



# FLUOPRAY™ PSF

## Safety Data Sheet

according to Regulation (EC) No. 453/2010

Date of issue: 03/03/2011

Revision date: 29/06/2012

Version: 5.1

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

#### 1.1. Product identifier

Product form	: Substance
Trade name	: FLUOPRAY™ PSF
Chemical name	: Dipotassium hexafluorosilicate
EC index no	: 009-012-00-0
EC no	: 240-896-2
CAS No	: 16871-90-2
REACH registration No	: 01-2119539421-45-0000
Product code	: PR-015
Formula	: K <sub>2</sub> SiF <sub>6</sub>
Synonyms	: Potassium silicofluoride; Potassium hexafluorosilicate; Potassium fluorosilicate

#### 1.2. Relevant identified uses of the substance or mixture and uses advised against

##### 1.2.1. Relevant identified uses

Use of the substance/mixture	: Substance used as such, in formulation or in formulation of products for : Opalizing agent Textile industries brazing, soldering flux for aluminium Ceramic tiles
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##### 1.2.2. Uses advised against

Title	Use descriptors	Reason
FLUOPRAY PSF		None

Full text of use descriptors: see section 16

#### 1.3. Details of the supplier of the safety data sheet

PRAYON S.A.  
Rue Joseph Wauters, 144  
B-4480 Engis - Belgique-Belgium  
T +32 (0)4 273 92 11 - F +32 (0)4 273 96 35  
[Reachcustomer@prayon.be](mailto:Reachcustomer@prayon.be) - [www.prayon.be](http://www.prayon.be)

#### 1.4. Emergency telephone number

Country	Organisation/Company	Address	Emergency number
ICELAND	Iceland Poisons Information Centre Landspítali University Hospital	Fossvogi 108Reykjavik	+354 525 111 +354 543 2222
IRELAND (REPUBLIC OF)	National Poisons Information Centre Beaumont Hospital	Beaumont Hospital Beaumont Road 9Dublin	: +353 1 8379964
ISRAEL	Israel Poisons Information Centre Rambam Medical Centre	PO Box 9602 31096Haifa	+972 4 854 1900
UNITED KINGDOM	National Poisons Information Service (Belfast Centre) Royal Victoria Hospital	Grosvenor Road BT12 6BABelfast	0870 600 6266 (UK only),
UNITED KINGDOM	National Poisons Information Service (Birmingham Centre) City Hospital	Dudley Road B18 7QHBirmingham	0870 600 6266 (UK only)
UNITED KINGDOM	NPIS Edinburgh (Scottish Poisons Information Bureau) Royal Infirmary of Edinburgh	51 Little France Crescent EH16 4SAEdinburgh	0870 600 6266 (UK only)
UNITED KINGDOM	Guy's & St Thomas' Poisons Unit Medical Toxicology Unit, Guy's & St Thomas' Hospital Trust	Avonley Road SE14 5ERLondon	0870 243 2241
UNITED KINGDOM	National Poisons Information Service (Newcastle Centre) Regional Drugs and Therapeutics Centre, Wolfson Unit	Claremont Place Newcastle-upon-Tyne NE1 4LPNewcastle	0870 600 6266 (UK only)
UNITED KINGDOM	National Poisons Information Service (Cardiff Centre) Gwenwyn Ward, Llandough Hospital	Penarth CF64 2XXCardiff	0870 600 6266 (UK only)

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### SECTION 2: Hazards identification

#### 2.1. Classification of the substance or mixture

##### Classification according to Regulation (EC) No. 1272/2008 [CLP]

Acute Tox. 3 (Dermal) H311  
Acute Tox. 3 (Inhalation) H331  
Acute Tox. 3 (Oral) H301

Full text of H-phrases: see section 16

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

T; R23/24/25

Full text of R-phrases: see section 16

#### Adverse physicochemical, human health and environmental effects

No additional information available

#### 2.2. Label elements

##### Labelling according to Regulation (EC) No. 1272/2008 [CLP]

Hazard pictograms (CLP) :



GHS06

Signal word (CLP) :

Danger

Hazard statements (CLP) :

H301 - Toxic if swallowed  
H311 - Toxic in contact with skin  
H331 - Toxic if inhaled

Precautionary statements (CLP) :

P261 - Avoid breathing spray, mist, gas, fume, dust, vapours  
P280 - Wear protective gloves, protective clothing, eye protection, face shield  
P301+P310 - IF SWALLOWED: immediately call a POISON CENTER or doctor/physician  
P304+P340 - IF INHALED: remove victim to fresh air and keep at rest in a position comfortable for breathing  
P405 - Store locked up  
P302+P352 - IF ON SKIN: Wash with plenty of soap and water

#### 2.3. Other hazards

This substance/mixture does not meet the PBT criteria of REACH regulation, annex XIII

This substance/mixture does not meet the vPvB criteria of REACH regulation, annex XIII

### SECTION 3: Composition/information on ingredients

#### 3.1. Substance

Name : FLUOPRAY™ PSF  
CAS No : 16871-90-2  
EC no : 240-896-2  
EC index no : 009-012-00-0

Name	Product identifier	%	Classification according to Directive 67/548/EEC
Dipotassium hexafluorosilicate	(CAS No)16871-90-2 (EC no)240-896-2 (EC index no)009-012-00-0	>= 98,5	T; R23/24/25

Name	Product identifier	%	Classification according to Regulation (EC) No. 1272/2008 [CLP]
Dipotassium hexafluorosilicate	(CAS No)16871-90-2 (EC no)240-896-2 (EC index no)009-012-00-0	>= 98,5	Acute Tox. 3 (Dermal), H311 Acute Tox. 3 (Inhalation), H331 Acute Tox. 3 (Oral), H301

Full text of R- and H-phrases: see section 16

#### 3.2. Mixture

Not applicable

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### SECTION 4: First aid measures

#### 4.1. Description of first aid measures

- First-aid measures after inhalation : Remove victim to fresh air. If breathing is difficult, give oxygen. If breathing stops, perform cardio pulmonary resuscitation (CPR). Take to hospital.
- First-aid measures after skin contact : Wash immediately with plenty of soap and water. Remove contaminated clothing and shoes. Wash contaminated clothing before reuse. Seek medical attention if ill effect or irritation develops.
- First-aid measures after eye contact : In case of eye contact, immediately rinse with clean water for 10-15 minutes. Call a doctor.
- First-aid measures after ingestion : If swallowed, do not induce vomiting; seek medical advice immediately and show this container or label.

#### 4.2. Most important symptoms and effects, both acute and delayed

No additional information available

#### 4.3. Indication of any immediate medical attention and special treatment needed

A supervision of the acid-basic balance and the calcium rate in the serum of the blood is necessary.

### SECTION 5: Firefighting measures

#### 5.1. Extinguishing media

- Suitable extinguishing media : Powders. CO2. Sand.
- Unsuitable extinguishing media : water.

#### 5.2. Special hazards arising from the substance or mixture

- Fire hazard : Not flammable.
- Explosion hazard : In the presence of water, contact with metals may produce hydrogen which may form explosive mixtures with air.

#### 5.3. Advice for firefighters

- Protection during firefighting : Total impervious protective suits, gloves, and boots must be worn.

### SECTION 6: Accidental release measures

#### 6.1. Personal precautions, protective equipment and emergency procedures

- General measures : Keep public away from danger area. See section 8.2.

##### 6.1.1. For non-emergency personnel

No additional information available

##### 6.1.2. For emergency responders

No additional information available

#### 6.2. Environmental precautions

Prevent entry to sewers and soil. Notify authorities if product enters sewers or public waters.

#### 6.3. Methods and material for containment and cleaning up

- Methods for cleaning up : Sweep or shovel spills into appropriate container for disposal. Avoid dust production.

#### 6.4. Reference to other sections

See section 8 and 13 for more information.

### SECTION 7: Handling and storage

#### 7.1. Precautions for safe handling

- Precautions for safe handling : Do not breathe dust. Always wash your hands immediately after handling this product, and once again before leaving the workplace. Remove contaminated clothing and shoes. Wash clothing before re-using. Packagings, even those that have been emptied, will retain product residue. Always obey safety warnings and handle empty packagings as if they were full. Avoid all contact with this substance.
- Hygiene measures : When using do not eat, drink or smoke. Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work. Remove contaminated clothing and shoes.

#### 7.2. Conditions for safe storage, including any incompatibilities

- Storage conditions : Store in dry, cool, well-ventilated area. Keep away from food, drink and animal feeding stuffs.

#### 7.3. Specific end use(s)

No additional information available

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### SECTION 8: Exposure controls/personal protection

#### 8.1. Control parameters

FLUOPRAY™ PSF(16871-90-2)		
EU	IOELV TWA (mg/m <sup>3</sup> )	2,5 mg/m <sup>3</sup> Expressed in F
Belgium	Limit value (mg/m <sup>3</sup> )	2,5 mg/m <sup>3</sup> Expressed in F
Belgium	Remark*	VLB: 8 mgF/l

FLUOPRAY™ PSF(16871-90-2)	
DNEL/DMEL (Workers)	
Acute - systemic effects, inhalation	2,5 mg/m <sup>3</sup>
Acute - local effects, inhalation	2,5 mg/m <sup>3</sup>
Long-term - systemic effects, inhalation	2,5 mg/m <sup>3</sup>
Long-term - local effects, inhalation	2,5 mg/m <sup>3</sup>
PNEC (Water)	
PNEC aqua (freshwater)	0,9 mg/l
PNEC aqua (marine water)	0,9 mg/l
PNEC (STP)	
PNEC sewage treatment plant	51 mg/l

: 2.5 % F Belgium 2010 Eu, SCOEL, 1998

#### 8.2. Exposure controls

Appropriate engineering controls	: Use as far as possible in a closed system. Monitor the atmosphere at regular intervals. Emergency eye wash fountains and safety showers should be available in the immediate vicinity of any potential exposure. Local exhaust and general ventilation must be adequate to meet exposure standards. Please refer to the annex (exposure scenarios).
Hand protection	: Use gloves resistant to chemical products corresponding to EN 374:3". Take advice to gloves' manufacturer .".
Eye protection	: Safety glasses with side shields.
Skin and body protection	: Protective clothing (with elasticated cuffs and closed neck).
Respiratory protection	: Use respiratory protection mask according to EN 140 or EN 405 with filter type P3 according to EN 143:2000 or FFP3 according to EN 149:2001.
Environmental exposure controls	: Avoid release to the environment.

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### SECTION 9: Physical and chemical properties

#### 9.1. Information on basic physical and chemical properties

Physical state	: Powder
Colour	: white.
Odour	: odourless.
Odour threshold	: Not applicable
pH	: No data available
Relative evaporation rate (butylacetate=1)	: No data available
Melting point	: 375 °C Thermal decomposition
Freezing point	: No data available
Boiling point	: 375 °C Thermal decomposition
Flash point	: Not flammable
Self ignition temperature	: Not applicable
Decomposition temperature	: 375 °C
Flammability (solid, gas)	: Not flammable
Vapour pressure	: Negligible.
Relative vapour density at 20 °C	: No data available
Relative density	: No data available
Density	: 2,6 (20°C)
Solubility	: Water: 1,18 g/l (20 °C)
Log Pow	: Not applicable
Log Kow	: Not applicable
Viscosity, kinematic	: Not applicable
Viscosity, dynamic	: Not applicable
Explosive properties	: Product is not explosive.
Oxidising properties	: Non oxidizing material according to EC criteria.
Explosive limits	: Not applicable

#### 9.2. Other information

No additional information available

### SECTION 10: Stability and reactivity

#### 10.1. Reactivity

Stable under normal conditions (Handling and storage).

#### 10.2. Chemical stability

Stable under normal conditions (Handling and storage).

#### 10.3. Possibility of hazardous reactions

In the presence of water, contact with metals can produce hydrogen which may form flammable mixtures with air.

#### 10.4. Conditions to avoid

Moisture. Heating.

#### 10.5. Incompatible materials

acids. Release of fluoric acid. Aluminium. Cyanides.

#### 10.6. Hazardous decomposition products

Hydrofluoric Acid.

### SECTION 11: Toxicological information

#### 11.1. Information on toxicological effects

Acute toxicity : Toxic in contact with skin. Toxic if inhaled. Toxic if swallowed.

FLUOPRAY™ PSF(16871-90-2)	
LD50 oral rat	70 mg/kg bodyweight OECD 401
LC50 inhalation rat (mg/l)	1814 mg/l OECD 403

Skin corrosion/irritation	: Not classified. Not irritating. rabbit. OECD 404
Serious eye damage/irritation	: Not classified. Not irritating. OECD 437. OECD 404
Respiratory or skin sensitisation	: Did not cause sensitisation
Germ cell mutagenicity	: Negative. OECD 471. OECD 474
Carcinogenicity	: No evidence of carcinogenicity in laboratory animals. IARC

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Reproductive toxicity : Fertility: NOAEL: 10mg/kg bw/day. Developmental toxicity: NOAEL: 14mg/kg bw/day  
Specific target organ toxicity (single exposure) : Not classified

FLUOPRAY™ PSF(16871-90-2)	
LOAEL (inhalation, rat, dust/mist/fume)	0,45 mg/l/4h rat, OECD 403

Specific target organ toxicity (repeated exposure) : Not classified

FLUOPRAY™ PSF(16871-90-2)	
NOAEL (oral, rat, 90 days)	25 mg/kg bodyweight/day Similar to:EPA OPP 83-5

Aspiration hazard : Not classified

## SECTION 12: Ecological information

### 12.1. Toxicity

FLUOPRAY™ PSF(16871-90-2)	
LC50 fishes 1	37,5 mg/l (96h) Dario rerio, OECD 203
EC50 Daphnia 1	35,4 mg/l (48h) - daphnia magna, OECD 202
ErC50 (algae)	18 mg/l (72h) - Pseudokirchnerella subcapitata, OECD 201
NOEC chronic fish	4 mg/l (21 d), Oncorhynchus mykiss
NOEC (additional information)	ACTIVATED SLUDGE NOEC (3h): 510 mg/L; (16h-72h): 7,1-226 mg/L

### 12.2. Persistence and degradability

FLUOPRAY™ PSF(16871-90-2)	
Persistence and degradability	Not relevant. (inorganic substance).

### 12.3. Bioaccumulative potential

FLUOPRAY™ PSF(16871-90-2)	
Log Pow	Not applicable
Log Kow	Not applicable
Bioaccumulative potential	small.

### 12.4. Mobility in soil

FLUOPRAY™ PSF(16871-90-2)	
Ecology - soil	No data available.

### 12.5. Results of PBT and vPvB assessment

FLUOPRAY™ PSF(16871-90-2)	
This substance/mixture does not meet the PBT criteria of REACH regulation, annex XIII	
This substance/mixture does not meet the vPvB criteria of REACH regulation, annex XIII	

### 12.6. Other adverse effects

Other adverse effects : No.

## SECTION 13: Disposal considerations

### 13.1. Waste treatment methods

Waste treatment methods : Hazardous waste due to toxicity. Dispose of this material and its container at hazardous or special waste collection point. Dispose in a safe manner in accordance with local/national regulations.

Additional information : Empty packaging can have residues or dusts and are subject to proper waste disposal, as above.

Ecology - waste materials : See the european waste catalogue.

## SECTION 14: Transport information

In accordance with ADR / RID / IMDG / IATA / ADN

### 14.1. UN number

UN-No (ADR) : 2655  
UN-No.(IATA) : 2655  
UN-No. (IMDG) : 2655

### 14.2. UN proper shipping name

Proper Shipping Name : POTASSIUM FLUOROSILICATE  
Transport document description : UN 2655 POTASSIUM FLUOROSILICATE, 6.1, III, (E)

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### 14.3. Transport hazard class(es)

Class (UN) : 6.1  
Classification code (UN) : T5  
Class (IATA) : 6.1  
Class (IMDG) : 6.1  
Hazard labels (UN) : 6.1



Division (IATA) : 6.1

### 14.4. Packing group

Packing group (UN) : III  
Packing group (IMDG) : III

### 14.5. Environmental hazards

Other information : No supplementary information available.

### 14.6. Special precautions for user

#### 14.6.1. Overland transport

Hazard identification number (Kemler No.) : 60  
Classification code (UN) : T5  
Orange plates :



Tunnel restriction code : E  
LQ : LQ09  
Excepted quantities (ADR) : E1

#### 14.6.2. Transport by sea

MFAG-No : 151

#### 14.6.3. Air transport

No additional information available

#### 14.6.4. Inland waterway transport

No additional information available

### 14.7. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable

## SECTION 15: Regulatory information

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

#### 15.1.1. EU-Regulations

No REACH Annex XVII restrictions  
Contains no REACH candidate substance  
Other information, restriction and prohibition regulations : Not required.

#### 15.1.2. National regulations

SUBSTANCE LISTED IN THE ANNEX I OF DIRECTIVE 2003/105/CE AMENDING DIRECTIVE 96/82/CE (CONTROL OF MAJOR - ACCIDENT HAZARDS INVOLVING DANGEROUS SUBSTANCES)

### 15.2. Chemical safety assessment

A Chemical Safety Assessment has been carried out.

## SECTION 16: Other information

Indication of changes:  
according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EC) No. 453/2010.

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## Safety Data Sheet

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Data sources	: Reach dossier.
Abbreviations and acronyms	: ADN: European Agreement concerning international carriage of Dangerous goods by Inland waterways ADR: European Agreement concerning international carriage of Dangerous goods by Road AF : Assessment factor BCF : Bioconcentration factor Bw: Body weight CAS: Chemical Abstracts Service CLP : Classification, labelling, packaging CSR: Chemical Safety Report DMEL : Derived maximum effect level DNEL: Derivative No effect Level EC: European Community ELV : Emission limit values EN: European Norm EUH: European Hazard Statement EWC : European Waste catalogue IATA: International Air Transport Association ICAO: International Civil Aviation Organization IMDG: International Maritime Dangerous Goods LC50: Median lethal concentration LD50 : Median lethal dose NOAEL : No-observed-adverse-effect-level NOEC : No observed effect concentration NOEL : No observed effect level OEL : Operator exposure level PBT: Persistent, bioaccumulative, Toxic PEC : Predicted effect level PNEC: Predicted No effect Concentration REACH : Registration, evaluation and autorisation of chemicals RID: Regulations concerning the international carriage of dangerous goods by rail STEL: Short Term Exposure Limit TWA : Time weighted average vPvB: Very persistent, very bioaccumulative.
Training advice	: None.

Full text of R-, H- and EUH-phrases::

Acute Tox. 3 (Dermal)	Acute toxicity (dermal), Category 3
Acute Tox. 3 (Inhalation)	Acute toxicity (inhal.), Category 3
Acute Tox. 3 (Oral)	Acute toxicity (oral), Category 3
H301	Toxic if swallowed
H311	Toxic in contact with skin
H331	Toxic if inhaled
R23/24/25	Toxic by inhalation, in contact with skin and if swallowed
T	Toxic

### SDS EU (REACH Annex II)

*This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product. DISCLAIMER OF LIABILITY The information in this MSDS was obtained from sources which we believe are reliable. However, the information is provided without any warranty, express or implied, regarding its correctness. The conditions or methods of handling, storage, use or disposal of the product are beyond our control and may be beyond our knowledge. For this and other reasons, we do not assume responsibility and expressly disclaim liability for loss, damage or expense arising out of or in any way connected with the handling, storage, use or disposal of the product. This MSDS was prepared and is to be used only for this product. If the product is used as a component in another product, this MSDS information may not be applicable*



<b>PRAYON S.A.</b>	<b>Dipotassium hexafluorosilicate</b> <b>(PSF)</b> <b>EC number : 240-896-2</b> <b>CAS number : 16871-90-2</b>	<b>Exposure scenarios</b>
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## **SUMMARY OF EXPOSURE SCENARIOS**

### **Dipotassium hexafluorosilicate**



PRAYON S.A.	<p style="text-align: center;"><b>Dipotassium hexafluorosilicate</b> (PSF) EC number : 240-896-2 CAS number : 16871-90-2</p>	Exposure scenarios
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PRAYON S.A.	<b>Dipotassium hexafluorosilicate</b> (PSF) EC number : 240-896-2 CAS number : 16871-90-2	Exposure scenarios
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## 1 Introduction

This document aims to show exposure scenarios performed for potassium hexafluorosilicate which should be included in its extended safety data sheet as annexes. Exposure scenarios have been developed based on the chemical safety report submitted to ECHA as part of the registration dossier of potassium hexafluorosilicate.

The following sections illustrate how individual exposure scenarios would look like.

## 2 EXPOSURE SCENARIO 2, formulation

This section displays a proposal for the exposure scenario 2, formulation

### EXPOSURE SCENARIO 2, FORMULATION

ES2 Formulation		
Systematic title based on use descriptor	Process Category, PROC	PROC 3 Used in closed batch process. PROC 9 Transfer into small containers.
	Environmental Release Category, ERC	ERC 2
Processes, tasks, activities covered	Formulation of mixtures.	
<b>Exposure Scenario</b>		
<b>Operational conditions and risk management measures</b>		
<p>Dipotassium hexafluorosilicate is generally used in an indoors closed system. The process runs continuously for long periods, up to 300. Workers are not exposed to the substances during any of the activities carried out for the correct use. Systems involved in these activities show a high level of containment, which minimises the potential exposure. Pipelines and vessels are sealed and insulated. Dipotassium hexafluorosilicate is transferred into small containers using appropriate and duly revised facilities.</p> <p>Workers involved in general activities, sampling steps and transfer of materials are adequately trained to carry out any specific task related to the production process. Furthermore, workers wear appropriate protection, such as gloves or respiratory masks, intending to minimise or eliminate the exposure and risk.</p>		
<b>Control of workers exposure</b>		
Product characteristic (including package design affecting exposure)	Physical state and colour	White solid
	Vapour pressure of substance	Negligible
	Solubility	1.18 g/L
	Substance in preparations	No
	Dustiness	High
Frequency and duration of use/exposure	Duration of activity	>4 hours
Other given operational conditions affecting workers exposure	Setting (indoor/outdoor)	Indoor
Technical conditions and measures at process level (source) to prevent release	Level of containment	Used in closed batch process (synthesis or formulation).
Technical conditions and	Local Exhaust Ventilation	Yes

<b>PRAYON S.A.</b>	<b>Dipotassium hexafluorosilicate</b> (PSF) EC number : 240-896-2 CAS number : 16871-90-2	<b>Exposure scenarios</b>
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<b>measures to control dispersion from source towards the worker</b>	Efficiency rate	Inhalation: 90%; Dermal: 90%]
<b>Conditions and measures related to personal protection, hygiene and health evaluation</b>	Workers wear appropriate protection, such as gloves or respiratory masks	

<b>Control of environmental exposure</b>				
<b>Amounts used</b>	Daily at point source	≤19.41 tonnes/day		
	Annually at point source	≤1.941E3 tonnes/year		
	Percentage of tonnage used at regional scale	100%		
<b>Frequency and duration of use</b>	Pattern of release	The process runs continuously for long periods, up to 300		
<b>Environment factors not influenced by risk management</b>	Flow rate of receiving surface water	≥1.8E4 m <sup>3</sup> /day		
<b>Conditions and measures related to municipal sewage treatment plant</b>	Municipal STP	Yes [Water: 0.1%]		
	Discharge rate of STP	≥2E3 m <sup>3</sup> /day		
	Application of the STP sludge on agricultural soil	Yes		
<b>Exposure estimation</b>				
Below given exposure estimates are based on the PROC with the highest exposure levels in this scenario.				
<b>Workers exposure</b>	Exposure estimate	DNEL	Comment	
<b>Inhalation (mg/m<sup>3</sup>)</b>	2 mg/m <sup>3</sup>	2.5 mg/m <sup>3</sup>	Long term, Systemic. Method: TRA workers Name: TRA workers	
<b>Environmental exposure estimation</b>				
<b>Release factor after on site risk management Air (%)</b>	1.309E-4	<b>Local release to air (kg/day)</b>	0.035	
<b>Release factor after on site risk management Water (%)</b>	1.309E-4	<b>Local release to water (kg/day)</b>	0.035	
<b>Environmental exposure</b>	<b>PEC</b>	<b>PNEC</b>	<b>RCR</b>	<b>Comment</b>
<b>In STP / untreated wastewater(mg/l)</b>	0.017	51	3.431E-4	
<b>In local freshwater (mg/l)</b>	0.005	0.9	0.006	
<b>In local soil (mg/kg dw)</b>	1.41E-4	11	1.282E-5	
<b>In local marine water (mg/l)</b>	5.03E-4	0.9	5.589E-4	
<b>In air (mg/m<sup>3</sup>)</b>	8.01E-6	Not available		
<b>Additional good practice advice beyond the REACH CSA</b>				

PRAYON S.A.	<b>Dipotassium hexafluorosilicate</b> (PSF) EC number : 240-896-2 CAS number : 16871-90-2	Exposure scenarios
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### 3 EXPOSURE SCENARIO 3, opalizing agent

This section displays a proposal for the exposure scenario 3, opalizing agent.

#### EXPOSURE SCENARIO 3, OPALIZING AGENT

ES3 Opalizing agent		
Systematic title based on use descriptor	Process Category, PROC	PROC 3 Use in closed batch process. PROC 6 Calendering operations. PROC 9 Transfer of substance into small containers.
	Environmental Release Category, ERC	ERC 5 ERC 8c
Processes, tasks, activities covered	Workers uses in Industrial setting. Professional workers uses.	
<b>Exposure Scenario</b>		
<b>Operational conditions and risk management measures</b>		
<p>Dipotassium hexafluorosilicate is generally used in an indoors closed system. The process runs continuously for long periods, up to 300. Workers are not exposed to the substances during any of the activities carried out for the correct use. Systems involved in these activities show a high level of containment, which minimises the potential exposure. Pipelines and vessels are sealed and insulated. Dipotassium hexafluorosilicate is transferred into small containers using appropriate and duly revised facilities.</p> <p>Workers involved in general activities, sampling steps and transfer of materials are adequately trained to carry out any specific task related to the production process. Furthermore, workers wear appropriate protection, such as gloves or respiratory masks, intending to minimise or eliminate the exposure and risk.</p>		
<b>Control of workers exposure</b>		
Product characteristic (including package design affecting exposure)	Physical state and colour	White solid
	Vapour pressure of substance	Negligible
	Solubility	1.18 g/L
	Substance in preparations	No
	Dustiness	High
Frequency and duration of use/exposure	Duration of activity	>4 hours
Other given operational conditions affecting workers exposure	Setting (indoor/outdoor)	Indoor
Technical conditions and measures at process level (source) to prevent release	Level of containment	Used in closed batch process (synthesis or formulation).
Technical conditions and measures to control dispersion from source towards the worker	Local Exhaust Ventilation	Yes
	Efficiency rate	Inhalation: 90%; Dermal: 95%
Conditions and measures related to personal protection, hygiene and health evaluation	Workers in Industrial setting wear appropriate protection, such as gloves or respiratory masks. Professional workers use respiratory protection capable offering a 90% reduction in inhaled concentrations of the substance	

<b>PRAYON S.A.</b>	<b>Dipotassium hexafluorosilicate</b> (PSF) EC number : 240-896-2 CAS number : 16871-90-2	<b>Exposure scenarios</b>
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<b>Control of environmental exposure</b>					
<b>Amounts used</b>	Daily at point source	<b>Industrial setting</b>	<b>Professional setting</b>		
		≤0.4 tonnes/day	=4.4E-6 tonnes/day		
	Annually at point source	≤8 tonnes/year			
	Percentage of tonnage used at regional scale	100%			
<b>Frequency and duration of use</b>	Pattern of release	The process runs continuously for long periods, up to 300			
<b>Environment factors not influenced by risk management</b>	Flow rate of receiving surface water	≥1.8E4 m <sup>3</sup> /day			
<b>Conditions and measures related to municipal sewage treatment plant</b>	Municipal STP	Yes [Water: 0.1%]			
	Discharge rate of STP	≥2E3 m <sup>3</sup> /day			
	Application of the STP sludge on agricultural soil	Yes			
<b>Exposure estimation</b>					
Below given exposure estimates are based on the PROC with the highest exposure levels in this scenario.					
<b>Workers exposure</b>	Exposure estimate Industrial setting	Exposure estimate Professional setting	DNEL	Comment	
<b>Inhalation (mg/m<sup>3</sup>)</b>	2.5 mg/m <sup>3</sup>	1 mg/m <sup>3</sup>	2.5 mg/m <sup>3</sup>	Long term, Systemic. Method: TRA workers Name: TRA workers	
<b>Environmental exposure estimation</b>					
	Industrial setting	Professional setting		Industrial setting	Professional setting
<b>Release factor after on site risk management Air (%)</b>	0.009	15	<b>Local release to air (kg/day)</b>	0.035	0
<b>Release factor after on site risk management Water (%)</b>	0.088	7.955E3	<b>Local release to water (kg/day)</b>	0.35	0.35
<b>Environmental exposure (industrial setting)</b>		<b>PEC</b>	<b>PNEC</b>	<b>RCR</b>	<b>Comment</b>
<b>In STP / untreated wastewater(mg/l)</b>		0.175	51	0.003	
<b>In local freshwater (mg/l)</b>		0.021	0.9	0.023	
<b>In local soil (mg/kg dw)</b>		0.001	11	1E-4	
<b>In local marine water (mg/l)</b>		0.002	0.9	0.002	
<b>In air (mg/m<sup>3</sup>)</b>		5.47E-7	Not available		
<b>Environmental exposure (professional setting)</b>		<b>PEC</b>	<b>PNEC</b>	<b>RCR</b>	<b>Comment</b>
<b>In STP / untreated wastewater(mg/l)</b>		0.175	51	0.003	
<b>In local freshwater (mg/l)</b>		0.021	0.9	0.023	
<b>In local soil (mg/kg dw)</b>		0.001	11	1E-4	
<b>In local marine water (mg/l)</b>		0.002	0.9	0.002	
<b>In air (mg/m<sup>3</sup>)</b>		1.53E-8	Not available		
<b>Additional good practice advice beyond the REACH CSA</b>					

PRAYON S.A.	<b>Dipotassium hexafluorosilicate</b> (PSF) EC number : 240-896-2 CAS number : 16871-90-2	Exposure scenarios
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## 4 EXPOSURE SCENARIO 4, Brazing-soldering flux for aluminium

This section displays a proposal for the exposure scenario 4, brazing-soldering flux for aluminium.

### EXPOSURE SCENARIO 4, BRAZING-SOLDERING FLUX FOR ALUMINIUM

ES4 Brazing-soldering flux for aluminium		
Systematic title based on use descriptor	Sector of use, SU	SU 14 Manufacture of basic metals, including alloys.
	Process Category, PROC	PROC 3 Use in closed batch process. PROC 6 Calendering operations. PROC 22 Potentially closed processing operations at elevated temperature. PROC 25 Other hot work operations.
	Environmental Release Category, ERC	ERC 4 ERC 8c
Processes, tasks, activities covered	Workers uses in Industrial setting. Professional workers uses.	
<b>Exposure Scenario</b>		
<b>Operational conditions and risk management measures</b>		
<p>Dipotassium hexafluorosilicate is generally used in an indoors closed system. The process runs continuously for long periods, up to 300. Workers are not exposed to the substances during any of the activities carried out for the correct use. Systems involved in these activities show a high level of containment, which minimises the potential exposure. Pipelines and vessels are sealed and insulated. Dipotassium hexafluorosilicate is transferred into small containers using appropriate and duly revised facilities.</p> <p>Workers involved in general activities, sampling steps and transfer of materials are adequately trained to carry out any specific task related to the production process. Furthermore, workers wear appropriate protection, such as gloves or respiratory masks, intending to minimise or eliminate the exposure and risk.</p>		
<b>Control of workers exposure</b>		
Product characteristic (including package design affecting exposure)	Physical state and colour	White solid
	Vapour pressure of substance	Negligible
	Solubility	1.18 g/L
	Substance in preparations	No
	Dustiness	High
Frequency and duration of use/exposure	Duration of activity	>4 hours
Other given operational conditions affecting workers exposure	Process temperature	< Melting point
	Setting (indoor/outdoor)	Indoor
Technical conditions and measures at process level (source) to prevent release	Level of containment	Used in closed batch process (synthesis or formulation).

<b>PRAYON S.A.</b>	<b>Dipotassium hexafluorosilicate</b> (PSF) EC number : 240-896-2 CAS number : 16871-90-2	<b>Exposure scenarios</b>
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<b>Technical conditions and measures to control dispersion from source towards the worker</b>	Local Exhaust Ventilation	Yes
	Efficiency rate	Inhalation: 90%; Dermal: 95%
<b>Conditions and measures related to personal protection, hygiene and health evaluation</b>	Workers wear appropriate protection, such as gloves or respiratory masks	

<b>Control of environmental exposure</b>			
<b>Amounts used</b>	Daily at point source	<b>Industrial setting</b>	<b>Professional setting</b>
		≤0.85 tonnes/day	=4.95E-6 tonnes/day
	Annually at point source	≤17 tonnes/year	
	Percentage of tonnage used at regional scale	100%	
<b>Frequency and duration of use</b>	Pattern of release	The process runs continuously for long periods, up to 300	
<b>Environment factors not influenced by risk management</b>	Flow rate of receiving surface water	≥1.8E4 m <sup>3</sup> /day	
<b>Conditions and measures related to municipal sewage treatment plant</b>	Municipal STP	Yes [Water: 0.1%]	
	Discharge rate of STP	≥2E3 m <sup>3</sup> /day	
	Application of the STP sludge on agricultural soil	Yes	

**Exposure estimation**

Below given exposure estimates are based on the PROC with the highest exposure levels in this scenario.

<b>Workers exposure</b>	Exposure estimate Industrial setting	Exposure estimate Professional setting	DNEL	Comment
<b>Inhalation (mg/m<sup>3</sup>)</b>	2.5 mg/m <sup>3</sup>	2.5 mg/m <sup>3</sup>	2.5 mg/m <sup>3</sup>	Long term, Systemic. Method: TRA workers Name: TRA workers

**Environmental exposure estimation**

	Industrial setting	Professional setting		Industrial setting	Professional setting
<b>Release factor after on site risk management Air (%)</b>	0.041	15	<b>Local release to air (kg/day)</b>	0.35	0
<b>Release factor after on site risk management Water (%)</b>	0.041	1	<b>Local release to water (kg/day)</b>	0.35	9.35E-5
<b>Environmental exposure (industrial setting)</b>		<b>PEC</b>	<b>PNEC</b>	<b>RCR</b>	<b>Comment</b>
<b>In STP / untreated wastewater(mg/l)</b>		0.175	51	0.003	
<b>In local freshwater (mg/l)</b>		0.021	0.9	0.023	
<b>In local soil (mg/kg dw)</b>		0.001	11	1E-4	
<b>In local marine water (mg/l)</b>		0.002	0.9	0.002	
<b>In air (mg/m<sup>3</sup>)</b>		5.35E-6	Not available		
<b>Environmental exposure (professional setting)</b>		<b>PEC</b>	<b>PNEC</b>	<b>RCR</b>	<b>Comment</b>



<b>PRAYON S.A.</b>	<b>Dipotassium hexafluorosilicate (PSF) EC number : 240-896-2 CAS number : 16871-90-2</b>	<b>Exposure scenarios</b>
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<b>In STP / untreated wastewater(mg/l)</b>	4.67E-5	51	9.157E-7	
<b>In local freshwater (mg/l)</b>	0.003	0.9	0.004	
<b>In local soil (mg/kg dw)</b>	2.46E-5	11	2.236E-6	
<b>In local marine water (mg/l)</b>	3.28E-4	0.9	3.644E-4	
<b>In air (mg/m<sup>3</sup>)</b>	1.36E-8	Not available		
<b>Additional good practice advice beyond the REACH CSA</b>				

PRAYON S.A.	<b>Dipotassium hexafluorosilicate</b> (PSF) EC number : 240-896-2 CAS number : 16871-90-2	Exposure scenarios
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## 5 EXPOSURE SCENARIO 5, textiles industry

This section displays a proposal for the exposure scenario 5, textiles industry.

### EXPOSURE SCENARIO 5, TEXTILES INDUSTRY

ES1 Manufacture		
Systematic title based on use descriptor	Process Category, PROC	PROC 13 Treatment of articles by dipping and pouring.
	Environmental Release Category, ERC	ERC 5
Processes, tasks, activities covered	Workers uses in Industrial setting..	
Exposure Scenario		
Operational conditions and risk management measures		
<p>Dipotassium hexafluorosilicate is generally used in an indoors closed system. The process runs continuously for long periods, up to 300. Workers are not exposed to the substances during any of the activities carried out for the correct use. Systems involved in these activities show a high level of containment, which minimises the potential exposure. Pipelines and vessels are sealed and insulated. Dipotassium hexafluorosilicate is transferred into small containers using appropriate and duly revised facilities.</p> <p>Workers involved in general activities, sampling steps and transfer of materials are adequately trained to carry out any specific task related to the production process. Furthermore, workers wear appropriate protection, such as gloves or respiratory masks, intending to minimise or eliminate the exposure and risk.</p>		
Control of workers exposure		
Product characteristic (including package design affecting exposure)	Physical state and colour	White solid
	Vapour pressure of substance	Negligible
	Solubility	1.18 g/L
	Substance in preparations	Yes
	Dustiness	Low
Frequency and duration of use/exposure	Duration of activity	>4 hours
Other given operational conditions affecting workers exposure	Setting (indoor/outdoor)	Indoor
Technical conditions and measures at process level (source) to prevent release	Level of containment	Use in closed system, no likelihood of exposure
Technical conditions and measures to control dispersion from source towards the worker	Local Exhaust Ventilation	Yes
	Efficiency rate	Inhalation: 90%; Dermal: 95%
Conditions and measures related to personal protection, hygiene and health evaluation	Workers wear appropriate protection, such as gloves or respiratory masks	
Control of environmental exposure		
Amounts used	Daily at point source	≤1.75 tonnes/day
	Annually at point source	≤35 tonnes/year
	Percentage of tonnage used at regional scale	100%

<b>PRAYON S.A.</b>	<b>Dipotassium hexafluorosilicate (PSF) EC number : 240-896-2 CAS number : 16871-90-2</b>	<b>Exposure scenarios</b>
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<b>Frequency and duration of use</b>	Pattern of release	The process runs continuously for long periods, up to 300		
<b>Environment factors not influenced by risk management</b>	Flow rate of receiving surface water	≥1.8E4 m <sup>3</sup> /day		
<b>Conditions and measures related to municipal sewage treatment plant</b>	Municipal STP	Yes [Water: 0.1%]		
	Discharge rate of STP	≥2E3 m <sup>3</sup> /day		
	Application of the STP sludge on agricultural soil	Yes		
<b>Exposure estimation</b>				
Below given exposure estimates are based on the PROC with the highest exposure levels in this scenario.				
<b>Workers exposure</b>	Exposure estimate	DNEL	Comment	
<b>Inhalation (mg/m<sup>3</sup>)</b>	0.5 mg/m <sup>3</sup>	2.5 mg/m <sup>3</sup>	Long term, Systemic. Method: TRA workers Name: TRA workers	
<b>Environmental exposure estimation</b>				
<b>Release factor after on site risk management Air (%)</b>	0.02	<b>Local release to air (kg/day)</b>	0.35	
<b>Release factor after on site risk management Water (%)</b>	0.02	<b>Local release to water (kg/day)</b>	0.35	
<b>Environmental exposure</b>	<b>PEC</b>	<b>PNEC</b>	<b>RCR</b>	<b>Comment</b>
<b>In STP / untreated wastewater(mg/l)</b>	0.175	51	0.003	
<b>In local freshwater (mg/l)</b>	0.021	0.9	0.023	
<b>In local soil (mg/kg dw)</b>	0.001	11	1E-4	
<b>In local marine water (mg/l)</b>	0.002	0.9	0.002	
<b>In air (mg/m<sup>3</sup>)</b>	5.35E-6	Not available		
<b>Additional good practice advice beyond the REACH CSA</b>	Following the reduce-to-a-minimum principle, works participating in any stage of the manufacturing process, are adequately trained and provided appropriate protective equipment to be able to manage the worst case scenario. Thus, either exposure or risk are minimised.			

PRAYON S.A.	<b>Dipotassium hexafluorosilicate</b> (PSF) EC number : 240-896-2 CAS number : 16871-90-2	Exposure scenarios
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## 6 EXPOSURE SCENARIO 6, Ceramic tiles

This section displays a proposal for the exposure scenario 6, ceramic tiles.

### EXPOSURE SCENARIO 6, CERAMIC TILES

ES4 Brazing-soldering flux for aluminium		
Systematic title based on use descriptor	Process Category, PROC	PROC 3 Use in closed batch process. PROC 6 Calendering operations. PROC 9 Transfer into small containers.
	Environmental Release Category, ERC	ERC 5 ERC 8c
Processes, tasks, activities covered	Workers uses in Industrial setting. Professional workers uses.	
<b>Exposure Scenario</b>		
<b>Operational conditions and risk management measures</b>		
<p>Dipotassium hexafluorosilicate is generally used in an indoors closed system. The process runs continuously for long periods, up to 300. Workers are not exposed to the substances during any of the activities carried out for the correct use. Systems involved in these activities show a high level of containment, which minimises the potential exposure. Pipelines and vessels are sealed and insulated. Dipotassium hexafluorosilicate is transferred into small containers using appropriate and duly revised facilities.</p> <p>Workers involved in general activities, sampling steps and transfer of materials are adequately trained to carry out any specific task related to the production process. Furthermore, workers wear appropriate protection, such as gloves or respiratory masks, intending to minimise or eliminate the exposure and risk.</p>		
<b>Control of workers exposure</b>		
Product characteristic (including package design affecting exposure)	Physical state and colour	White solid
	Vapour pressure of substance	Negligible
	Solubility	1.18 g/L
	Substance in preparations	No
	Dustiness	High
Frequency and duration of use/exposure	Duration of activity	>4 hours
Other given operational conditions affecting workers exposure	Process temperature	< Melting point
	Setting (indoor/outdoor)	Indoor
Technical conditions and measures at process level (source) to prevent release	Level of containment	Used in closed batch process (synthesis or formulation).
Technical conditions and measures to control dispersion from source towards the worker	Local Exhaust Ventilation	Yes
	Efficiency rate	Inhalation: 90%; Dermal: 95%
Conditions and measures related to personal protection, hygiene and health evaluation	Workers in industrial settings wear appropriate protection, such as gloves or respiratory masks Professional workers wear respiratory protection capable offering a 90% reduction in inhaled concentrations of the substance is recommended	

<b>PRAYON S.A.</b>	<b>Dipotassium hexafluorosilicate (PSF)</b> <b>EC number : 240-896-2</b> <b>CAS number : 16871-90-2</b>	<b>Exposure scenarios</b>
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<b>Control of environmental exposure</b>					
<b>Amounts used</b>	Daily at point source	<b>Industrial setting</b>	<b>Professional setting</b>		
		≤17.86 tonnes/day	=9.823E-4 tonnes/day		
	Annually at point source	≤1.786E3 tonnes/year			
	Percentage of tonnage used at regional scale	100%			
<b>Frequency and duration of use</b>	Pattern of release	The process runs continuously for long periods, up to 300			
<b>Environment factors not influenced by risk management</b>	Flow rate of receiving surface water	≥1.8E4 m <sup>3</sup> /day			
<b>Conditions and measures related to municipal sewage treatment plant</b>	Municipal STP	Yes [Water: 0.1%]			
	Discharge rate of STP	≥2E3 m <sup>3</sup> /day			
	Application of the STP sludge on agricultural soil	Yes			
<b>Exposure estimation</b>					
Below given exposure estimates are based on the PROC with the highest exposure levels in this scenario.					
<b>Workers exposure</b>	Exposure estimate Industrial setting	Exposure estimate Professional setting	DNEL	Comment	
<b>Inhalation (mg/m<sup>3</sup>)</b>	2.5 mg/m <sup>3</sup>	10 mg/m <sup>3</sup>	2.5 mg/m <sup>3</sup>	Long term, Systemic. Method: TRA workers Name: TRA workers	
<b>Environmental exposure estimation</b>					
	Industrial setting	Professional setting		Industrial setting	Professional setting
<b>Release factor after on site risk management Air (%)</b>	1.96E-4	1.96E-4	<b>Local release to air (kg/day)</b>	0.035	0.035
<b>Release factor after on site risk management Water (%)</b>	0.002	0.002	<b>Local release to water (kg/day)</b>	0.35	0.35
<b>Environmental exposure (industrial setting)</b>		<b>PEC</b>	<b>PNEC</b>	<b>RCR</b>	<b>Comment</b>
<b>In STP / untreated wastewater(mg/l)</b>		0.175	51	0.003	
<b>In local freshwater (mg/l)</b>		0.021	0.9	0.023	
<b>In local soil (mg/kg dw)</b>		0.001	11	1E-4	
<b>In local marine water (mg/l)</b>		0.002	0.9	0.002	
<b>In air (mg/m<sup>3</sup>)</b>		2.68E-6	Not available		
<b>Environmental exposure (professional setting)</b>		<b>PEC</b>	<b>PNEC</b>	<b>RCR</b>	<b>Comment</b>
<b>In STP / untreated wastewater(mg/l)</b>		0.175	51	9.608E-5	
<b>In local freshwater (mg/l)</b>		0.021	0.9	0.017	
<b>In local soil (mg/kg dw)</b>		0.001	11	0.002	
<b>In local marine water (mg/l)</b>		0.002	0.9	0.002	
<b>In air (mg/m<sup>3</sup>)</b>		2.68E-6	Not available		

<b>PRAYON S.A.</b>	<b>Dipotassium hexafluorosilicate</b> <b>(PSF)</b> <b>EC number : 240-896-2</b> <b>CAS number : 16871-90-2</b>	<b>Exposure scenarios</b>
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<b>Additional good practice advice beyond the REACH CSA</b>	
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