. Use fire-extinguishing media appropriate for surrounding materials.

Material name: Cerium fluoride (CeF3)

5.2. Special hazards arising from the substance or mixture	During fire, gases hazardous to health may be formed.
5.3. Advice for firefighters Special protective equipment for firefighters	Self-contained breathing apparatus and full protective clothing must be worn in case of fire.
Special firefighting procedures	Move containers from fire area if you can do so without risk.
Specific methods	Use standard firefighting procedures and consider the hazards of other involved materials.

### **SECTION 6: Accidental release measures**

6.1. Personal precautions, prot	ective equipment and emergency procedures
For non-emergency personnel	Wear appropriate personal protective equipment.
For emergency responders	Keep unnecessary personnel away. For personal protection, see section 8 of the SDS.
6.2. Environmental precautions	Avoid discharge into drains, water courses or onto the ground.
6.3. Methods and material for containment and cleaning up	Stop the flow of material, if this is without risk. Following product recovery, flush area with water.
6.4. Reference to other sections	For personal protection, see section 8 of the SDS. For waste disposal, see section 13.
<b>SECTION 7: Handling and</b>	l storage

7.1. Precautions for safe handling	Avoid prolonged exposure. Observe good industrial hygiene practices.
7.2. Conditions for safe storage, including any incompatibilities	Store in a closed container away from incompatible materials. Store in tightly closed container. Store away from incompatible materials (see Section 10 of the SDS).
7.3. Specific end use(s)	Observe industrial sector guidance on best practices.

### **SECTION 8: Exposure controls/personal protection**

### 8.1. Control parameters

### Occupational exposure limits

Austria. MAK List, OEL Ordina Material	ance (GwV), BGBl. II, no. 184/2 Type	2001, as amended Value	Form
Cerium fluoride (CAS 7758-88-5)	МАК	2,5 mg/m3	Inhalable fraction.
,	STEL	12,5 mg/m3	Inhalable fraction.

### Belgium. OEL. Exposure Limit Values to Chemical Substances at Work, Code of Well-being at work, Book VI, Title 1 - Chemical agents, as amended

Material	Туре	Value	
Cerium fluoride (CAS 7758-88-5)	TWA	2,5 mg/m3	
Bulgaria. OELs. Ordinance No amended	13 on protection of workers a	ainst risks of exposure to chemical agents	at work, as
Material	Туре	Value	
Cerium fluoride (CAS 7758-88-5)	TWA	2,5 mg/m3	
	on on Protection of Workers ag nnex I (NN 91/2018), as amer	ainst Exposure to Dangerous Chemicals at ded	Work, OELs
Material	Туре	Value	
Cerium fluoride (CAS 7758-88-5)	MAC	2,5 mg/m3	
Cyprus. OELs. Occupational E Agents) Reg., Ann. 1, R.A.A. 2		cals at Work (Safety and Health at Work (Ch	ıem.
Matarial	Type	Valua	

Material	Туре	Value	
Cerium fluoride (CAS 7758-88-5)	TWA	2,5 mg/m3	

Trive     UNA     2,5 mg/m3       T758-88-5)     TWA     2,5 mg/m3       Finland. HTP-arvot, App 3., Binding Limit Values, Social Affairs and Ministry of Health Value     Value       Cerium fluoride (CAS     TWA     2,5 mg/m3       France. OELS. Indicative Occupational Exposure Limits as Prescribed by Order of 30 June 2004, as amended Material     Type       Value     Value       Cerium fluoride (CAS     VME     2,5 mg/m3       France. OELS. Indicative Occupational Exposure Limits as Prescribed by Order of 30 June 2004, as amended Material     Type       Value     Value     2,5 mg/m3       Cerium fluoride (CAS     VME     2,5 mg/m3       France. Threshold Limit Values (VLEP) for Occupational Exposure to Chemicals in France, INRS ED 984       Material     Type     Value       Cerium fluoride (CAS     VME     2,5 mg/m3       Tyse-Respination of workers exposed to chemical agents (5/2020. (II.6)), Annex 18.2, as amended     Material       Type     Value     Value       Cerium fluoride (CAS     TWA     2,5 mg/m3       Tyse-Respination 390/2009 on Pollution Limits and Measures to Reduce Pollution at the Workplace, a amended       Material     Type     Value       Cerium fluoride (CAS     TWA     0,6 mg/m3       Tyse-Respination     Type     Value       Cerium fluoride (CAS     STEL <th>361/2007, Annex 2, Part A &amp; A Material</th> <th>Туре</th> <th>Value</th>	361/2007, Annex 2, Part A & A Material	Туре	Value
Denmark. Work Environment Authority. Exposure Limits for Substances & Materials, Annex 2           Induction         Value           rown fluoride (CAS         TLV         2,5 mg/m3           758-88-5)         TLV         2,5 mg/m3           Seturin fluoride (CAS         TWA         2,5 mg/m3           758-88-5)         TWA         2,5 mg/m3           Type         Value         Value           Certum fluoride (CAS         TWA         2,5 mg/m3           758-88-5)         TWA         2,5 mg/m3           Taterial         Type         Value           Certum fluoride (CAS         TWA         2,5 mg/m3           758-88-5)         TWA         2,5 mg/m3           Taterial         Type         Value           Certum fluoride (CAS         VME         2,5 mg/m3           758-88-5)         Trype         Value           Certum fluoride (CAS         VME         2,5 mg/m3           758-88-5)         Trype         Value           Certum fluoride (CAS         VME         2,5 mg/m3           758-88-5)         Trype         Value           Certum fluoride (CAS         TWA         2,5 mg/m3           758-88-5)         TWA         2,5 mg/m3 <td>•</td> <td>Ceiling</td> <td>5 mg/m3</td>	•	Ceiling	5 mg/m3
Material         Type         Value           Cerium fluoride (CAS         TLV         2,5 mg/m3           Statonia. OELS. Occupational Exposure Limits of Hazardous Substances (Regulation No. 105/2001, Annex), as mended         Type           Material         Type         Value           Cerium fluoride (CAS         TWA         2,5 mg/m3           TS98-88-5)         TWA         2,5 mg/m3           Finland. HTP-arvot, App 3., Binding Limit Values, Social Affairs and Ministry of Health         Value           Cerium fluoride (CAS         TWA         2,5 mg/m3           Tr38-88-5)         TWA         2,5 mg/m3           France. OELS. Indicative Occupational Exposure Limits as Prescribed by Order of 30 June 2004, as amended Material         Type           Value         2,5 mg/m3         Tr38-88-5)         Trace. OELS. Indicative Occupational Exposure to Chemicals in France, INRS ED 984           Vaterial         Type         Value         2,5 mg/m3           Cerium fluoride (CAS         VME         2,5 mg/m3           Type         Value         2,5 mg/m3           Cerium fluoride (CAS         VME         2,5 mg/m3           Type         Value         2,5 mg/m3           Cerium fluoride (CAS         TWA         2,5 mg/m3           Type         Value		TWA	2,5 mg/m3
7758-88-5)       Yalue         Satonia. OELS. Occupational Exposure Limits of Hazardous Substances (Regulation No. 105/2001, Annex), as immended         Vaterial       Type         Value       2,5 mg/m3         Sys8.85 - 5)       TWA       2,5 mg/m3         France. OELS. Indicative Occupational Exposure Limits as Prescribed by Order of 30 June 2004, as amended       Value         Cerium fluoride (CAS       TWA       2,5 mg/m3         France. OELS. Indicative Occupational Exposure Limits as Prescribed by Order of 30 June 2004, as amended       Value         Cerium fluoride (CAS       VME       2,5 mg/m3         France. OELS. Indicative Occupational Exposure to Chemicals in France, INRS ED 984       Value         Cerium fluoride (CAS       VME       2,5 mg/m3         France. Threshold Limit Values (VLEP) for Occupational Exposure to Chemicals in France, INRS ED 984       Value         Cerium fluoride (CAS       VME       2,5 mg/m3         Type       Value       Value         Cerium fluoride (CAS       TWA       2,5 mg/m3         Type       Value       Value         Cerium fluoride (CAS       TWA       2,5 mg/m3         Type       Value       Value         Cerium fluoride (CAS       TWA       2,5 mg/m3         Type       Value			-
amended     Type     Value       Genium fluoride (CAS     TWA     2,5 mg/m3       7758-88-5)     TWA     2,5 mg/m3       Finland. HTP-arvot, App 3, Binding Limit Values, Social Affairs and Ministry of Health     Value       Cerium fluoride (CAS     TWA     2,5 mg/m3       778-88-5)     TWA     2,5 mg/m3       France, OELS. Indicative Occupational Exposure Limits as Prescribed by Order of 30 June 2004, as amended     Value       Cerium fluoride (CAS     VME     2,5 mg/m3       France, Threshold Limit Values (VLEP) for Occupational Exposure to Chemicals in France, INRS ED 984     Value       Cerium fluoride (CAS     VME     2,5 mg/m3       798-88-5)     Regulatory indicative (VRI)     Value       fungary. OELs. Decree on protection of workers exposed to chemical agents (5/2020. (II.6)), Annex 182, as amended       Vaterial     Type     Value       Cerium fluoride (CAS     TWA     2,5 mg/m3       778-88-5)     TWA     2,5 mg/m3       Createrial     Type     Value       Cerium fluoride (CAS     TWA     2,5 mg/m3       778-88-5)     TWA     2,5 mg/m3       Createrial     Type     Value       Cerium fluoride (CAS     TWA     0,6 mg/m3       Caterial     Type     Value       Cerium fluoride (CAS     STEL		TLV	2,5 mg/m3
Vaterial         Type         Value           Cerium fluoride (CAS         TWA         2,5 mg/m3           Finland. HTP-arvot, App 3., Binding Limit Values, Social Affairs and Ministry of Health Material         Type         Value           Cerium fluoride (CAS         TWA         2,5 mg/m3           758-88-5)         TRACe. OELS. Indicative Occupational Exposure Limits as Prescribed by Order of 30 June 2004, as amended Material         Type           Cerium fluoride (CAS         VME         2,5 mg/m3           France. OELS. Indicative Occupational Exposure to Chemicals in France, INRS ED 984         Type           Value         2,5 mg/m3         Trance, Threshold Limit Values (VLEP) for Occupational Exposure to Chemicals in France, INRS ED 984           Material         Type         Value           Cerium fluoride (CAS         VME         2,5 mg/m3           758-88-5)         Regulatory status: Regulatory indicative (VRI)         Hungary, OELS. Decree on protection of workers exposed to chemical agents (5/2020. (II.6)), Annex 1&2, as amended           Material         Type         Value           Cerium fluoride (CAS         TWA         2,5 mg/m3           Y58-88-5)         TWA         0,6 mg/m3           Cerium fluoride (CAS         TWA         0,6 mg/m3           Cerium fluoride (CAS         Type         Value		cposure Limits of Hazardous S	ubstances (Regulation No. 105/2001, Annex), as
T758-88-5)       Two         Finland. HTP-arvot, App 3., Binding Limit Values, Social Affairs and Ministry of Health Material       Yalue         Cerium fluoride (CAS       TWA       2,5 mg/m3         France. OELs. Indicative Occupational Exposure Limits as Prescribed by Order of 30 June 2004, as amended Material       Type         Cerium fluoride (CAS       VME       2,5 mg/m3         France. Threshold Limit Values (VLEP) for Occupational Exposure to Chemicals in France, INRS ED 984       Type         Value       Value       Cerium fluoride (CAS       VME         Cerium fluoride (CAS       VME       2,5 mg/m3         Regulatory status:       Regulatory indicative (VRI)       Regulatory status:       Regulatory status:         Hungary, OELs. Decree on protection of workers exposed to chemical agents (5/2020. (II.6)), Annex 18.2, as amended       3788-86-5)         Carium fluoride (CAS       TWA       2,5 mg/m3         Carium fluoride (CAS       TWA       2,5 mg/m3         Crealad. OELs. Regulation 390/2009 on Pollution Limits and Measures to Reduce Pollution at the Workplace, a amended       44         Material       Type       Value         Cerium fluoride (CAS       TWA       0,6 mg/m3         7758-88-5)       TWA       0,6 mg/m3         Latvia. OELs. Occupational Exposure Limits of Chemical Substances at Workplace (Reg. No	Material	Туре	Value
Material       Type       Value         Cerium fluoride (CAS       TWA       2,5 mg/m3         758-86-5)       Twa       2,5 mg/m3         France. OELs. Indicative Occupational Exposure Limits as Prescribed by Order of 30 June 2004, as amended Material       Type         Cerium fluoride (CAS       VME       2,5 mg/m3         France. Threshold Limit Values (VLEP) for Occupational Exposure to Chemicals in France, INRS ED 984       Material         Type       Value       Value         Cerium fluoride (CAS       VME       2,5 mg/m3         758-88-5)       Regulatory status: Regulatory indicative (VRI)       UME         Using and the fluoride (CAS       VME       2,5 mg/m3         758-88-5)       Regulatory status: Regulatory indicative (VRI)       UME         Using and the fluoride (CAS       TWA       2,5 mg/m3         Tryse weaterial       Type       Value         Cerium fluoride (CAS       TWA       2,5 mg/m3         Tyse weaterial       Type       Value         Cerium fluoride (CAS       TWA       0,6 mg/m3         Tyse weaterial       Type       Value         Cerium fluoride (CAS       TWA       0,6 mg/m3         Tyse weaterial       Type       Value         Cerium fluoride (CA		TWA	2,5 mg/m3
T758-88-5)         France. OELS. Indicative Occupational Exposure Limits as Prescribed by Order of 30 June 2004, as amended Material         Type       Value         Cartium fluoride (CAS       VME       2,5 mg/m3         France. Threshold Limit Values (VLEP) for Occupational Exposure to Chemicals in France, INRS ED 984 Material       Type       Value         Cartium fluoride (CAS       VME       2,5 mg/m3       758-88-5)         Regulatory status:       Regulatory indicative (VRI)       Hungary. OELs. Decree on protection of workers exposed to chemical agents (5/2020. (II.6)), Annex 1&2, as amended         Material       Type       Value         Carlum fluoride (CAS       TWA       2,5 mg/m3         Carlum fluoride (CAS       TWA       2,5 mg/m3         Carlum fluoride (CAS       TWA       2,5 mg/m3         Carlum fluoride (CAS       TWA       0,6 mg/m3         Carlum fluoride (CAS       TWA       0,6 mg/m3         Carlum fluoride (CAS       TWA       0,6 mg/m3         Carlum fluoride (CAS       TWA       0,5 mg/m3         Carlum fluoride (CAS       TYpe       Value         Carlum fluoride (CAS       TWA       0,5 mg/m3         Carlum fluoride (CAS       STEL       2,5 mg/m3         Carlum fluoride (CAS       STEL			-
Cerium fluoride (CAS     VME     2,5 mg/m3       7758-88-5)     VME     2,5 mg/m3       France. Threshold Limit Values (VLEP) for Occupational Exposure to Chemicals in France, INRS ED 984     Value       Cerium fluoride (CAS     VME     2,5 mg/m3       7758-88-5)     Regulatory status: Regulatory indicative (VRI)     Hungary. OELs. Decree on protection of workers exposed to chemical agents (5/2020. (II.6)), Annex 1&2, as amended       Material     Type     Value       Cerium fluoride (CAS     TWA     2,5 mg/m3       7758-88-5)     TWA     2,5 mg/m3       Icceland. OELs. Regulation 390/2009 on Pollution Limits and Measures to Reduce Pollution at the Workplace, a amended     Cerium fluoride (CAS       Material     Type     Value       Cerium fluoride (CAS     TWA     0,6 mg/m3       7758-88-5)     TWA     0,6 mg/m3       Cartum fluoride (CAS     TWA     0,6 mg/m3       7758-88-5)     TWA     0,5 mg/m3       Latvia. OELs. Occupational Exposure Limit Values for Chemical Substances at Workplace (Reg. Nor. 325/ 2007, L.V. 80       Annex 1), as amended     Type       Value     Value       Cerium fluoride (CAS     STEL     2,5 mg/m3       7758-88-5)     TWA     0,5 mg/m3       Lithuania. OELs. Occupational Exposure Limit Values for Chemical Substances (Hygiene Norm HN 23:2011; Ore No. V-824/A1-389), as amended	Cerium fluoride (CAS 7758-88-5)	TWA	2,5 mg/m3
7758-88-5)       France. Threshold Limit Values (VLEP) for Occupational Exposure to Chemicals in France, INRS ED 984         Material       Type       Value         Cerium fluoride (CAS       VME       2,5 mg/m3         7758-88-5)       Regulatory status: Regulatory indicative (VRI)       Hungary. OELs. Decree on protection of workers exposed to chemical agents (5/2020. (II.6)), Annex 1&2, as amended         Material       Type       Value         Cerium fluoride (CAS       TWA       2,5 mg/m3         7758-88-5)       TWA       2,5 mg/m3         Keeland. OELs. Regulation 390/2009 on Pollution Limits and Measures to Reduce Pollution at the Workplace, a amended       Type         Material       Type       Value         Cerium fluoride (CAS       TWA       0,6 mg/m3         Atterial       Type       Value         Cerium fluoride (CAS       TWA       0,6 mg/m3         Atterial       Type       Value         Cerium fluoride (CAS       STEL       2,5 mg/m3         Atterial       Type       Value         Cerium fluoride (CAS       STEL       2,5 mg/m3         Atterial       Type       Value         Cerium fluoride (CAS       STEL       2,5 mg/m3         Lithuania. OELs. Occupational Exposure Limit Values for Chemical Substances		=	-
Cerium fluoride (CAS       VME       2,5 mg/m3         7758-88-5)       Regulatory status: Regulatory indicative (VRI)         Hungary. OELs. Decree on protection of workers exposed to chemical agents (5/2020. (II.6)), Annex 1&2, as amended Material       Type         VME       2,5 mg/m3         Cerium fluoride (CAS       TWA       2,5 mg/m3         Type       Value         Cerium fluoride (CAS       TWA       2,5 mg/m3         Total definition 390/2009 on Pollution Limits and Measures to Reduce Pollution at the Workplace, at amended Material       Type         Material       Type       Value         Cerium fluoride (CAS       TWA       0,6 mg/m3         7758-88-5)       TWA       0,6 mg/m3         Cerium fluoride (CAS       TWA       0,6 mg/m3         7758-88-5)       TWA       0,6 mg/m3         Latvia. OELs. Occupational Exposure Limits of Chemical Substances at Workplace (Reg. No. 325/ 2007, L.V. 80         Annex 1), as amended       Type       Value         Cerium fluoride (CAS       STEL       2,5 mg/m3         7758-88-5)       TWA       0,5 mg/m3         Lithuania. OELs. Occupational Exposure Limit Values for Chemical Substances (Hygiene Norm HN 23:2011; Ore No. V-824/A1-389), as amended       Type         Material       Type       Value <td>Cerium fluoride (CAS 7758-88-5)</td> <td>VME</td> <td>2,5 mg/m3</td>	Cerium fluoride (CAS 7758-88-5)	VME	2,5 mg/m3
7758-88-5)       Regulatory status: Regulatory indicative (VRI)         Hungary. OELs. Decree on protection of workers exposed to chemical agents (5/2020. (II.6)), Annex 1&2, as amended         Material       Type         Value       2,5 mg/m3         Cerium fluoride (CAS       TWA         Amended       2,5 mg/m3         Material       Type         Value       Value         Cerium fluoride (CAS       TWA         Amended       7ype         Value       Value         Cerium fluoride (CAS       TWA         O,6 mg/m3       7758-88-5)         Latvia OELs. Occupational Exposure Limits of Chemical Substances at Workplace (Reg. No. 325/ 2007, L.V. 80         Annex 1), as amended       Type         Value       2,5 mg/m3         Cerium fluoride (CAS       STEL         Zy5 mg/m3       TWA         Lithuania. OELs. Occupational Exposure Limit Values for Chemical Substances (Hygie			
Hungary. OELs. Decree on protection of workers exposed to chemical agents (5/2020. (II.6)), Annex 1&2, as amended Material       Type       Value         Cerium fluoride (CAS       TWA       2,5 mg/m3         Atterial       Type       Value         Cerium fluoride (CAS       TWA       2,5 mg/m3         Atterial       Type       Value         Cerium fluoride (CAS       TWA       0,6 mg/m3         Perium fluoride (CAS       TWA       0,6 mg/m3         Perium fluoride (CAS       TWA       0,6 mg/m3         Partial       Type       Value         Cerium fluoride (CAS       TWA       0,6 mg/m3         Annex 1), as amended       Type       Value         Material       Type       Value         Cerium fluoride (CAS       STEL       2,5 mg/m3         T758-88-5)       TWA       0,5 mg/m3         Lithuania. OELs. Occupational Exposure Limit Values for Chemical Substances (Hygiene Norm HN 23:2011; Ore No. V-824/A1-389), as amended       Type         Material       Type       Value       Value         Cerium fluoride (CAS       STEL       2,5 mg/m3         Charactional Exposure Limit Values for Chemical Substances (Hygiene Norm HN 23:2011; Ore No. V-824/A1-389), as amended       Type         Material       Type		VME	2,5 mg/m3
amended Material       Type       Value         Cerium fluoride (CAS 7758-88-5)       TWA       2,5 mg/m3         Izceland. OELs. Regulation 390/2009 on Pollution Limits and Measures to Reduce Pollution at the Workplace, a amended       amended         Material       Type       Value         Cerium fluoride (CAS 7758-88-5)       TWA       0,6 mg/m3         Latvia. OELs. Occupational Exposure Limits of Chemical Substances at Workplace (Reg. No. 325/ 2007, L.V. 80 Annex 1), as amended       Type         Material       Type       Value         Cerium fluoride (CAS 7758-88-5)       STEL       2,5 mg/m3         Lithuania. OELs. Occupational Exposure Limit Values for Chemical Substances (Hygiene Norm HN 23:2011; Ord No. V-824/A1-389), as amended       Type         Material       Type       Value         Cerium fluoride (CAS 7758-88-5)       STEL       2,5 mg/m3         Lithuania. OELs. Occupational Exposure Limit Values for Chemical Substances (Hygiene Norm HN 23:2011; Ord No. V-824/A1-389), as amended       Type         Material       Type       Value         Cerium fluoride (CAS 7758-88-5)       STEL       2,5 mg/m3         Luxembourg. OELs. Binding Occupational Exposure Limit Values (Annex I), G.D.R. of 14 November 2016, OJ Memorial A, n ° 235/2016, as amended       Material       Type         Material       Type       Value       Cerium fluorid			
Cerium fluoride (CAS     TWA     2,5 mg/m3       7758-88-5)     TWA     2,5 mg/m3       Icceland. OELs. Regulation 390/2009 on Pollution Limits and Measures to Reduce Pollution at the Workplace, a amended     Material       Material     Type     Value       Cerium fluoride (CAS     TWA     0,6 mg/m3       2758-88-5)     TWA     0,6 mg/m3       Latvia. OELs. Occupational Exposure Limits of Chemical Substances at Workplace (Reg. No. 325/ 2007, L.V. 80       Annex 1), as amended     Type       Waterial     Type       Cerium fluoride (CAS     STEL       Cerium fluoride (CAS     STEL    <		, , ,	
Type       Value         Cerium fluoride (CAS       TWA       0,6 mg/m3         Attrial       Type       Value         Cerium fluoride (CAS       TWA       0,6 mg/m3         Attrial       Type       Value         Cerium fluoride (CAS       TWA       0,6 mg/m3         Annex 1), as amended       Type       Value         Material       Type       Value         Cerium fluoride (CAS       STEL       2,5 mg/m3         7758-88-5)       TWA       0,5 mg/m3         Lithuania. OELs. Occupational Exposure Limit Values for Chemical Substances (Hygiene Norm HN 23:2011; Ore No. V-824/A1-389), as amended       Type         Material       Type       Value         Cerium fluoride (CAS       STEL       2,5 mg/m3         Crium fluoride (CAS       STEL       2,5 mg/m3         Crium fluoride (CAS       STEL       2,5 mg/m3         Cerium fluoride (CAS       STEL       2,5 mg/m3         TWA       0,5 mg/m3       Uk         Cerium fluoride (CAS       STEL       2,5 mg/m3         TWA       0,5 mg/m3       Uk         Cerium fluoride (CAS       STEL       2,5 mg/m3         TWA       0,5 mg/m3       Uk         Cerium f	Hungary. OELs. Decree on prot	, , ,	chemical agents (5/2020. (II.6)), Annex 1&2, as
Amended MaterialTypeValueCerium fluoride (CAS 7758-88-5)TWA0,6 mg/m3Latvia. OELs. Occupational Exposure Limits of Chemical Substances at Workplace (Reg. No. 325/ 2007, L.V. 80 Annex 1), as amended MaterialTypeValueValueCerium fluoride (CAS 7758-88-5)STEL2,5 mg/m3Cerium fluoride (CAS 7758-88-5)STEL2,5 mg/m3Lithuania. OELs. Occupational Exposure ValueLimit Values for Chemical Substances (Hygiene Norm HN 23:2011; Ord No. V-824/A1-389), as amended MaterialTypeValueValueCerium fluoride (CAS 7758-88-5)STEL2,5 mg/m3Lithuania. OELs. Occupational Exposure ValueSTEL2,5 mg/m3Lithuania. OELs. Occupational Exposure ValueTypeValueCerium fluoride (CAS 7758-88-5)TWA0,5 mg/m3Luxembourg. OELs. Binding Occupational Exposure Limit Values (Annex I), G.D.R. of 14 November 2016, OJ Memorial A, n ° 235/2016, as amended MaterialTypeValueCerium fluoride (CAS YaseTWA2,5 mg/m3	lungary. OELs. Decree on prot	tection of workers exposed to	
Material       Type       Value         Cerium fluoride (CAS 7758-88-5)       TWA       0,6 mg/m3         Latvia. OELs. Occupational Exposure Limits of Chemical Substances at Workplace (Reg. No. 325/ 2007, L.V. 80 Annex 1), as amended       Value         Material       Type       Value         Cerium fluoride (CAS 7758-88-5)       STEL       2,5 mg/m3         Cerium fluoride (CAS 7758-88-5)       TWA       0,5 mg/m3         Lithuania. OELs. Occupational Exposure No. V-824/A1-389), as amended       Type       Value         Material       Type       Value         Cerium fluoride (CAS 7758-88-5)       STEL       2,5 mg/m3         No. V-824/A1-389), as amended       Type       Value         Cerium fluoride (CAS 7758-88-5)       STEL       2,5 mg/m3         Cerium fluoride (CAS 7758-88-5)       STEL       2,5 mg/m3         Luxembourg. OELs. Binding Occupational Exposure Limit Values (Annex I), G.D.R. of 14 November 2016, OJ Memorial A, n ° 235/2016, as amended Material       Type       Value         Cerium fluoride (CAS       TWA       2,5 mg/m3	Hungary. OELs. Decree on prot amended Material Cerium fluoride (CAS	tection of workers exposed to Type	Value
7758-88-5)       Type       Value         Cerium fluoride (CAS       STEL       2,5 mg/m3         7758-88-5)       TWA       0,5 mg/m3         Lithuania. OELs. Occupational Exposure Limit Values for Chemical Substances (Hygiene Norm HN 23:2011; Ore No. V-824/A1-389), as amended       Type         Material       Type       Value         Cerium fluoride (CAS       STEL       2,5 mg/m3         Cerium fluoride (CAS       Type       Value         No. V-824/A1-389), as amended       Type       Value         Cerium fluoride (CAS       STEL       2,5 mg/m3         Cerium fluoride (CAS       TWA       0,5 mg/m3         Luxembourg. OELs. Binding Occupational Exposure Limit Values (Annex I), G.D.R. of 14 November 2016, OJ       Memorial A, n ° 235/2016, as amended         Material       Type       Value         Cerium fluoride (CAS       Type       Value         Cerium fluoride (CAS<	Hungary. OELs. Decree on prot amended Material Cerium fluoride (CAS 7758-88-5) Iceland. OELs. Regulation 390	tection of workers exposed to Type TWA	Value 2,5 mg/m3
Annex 1), as amended MaterialTypeValueCerium fluoride (CAS 7758-88-5)STEL2,5 mg/m3TWA0,5 mg/m3Lithuania. OELs. Occupational Exposure Limit Values for Chemical Substances (Hygiene Norm HN 23:2011; Ord MaterialTypeValueCerium fluoride (CAS 7758-88-5)STEL2,5 mg/m3Cerium fluoride (CAS 7758-88-5)STEL2,5 mg/m3Lithuania. OELs. Binding Occupational Exposure Limit Values (Annex I)0,5 mg/m3Luxembourg. OELs. Binding Occupational Exposure Limit Values (Annex I)G.D.R. of 14 November 2016, OJMemorial A, n ° 235/2016, as amended MaterialTypeValueCerium fluoride (CAS MaterialTypeValue	Hungary. OELs. Decree on prot amended Material Cerium fluoride (CAS 7758-88-5) Iceland. OELs. Regulation 390 amended	tection of workers exposed to Type TWA /2009 on Pollution Limits and	Value 2,5 mg/m3 Measures to Reduce Pollution at the Workplace, a
MaterialTypeValueCerium fluoride (CAS 7758-88-5)STEL2,5 mg/m3TWA0,5 mg/m3Lithuania. OELs. Occupational Exposure No. V-824/A1-389), as amendedTypeValueMaterialTypeValueCerium fluoride (CAS 7758-88-5)STEL2,5 mg/m3Cerium fluoride (CAS 7758-88-5)STEL2,5 mg/m3Cerium fluoride (CAS 7758-88-5)TWA0,5 mg/m3Cerium fluoride (CAS 7758-88-5)TWA0,5 mg/m3Cerium fluoride (CAS 7758-88-5)TypeValueCerium fluoride (CAS 7758-88-5)TypeValueCerium fluoride (CAS 7758-88-5)TypeValue	Hungary. OELs. Decree on prot amended Material Cerium fluoride (CAS 7758-88-5) Iceland. OELs. Regulation 390 amended Material Cerium fluoride (CAS	tection of workers exposed to Type TWA /2009 on Pollution Limits and Type	Value 2,5 mg/m3 Measures to Reduce Pollution at the Workplace, a Value
7758-88-5)       TWA       0,5 mg/m3         Lithuania. OELs. Occupational Exposure Limit Values for Chemical Substances (Hygiene Norm HN 23:2011; Ord No. V-824/A1-389), as amended         Material       Type       Value         Cerium fluoride (CAS       STEL       2,5 mg/m3         7758-88-5)       TWA       0,5 mg/m3         Luxembourg. OELs. Binding Occupational Exposure Limit Values (Annex I), G.D.R. of 14 November 2016, OJ       Memorial A, n ° 235/2016, as amended         Material       Type       Value         Cerium fluoride (CAS       Type       Value	Hungary. OELs. Decree on prof amended Material Cerium fluoride (CAS 7758-88-5) Iceland. OELs. Regulation 390 amended Material Cerium fluoride (CAS 7758-88-5) Latvia. OELs. Occupational Exp	tection of workers exposed to Type TWA /2009 on Pollution Limits and Type TWA	Value         2,5 mg/m3         Measures to Reduce Pollution at the Workplace, a         Value         0,6 mg/m3
Lithuania. OELs. Occupational Exposure Limit Values for Chemical Substances (Hygiene Norm HN 23:2011; Oro No. V-824/A1-389), as amended Material Type Value Cerium fluoride (CAS STEL 2,5 mg/m3 7758-88-5) TWA 0,5 mg/m3 Luxembourg. OELs. Binding Occupational Exposure Limit Values (Annex I), G.D.R. of 14 November 2016, OJ Memorial A, n ° 235/2016, as amended Material Type Value Cerium fluoride (CAS TWA 2,5 mg/m3	Hungary. OELs. Decree on prof amended Material Cerium fluoride (CAS 7758-88-5) Celand. OELs. Regulation 390 Amended Material Cerium fluoride (CAS 7758-88-5) Latvia. OELs. Occupational Exp Annex 1), as amended	tection of workers exposed to Type TWA /2009 on Pollution Limits and Type TWA TWA Dosure Limits of Chemical Sub-	Value         2,5 mg/m3         Measures to Reduce Pollution at the Workplace, a         Value         0,6 mg/m3         stances at Workplace (Reg. No. 325/ 2007, L.V. 80
No. V-824/A1-389), as amendedTypeValueMaterialTypeValueCerium fluoride (CAS 7758-88-5)STEL TWA2,5 mg/m3Luxembourg. OELs. Binding Occupational Exposure Limit Values (Annex I), G.D.R. of 14 November 2016, OJ Memorial A, n ° 235/2016, as amendedTypeMaterialTypeValueCerium fluoride (CASTWA2,5 mg/m3	Hungary. OELs. Decree on prof amended Material Cerium fluoride (CAS 7758-88-5) Iceland. OELs. Regulation 390 amended Material Cerium fluoride (CAS 7758-88-5) Latvia. OELs. Occupational Exp Annex 1), as amended Material Cerium fluoride (CAS	tection of workers exposed to Type TWA /2009 on Pollution Limits and Type TWA Dosure Limits of Chemical Sub- Type	Value 2,5 mg/m3 Measures to Reduce Pollution at the Workplace, a Value 0,6 mg/m3 stances at Workplace (Reg. No. 325/ 2007, L.V. 80 Value
MaterialTypeValueCerium fluoride (CAS 7758-88-5)STEL2,5 mg/m3TWA0,5 mg/m3Luxembourg. OELs. Binding OccupationalExposure Limit Values (Annex I), G.D.R. of 14 November 2016, OJMemorial A, n ° 235/2016, as amendedTypeValueCerium fluoride (CASTWA2,5 mg/m3	Hungary. OELs. Decree on prof amended Material Cerium fluoride (CAS 7758-88-5) Iceland. OELs. Regulation 390 amended Material Cerium fluoride (CAS 7758-88-5) Latvia. OELs. Occupational Exp Annex 1), as amended Material Cerium fluoride (CAS	tection of workers exposed to Type TWA /2009 on Pollution Limits and Type TWA TWA bosure Limits of Chemical Subs Type STEL	Value         2,5 mg/m3         Measures to Reduce Pollution at the Workplace, a         Value         0,6 mg/m3         stances at Workplace (Reg. No. 325/ 2007, L.V. 80         Value         2,5 mg/m3
7758-88-5)       TWA       0,5 mg/m3         Luxembourg. OELs. Binding Occupational Exposure Limit Values (Annex I), G.D.R. of 14 November 2016, OJ         Memorial A, n ° 235/2016, as amended         Material       Type         Value         Cerium fluoride (CAS       TWA       2,5 mg/m3	Hungary. OELs. Decree on prof amended Material Cerium fluoride (CAS 7758-88-5) Iceland. OELs. Regulation 390 amended Material Cerium fluoride (CAS 7758-88-5) Latvia. OELs. Occupational Exp Annex 1), as amended Material Cerium fluoride (CAS 7758-88-5) Lithuania. OELs. Occupational	tection of workers exposed to Type TWA /2009 on Pollution Limits and Type TWA bosure Limits of Chemical Subs Type STEL TWA Exposure Limit Values for Che	Value         2,5 mg/m3         Measures to Reduce Pollution at the Workplace, a         Value         0,6 mg/m3         stances at Workplace (Reg. No. 325/ 2007, L.V. 80         Value         2,5 mg/m3         0,5 mg/m3
TWA     0,5 mg/m3       Luxembourg. OELs. Binding Occupational Exposure Limit Values (Annex I), G.D.R. of 14 November 2016, OJ       Memorial A, n ° 235/2016, as amended       Material     Type       Value       Cerium fluoride (CAS     TWA       2,5 mg/m3	Hungary. OELs. Decree on prof amended Material Cerium fluoride (CAS 7758-88-5) Iceland. OELs. Regulation 390 amended Material Cerium fluoride (CAS 7758-88-5) Latvia. OELs. Occupational Exp Annex 1), as amended Material Cerium fluoride (CAS 7758-88-5) Lithuania. OELs. Occupational No. V-824/A1-389), as amended	tection of workers exposed to Type TWA /2009 on Pollution Limits and Type TWA bosure Limits of Chemical Subs Type STEL TWA Exposure Limit Values for Cher ed	Value         2,5 mg/m3         Measures to Reduce Pollution at the Workplace, a         Value         0,6 mg/m3         stances at Workplace (Reg. No. 325/ 2007, L.V. 80         Value         2,5 mg/m3         0,5 mg/m3         emical Substances (Hygiene Norm HN 23:2011; Ordered Content of the second cont
Memorial A, n ° 235/2016, as amended     Type     Value       Material     TWA     2,5 mg/m3	Hungary. OELs. Decree on prof amended Material Cerium fluoride (CAS 7758-88-5) Iceland. OELs. Regulation 390 amended Material Cerium fluoride (CAS 7758-88-5) Latvia. OELs. Occupational Exp Annex 1), as amended Material Cerium fluoride (CAS 7758-88-5) Lithuania. OELs. Occupational No. V-824/A1-389), as amend Material Cerium fluoride (CAS	tection of workers exposed to Type TWA /2009 on Pollution Limits and Type TWA bosure Limits of Chemical Subs Type STEL TWA Exposure Limit Values for Chemical Type	Value         2,5 mg/m3         Measures to Reduce Pollution at the Workplace, a         Value         0,6 mg/m3         stances at Workplace (Reg. No. 325/ 2007, L.V. 80         Value         2,5 mg/m3         0,5 mg/m3         emical Substances (Hygiene Norm HN 23:2011; Ord         Value
Material     Type     Value       Cerium fluoride (CAS     TWA     2,5 mg/m3	Hungary. OELs. Decree on prof amended Material Cerium fluoride (CAS 7758-88-5) Iceland. OELs. Regulation 390 amended Material Cerium fluoride (CAS 7758-88-5) Latvia. OELs. Occupational Exp Annex 1), as amended Material Cerium fluoride (CAS 7758-88-5) Lithuania. OELs. Occupational No. V-824/A1-389), as amend Material Cerium fluoride (CAS	tection of workers exposed to Type TWA /2009 on Pollution Limits and Type TWA bosure Limits of Chemical Subs Type STEL TWA Exposure Limit Values for Che ed Type STEL STEL	Value         2,5 mg/m3         Measures to Reduce Pollution at the Workplace, a         Value         0,6 mg/m3         stances at Workplace (Reg. No. 325/ 2007, L.V. 80         Value         2,5 mg/m3         one control of the second se
	Hungary. OELs. Decree on prof amended Material Cerium fluoride (CAS 7758-88-5) Iceland. OELs. Regulation 390 amended Material Cerium fluoride (CAS 7758-88-5) Latvia. OELs. Occupational Exp Annex 1), as amended Material Cerium fluoride (CAS 7758-88-5) Lithuania. OELs. Occupational No. V-824/A1-389), as amended Material Cerium fluoride (CAS 7758-88-5) Lithuania. OELs. Occupational No. V-824/A1-389), as amended Material Cerium fluoride (CAS 7758-88-5)	tection of workers exposed to Type TWA /2009 on Pollution Limits and Type TWA bosure Limits of Chemical Subs Type STEL TWA Exposure Limit Values for Che ed Type STEL TWA Exposure Limit Values for Che ed Type STEL TWA STEL TWA	Value         2,5 mg/m3         Measures to Reduce Pollution at the Workplace, a         Value         0,6 mg/m3         stances at Workplace (Reg. No. 325/ 2007, L.V. 80         Value         2,5 mg/m3         0,5 mg/m3         emical Substances (Hygiene Norm HN 23:2011; Order 2,5 mg/m3         Q         0,5 mg/m3
	Hungary. OELs. Decree on prof amended Material Cerium fluoride (CAS 7758-88-5) Iceland. OELs. Regulation 390 amended Material Cerium fluoride (CAS 7758-88-5) Latvia. OELs. Occupational Exp Annex 1), as amended Material Cerium fluoride (CAS 7758-88-5) Lithuania. OELs. Occupational No. V-824/A1-389), as amended Material Cerium fluoride (CAS 7758-88-5) Lithuania. OELs. Occupational No. V-824/A1-389), as amended Material Cerium fluoride (CAS 7758-88-5)	tection of workers exposed to Type TWA /2009 on Pollution Limits and Type TWA bosure Limits of Chemical Sub- Type STEL TWA Exposure Limit Values for Che ed Type STEL TWA Exposure Limit Values for Che ed Type STEL TWA STEL TWA	Value         2,5 mg/m3         Measures to Reduce Pollution at the Workplace, a         Value         0,6 mg/m3         stances at Workplace (Reg. No. 325/ 2007, L.V. 80         Value         2,5 mg/m3         on the stances of the stance

Material	Туре	Value
Cerium fluoride (CAS 758-88-5)	TWA	2,5 mg/m3
Netherlands. OELs per Annex as amended	XIII of Working Conditions Re	egulation (Staatscourant no. 252, 29 December 200
Material	Туре	Value
Cerium fluoride (CAS 758-88-5)	STEL	2 mg/m3
	on Measures and Limit Values roups for Biological Factors, as	o for Physical and Chemical Factors in Work
laterial	Туре	Value
Cerium fluoride (CAS 7758-88-5)	TLV	0,5 mg/m3
Portugal. Decree-Law No. 24, Aaterial	2012, Occupational Exposure Type	Limit Values, Annex II, as amended Value
Cerium fluoride (CAS 7758-88-5)	TWA	2,5 mg/m3
—	pational exposure to chemical	
Material	Туре	Value
Cerium fluoride (CAS 7758-88-5)	TWA	2,5 mg/m3
Romania. OELs. Limit Values ( amended)	of Chemical Agents at Workpla	nce (Regulation 1.218/2006, M.O 845, Annex 1, 3&4
Material	Туре	Value
Cerium fluoride (CAS 7758-88-5)	TWA	2,5 mg/m3
		nemical factors in workplace air (Regulation No
355/2006, Annex 1, Table 1, Material	Type	Value
Cerium fluoride (CAS 1758-88-5)	TWA	2,5 mg/m3
Spain. OELs. INSST, Límites d Ambientales (VLAs)	e Exposición Profesional Para	Agentes Químicos, Table 1-Valores Límites
Material	Туре	Value
Cerium fluoride (CAS 758-88-5)	TWA	2,5 mg/m3
Sweden. OELs (Annex 1). Wo amended	rk Environment Authority (AV)	, Occupational Exposure Limit Values (AFS 2018:1)
Material	Туре	Value
Cerium fluoride (CAS 758-88-5)	TWA	2 mg/m3
JK. OELs. Workplace Exposur Iaterial	e Limits (WELs) (EH40/2005 ( Type	Fourth Edition 2020)), Table 1 Value
Cerium fluoride (CAS 1758-88-5)	TWA	2,5 mg/m3
EU. Indicative Exposure Limit 2017/164/EU	Values in Directives 91/322/I	EEC, 2000/39/EC, 2006/15/EC, 2009/161/EU,
	Туре	Value
Material	i ypc	Value

### **Biological limit values**

# Croatia. BELs (BGV). Regulation on Protection of Workers against Exposure to Dangerous Chemicals at Work, OELs and BELs, Annex IV (NN 91/2018), as amended

Material	Value	Determinant	Specimen	Sampling Time	
Cerium fluoride (CAS 7758-88-5)	8 mg/g	Fluoride	Creatinine in urine	*	
	4 mg/g	Fluoride	Creatinine in urine	*	
	40 mmol/mol	Fluoride	Creatinine in urine	*	
	24 mmol/mol	Fluoride	Creatinine in urine	*	

\* - For sampling details, please see the source document.

Czech Republic. BELs. Government Decree 432/2003 Sb., as amended					
Material	Value	Determinant	Specimen	Sampling Time	
Cerium fluoride (CAS 7758-88-5)	60 µmol/mmol	Fluoride	Creatinine in urine	*	
	10 mg/g	Fluoride	Creatinine in urine	*	

\* - For sampling details, please see the source document.

# France. Biological indicators of exposure (IBE) (National Institute for Research and Security (INRS), ND 2065)MaterialValueDeterminantSpecimenSampling Time

Cerium fluoride (CAS 7758-88-5)	3 mg/g	Fluorures	Creatinine in urine	*
	10 mg/g	Fluorures	Creatinine in urine	*

\* - For sampling details, please see the source document.

## Germany. TRGS 903, BAT List (Biological Limit Values)

Material Value Determinant Specimen Sampling Time
Cerium fluoride (CAS 4 mg/l Fluorid Urine *

7758-88-5)

\* - For sampling details, please see the source document.

# Hungary. BELs. Decree on protection of workers exposed to chemical agents (5/2020. (II.6)), Annex 3&4, as amended

Material	Value	Determinant	Specimen	Sampling Time	
Cerium fluoride (CAS 7758-88-5)	42 µmol/mmol	fluoride	Creatinine in urine	*	
	24 µmol/mmol	fluoride	Creatinine in urine	*	
	7 mg/g	fluoride	Creatinine in urine	*	
	4 mg/g	fluoride	Creatinine in urine	*	

\* - For sampling details, please see the source document.

# Slovakia. BLVs (Biological Limit Value). Regulation no. 355/2006 concerning protection of workers exposed to chemical agents, Annex 2

Material	Value	Determinant	Specimen	Sampling Time	
Cerium fluoride (CAS 7758-88-5)	7 mg/g	fluorides	Creatinine in urine	*	
	4 mg/g	fluorides	Creatinine in urine	*	

\* - For sampling details, please see the source document.

#### Spain. BELs. INSST, Límites de Exposición Profesional Para Agentes Químicos, Table 3-Valores Límite Biológicos (VLB) Material Value Determinant Specimen Sampling Time

Material	Value	Determinant	Specimen	Sampling Time	
Cerium fluoride (CAS 7758-88-5)	3 mg/l	Fluoruros	Urine	*	

Material	Value	Determinant	Specimen	Sampling Time
	2 mg/l	Fluoruros	Urine	*
* - For sampling details, p	please see the source	document.		
Switzerland. SUVA Gre Material	enzwerte am Arbeit Value	splatz: Aktuelle BAT- Determinant	Werte Specimen	Sampling Time
Cerium fluoride (CAS 7758-88-5)	4 mg/l	Fluorid	Urine	*
* - For sampling details, p	please see the source	document.		
ecommended monitoring rocedures	Follow standar	d monitoring procedures	5.	
erived no effect levels DNELs)	Not available.			
redicted no effect oncentrations (PNECs)	Not available.			
xposure guidelines				
Hungary OELs: Skin de	esignation			
Cerium fluoride (CAS	7758-88-5)	Can be	absorbed throu	gh the skin.
2. Exposure controls				
ontrols	engineering co limits have not ventilation sho process enclos levels below re airborne levels	ntrols to maintain airbou been established, main uld be used. Ventilation ures, local exhaust vent	ne levels below tain airborne lev rates should be ilation, or other mits. If exposure	nclosures, local exhaust ventilation, or other recommended exposure limits. If exposure rels to an acceptable level. Good general matched to conditions. If applicable, use engineering controls to maintain airborne e limits have not been established, maintain as.
ndividual protection meas				
General information				ding to the CEN standards and in discussion . Use personal protective equipment as
Eye/face protection	Wear safety gl	asses with side shields (	or goggles).	
Skin protection				
- Hand protection	Wear appropria	ate chemical resistant gl	oves.	
- Other	Wear suitable	protective clothing.		
Respiratory protection		fficient ventilation, wear	suitable respira	tory equipment.
Thermal hazards	Wear appropria	ate thermal protective cl	othing, when ne	ecessary.
ygiene measures	washing after I		d before eating,	ve good personal hygiene measures, such as drinking, and/or smoking. Routinely wash taminants.
nvironmental exposure ontrols	Environmental	manager must be inforr	med of all major	releases.
ECTION 9: Physical	and chemical p	roperties		
1. Information on basic	-	-		
		p. op e. 000		

Physical state	Solid.
Form	Solid.
Colour	Not available.
Odour	Not available.
Melting point/freezing point	Not available.
Boiling point or initial boiling point and boiling range	Not available.
Flammability	Not available.
Upper/lower flammability or ex	plosive limits
Explosive limit - lower ( %)	Not available.

Explosive limit – upper (%)	Not available.
Flash point	Not available.
Auto-ignition temperature	Not available.
Decomposition temperature	Not available.
рН	Not available.
Kinematic viscosity	Not available.
Solubility	
Solubility (water)	Not available.
Partition coefficient (n-octanol/water) (log value)	Not available.
Vapour pressure	<0,0000001 kPa (25 °C (77 °F))
Density and/or relative density	Not available.
Vapour density	Not available.
Particle characteristics	Not available.
9.2. Other information	
9.2.1. Information with regard to physical hazard classes	No relevant additional information available.
9.2.2. Other safety characteris	tics
Molecular formula	CeF3

Molecular formula	CeF3
Molecular weight	197,11 g/mol

# **SECTION 10: Stability and reactivity**

10.1. Reactivity	The product is stable and non-reactive under normal conditions of use, storage and transport.
10.2. Chemical stability	Material is stable under normal conditions.
10.3. Possibility of hazardous reactions	No dangerous reaction known under conditions of normal use.
10.4. Conditions to avoid	Contact with incompatible materials.
10.5. Incompatible materials	Strong oxidising agents.
10.6. Hazardous decomposition products	No hazardous decomposition products are known.

# SECTION 11: Toxicological information

General information	Occupational exposure to the substance or mixture may cause adverse effects.	
Information on likely routes of	exposure	
Inhalation	Prolonged inhalation may be harmful.	
Skin contact	Due to lack of data the classification is not possible.	
Eye contact	Due to lack of data the classification is not possible.	
Ingestion	Due to lack of data the classification is not possible.	
Symptoms	Exposure may cause temporary irritation, redness, or discomfort.	
11.1. Information on hazard cla	asses as defined in Regulation (EC) No 1272/2008	
Acute toxicity	Due to partial or complete lack of data the classification is not possible.	
Skin corrosion/irritation	Due to partial or complete lack of data the classification is not possible.	
Serious eye damage/eye irritation	Due to partial or complete lack of data the classification is not possible.	
Respiratory sensitisation	Due to partial or complete lack of data the classification is not possible.	
Skin sensitisation	Due to partial or complete lack of data the classification is not possible.	
Germ cell mutagenicity	Due to partial or complete lack of data the classification is not possible.	
Carcinogenicity	Due to partial or complete lack of data the classification is not possible.	
IARC Monographs. Overall	Evaluation of Carcinogenicity	
Cerium fluoride (CAS 7758	3-88-5) 3 Not classifiable as to carcinogenicity to humans.	
Reproductive toxicity	Due to partial or complete lack of data the classification is not possible.	

Specific target organ toxicity - single exposure	Due to partial or complete lack of data the classification is not possible.
Specific target organ toxicity - repeated exposure	Due to partial or complete lack of data the classification is not possible.
Aspiration hazard	Due to partial or complete lack of data the classification is not possible.
Mixture versus substance information	No information available.
11.2. Information on other ha	zards
Endocrine disrupting properties	This substance does not have endocrine disrupting properties with respect to human health, as if does not meet the assessment criteria laid out in Regulations (EC) No 1907/2006, (EU) No 2017/2100 and (EU) 2018/605.
Other information	This product has no known adverse effect on human health.
SECTION 12: Ecological i	nformation

### **SECTION 12: Ecological information**

12.1. Toxicity	Due to partial or complete lack of data the classification for hazardous to the aquatic environment, is not possible.
12.2. Persistence and degradability	No data is available on the degradability of this product.
12.3. Bioaccumulative potential	No data available.
Partition coefficient n-octanol/water (log Kow)	Not available.
Bioconcentration factor (BCF)	Not available.
12.4. Mobility in soil	No data available.
12.5. Results of PBT and vPvB assessment	This substance does not meet vPvB / PBT criteria of Regulation (EC) No 1907/2006, Annex XIII.
12.6. Endocrine disrupting properties	This substance does not have endocrine disrupting properties with respect to the environment, as it does not meet the assessment criteria laid out in Regulations (EC) No 1907/2006, (EU) No 2017/2100 and (EU) 2018/605.
12.7. Other adverse effects	No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation potential, endocrine disruption, global warming potential) are expected from this component.

## 12.8. Additional information

## Estonia Dangerous substances in soil Data

Cerium fluoride (CAS 7758-88-5)	Fluoride (As F ion) 1200 mg/kg
	Fluoride (As F ion) 2000 mg/kg
	Fluoride (As F ion) 450 mg/kg

## **SECTION 13: Disposal considerations**

## 13.1. Waste treatment methods

Residual waste	Dispose of in accordance with local regulations.
Contaminated packaging	No special precautions.
EU waste code	Not available.
Special precautions	Dispose in accordance with all applicable regulations.

# **SECTION 14: Transport information**

## ADR

14.1. UN number 14.2. UN proper shipping name	Not regulated as dangerous goods. Not regulated as dangerous goods.
14.3. Transport hazard clas	ss(es)
Class	Not assigned.
Subsidiary risk	-
Hazard No. (ADR)	Not assigned.
Tunnel restriction code	Not assigned.
14.4. Packing group	-
14.5. Environmental hazards	No.
14.6. Special precautions for user	Not assigned.

### RID

RID	
14.1. UN number	Not regulated as dangerous goods.
14.2. UN proper shipping	Not regulated as dangerous goods.
name	5 5 5
14.3. Transport hazard clas	ss(es)
Class	Not assigned.
	Not assigned.
Subsidiary risk	-
14.4. Packing group	-
14.5. Environmental	No.
hazards	
14.6. Special precautions	Not assigned.
for user	
ADN	
14.1. UN number	Not regulated as dangerous goods.
14.2. UN proper shipping	Not regulated as dangerous goods.
name	not regulated as dangerous gooder
14.3. Transport hazard clas	ss(es)
Class	
	Not assigned.
Subsidiary risk	-
14.4. Packing group	-
14.5. Environmental hazards	No.
14.6. Special precautions	Not assigned.
for user	
IATA	
	Not regulated as depressions goods
14.1. UN number	Not regulated as dangerous goods.
14.2. UN proper shipping	Not regulated as dangerous goods.
name	()
14.3. Transport hazard clas	
Class	Not assigned.
Subsidiary risk	-
14.4. Packing group	-
14.5. Environmental	No.
hazards	
14.6. Special precautions	Not assigned.
for user	
IMDG	
14.1. UN number	Not regulated as dangerous goods.
14.2. UN proper shipping	Not regulated as dangerous goods.
name	
14.3. Transport hazard clas	ss(es)
Class	Not assigned.
Subsidiary risk	-
14.4. Packing group	-
14.4. Packing group 14.5. Environmental hazar	- do
Marine pollutant	No.
EmS	Not assigned.
14.6. Special precautions	Not assigned.
for user	

## **SECTION 15: Regulatory information**

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

### **EU** regulations

**Regulation (EC) No. 1005/2009 on substances that deplete the ozone layer, Annex I and II, as amended** Not listed.

Regulation (EU) 2019/1021 On persistent organic pollutants (recast), as amended

Not listed.

Regulation (EU) No. 649/2012 concerning the export and import of dangerous chemicals, Annex I, Part 1 as amended

Not listed.

Regulation (EU) No. 649/2012 concerning the export and import of dangerous chemicals, Annex I, Part 2 as amended

Not listed.

Degulation (EU) No. 64	0/2012 concerning the expert and import of depressions chemicals. Append T. Port 2 ac
amended	9/2012 concerning the export and import of dangerous chemicals, Annex I, Part 3 as
	9/2012 concerning the export and import of dangerous chemicals, Annex V as amended
Not listed.	6/2006 Annex II Pollutant Release and Transfer Registry, as amended
Cerium fluoride (CAS	
	07/2006, REACH Article 59(10) Candidate List as currently published by ECHA
Not listed.	
Authorisations	
Regulation (EC) No. 19 Not listed.	07/2006, REACH Annex XIV Substances subject to authorization, as amended
Restrictions on use	
Regulation (EC) No. 19	07/2006, REACH Annex XVII Substances subject to restriction on marketing and use, as of restriction given for the associated entry number should be considered
Not listed. Directive 2004/37/EC: mutagens at work, as a Not listed.	on the protection of workers from the risks related to exposure to carcinogens and mended.
	on Marketing and Use of Explosive Precursors, Annex I, as amended
	on Marketing and Use of Explosive Precursors, Annex II, as amended
Other regulations	The product is classified and labelled in accordance with EC directives or respective national laws The product is classified and labelled in accordance with Regulation (EC) 1272/2008 (CLP Regulation) as amended. This Safety Data Sheet complies with the requirements of Regulation (EC) No 1907/2006, as amended.
National regulations	Follow national regulation for work with chemical agents.
	Follow national regulation for work with chemical agents in accordance with Directive 98/24/EC, as amended.
France regulations	
France INRS Table of O	ccupational Diseases
Cerium fluoride (CAS	7758-88-5) Affections professionnelles provoquées par le fluor, l'acide fluorhydrique et ses sels minéraux 32
15.2. Chemical safety assessment	No Chemical Safety Assessment has been carried out.
SECTION 16: Other inf	formation
List of abbreviations	
	ADN: European Agreement Concerning the International Carriage of Dangerous Goods by Inland Waterways.
	ADR: Agreement concerning the International Carriage of Dangerous Goods by Road. AGW: Occupational threshold limit value (Arbeitsplatzgrenzwert – Germany). CAS: Chemical Abstract Service.
	CEN: European Committee for Standardization.
	IATA: International Air Transport Association.
	IBC Code: International Code for the Construction and Equipment of Ships Carrying Dangerous Chemicals in Bulk.
	IMDG: International Maritime Dangerous Goods.
	MAC: Maximum Allowed Concentration. MARPOL: International Convention for the Prevention of Pollution from Ships.
	PBT: Persistent, bioaccumulative and toxic.
	RID: Regulations concerning the International Carriage of Dangerous Goods by Rail.
	STEL: Short term exposure limit.
	TLV: Threshold Limit Value.

- TWA: Time Weighted Average.
- VLE: Exposure Limit Value.

Not available.

- VME: Exposure Average Value.
- vPvB: Very persistent and very bioaccumulative.

## References

Information on evaluation method leading to the classification of mixture	Not applicable.
Full text of any statements, which are not written out in full under sections 2 to 15	H302 Harmful if swallowed. H315 Causes skin irritation. H319 Causes serious eye irritation. H335 May cause respiratory irritation.
Revision information	This document has undergone significant changes and should be reviewed in its entirety.
Training information	Follow training instructions when handling this material.
Further information	Transportation Emergency Call Chemtrec at: US: 800.424.9300 International: 703.741.5970 Spain: 900.868.538 Switzerland: 0800.564.402 Chemtrec's toll free, mobile-enabled number in Germany – 0800 1817059 South Korea Toll-free Number – 080-880-0468
Disclaimer	This document has been prepared using data from sources considered to be technically reliable and the information is believed to be correct. Materion makes no warranties, expressed or implied, as to the accuracy of the information contained herein. Materion cannot anticipate all conditions under which this information and its products may be used and the actual conditions of use are beyond its control. The user is responsible to evaluate all available information when using this product for any particular use and to comply with all Federal, State, Provincial and Local laws, statutes and regulations.