

Chemical Name	* CAS No.
Potassium perfluorooctanesulfonate	2795-39-3

VI. ON-SITE WORKPLACE EXPOSURE

This information will assist EPA in characterizing the number of workers potentially exposed and the magnitude, frequency, and duration of potential exposure. When providing monitoring data, ensure that data is linked with worker activities described in question 2.

1. Estimate the number of workers potentially exposed routinely to the subject chemical for each of the exposure duration times. If a worker is involved in more than one activity, enter only his/her most typical activity in the table. Don't count a worker more than once. The total number in the table should equal the total number of workers potentially exposed.

Hours/Day	Days/Year			
	<10	10-100	100-250	>250
<.25				
.25-1	12	23		
1-8	6	23		
>8				

2. Describe the routine worker activities to which the workers in question 1 are exposed: sampling, removal of filter cake, and drumming of liquids, manufacture an article, etc. For these activities, describe the physical state of the subject chemical (liquid, gas, particulate, or aerosol, etc.) and, if in a mixture, the chemical's concentration:

The chemical (2795-39-3) is a light, free-flowing powder. Initially, the material is a wet slurry (within a reactor) and is then transferred to drying equipment for final processing and packaging. The above employees operate and maintain the drying equipment, collect quality samples, and also package (by gravity or by hand scooping) dry powder from the drying equipment into drums, pails, and cans.



(Part VI continued...)

3. Provide industrial hygiene monitoring data, if available, with a brief description of the sampling method and exposure scenario monitored, e.g., describe the specific worker activities performed by the individuals monitored. For privacy considerations, please do not include any personal identifiers such as a worker's name or social security number with any data submitted to EPA.

See the attached table for air monitoring data. These samples were collected during operation of drying equipment and packaging activities. Past sample collection and analysis has utilized 37-mm Nucleopore filter cassettes with either gravimetric, ICP (for K+), or LC analysis. The current method is an OSHA Versatile Sampler (OVS) tube analyzed by LC/MS. Wipe sample data for the chemical does exist and has indicated significant levels of this material on surfaces in the production area. The results were used for focusing decontamination and exposure control efforts.

There has been area/source air monitoring data and/or surface wipe sampling data collected for fluorochemicals at the plant. Area/source sample results and/or surface wipe sample results are not included with this submittal because they are not always representative of employee exposures. Prior to 1999, air and surface sampling methods were considered to be semi-validated. Only in the past 12 months have validated sampling and analytical methodologies been developed for this group of sulfonated FCs.

The sample results of any air monitoring are compared to 3M's voluntary exposure guideline (EG) of 0.1 mg/m³ (milligrams of fluorochemical compound per cubic meter of air) for PFOS homologues, such as FC-95. The EG is an 8-hour time-weighted average (TWA) personal breathing zone exposure chosen to minimize potential for uptake.

Each 3M plant that produces sulfonated fluorochemicals has an industrial hygienist on staff and is supported by a corporate industrial hygiene group. 3M's industrial hygiene program is based on the concept of task-based exposure assessment and control. Exposures are identified and assessed qualitatively and/or quantitatively. Qualitative assessments are performed by an industrial hygienist. Quantitative assessments include task-based personal sampling for certain, specific fluorochemicals and/or source or area sampling. The results of the assessments support decisions on exposure control. Engineering controls are preferred.

but personal protective equipment may be used on an interim basis or when effective engineering control is not feasible.

CAS# 2795-39-3 (potassium perfluorooctane sulfonate) Personal Air Monitoring Results

Area/Job Classification	Sample Type	# of Samples	Minium Concentration	Maximum Concentration	Geometric Mean	Geometric Standard Deviation
Production Unit:						
Chemical Process Operator	Partial Shift (Sample Time Range: 7-125 minutes)	10	0.00013 mg/m3	40 mg/m3	0.050 mg/m3	64.407
Pilot Plant:						
Technician	Partial Shift (Sample Time: 70 minutes)	1	0.45 mg/m3	0.45 mg/m3	NA	NA

4. Briefly describe the engineering controls used to minimize exposure to this chemical:

The drying and packaging activities are contained within small-room enclosures with negative pressure and filtered exhaust ventilation. Local exhaust may be present directly at the point of packaging.

5. Briefly list the personal protective equipment your workers regularly wear to prevent exposure of this chemical:

Employees working within the above small-room enclosures use airline respirators, chemical-protective coveralls (Tyvek), boot covers, and neoprene gloves.

Comments: (This section is available to clarify the responses given. Attach additional pages if desired.)