 SANITIZED

Form Approved. O.M.B. No. 2070-0012. Approval Expires 10-31-96.

U. S. ENVIRONMENTAL PROTECTION AGENCY

EPA

PREMANUFACTURE NOTICE

FOR NEW CHEMICAL SUBSTANCES

AGENCY USE ONLY

Date of receipt RECEIVED OPPT CBIC 1999 MAY 17 AM 11:02

Company Sanitized

MR 22511

When completed send this form to

DOCUMENT CONTROL OFFICER
OFFICE OF POLLUTION PREVENTION
AND TOXIC SUBSTANCES, 7407
U.S. E.P.A. 401 M STREET, SW
WASHINGTON, D.C. 20460

Enter the total number of pages in the Premanufacture Notice: 212

Document control number: 53990000284

EPA case number: L99-284

GENERAL INSTRUCTIONS

TS- 4 9 9 4 5 A

- You must provide all information requested in this form to the extent that it is known to or reasonably ascertainable by you. Make reasonable estimates if you do not have actual data.
- Before you complete this form, you should read the "Instructions Manual for Premanufacture Notification" (the Instructions Manual is available from the Toxic Substances Control Act (TSCA) Information Service by calling 202-554-1404, or faxing 202-554-5603).
- If a user fee has been remitted for this notice (40 CFR 700.45), indicate in the boxes above the TS-user fee identification number you have generated. Remember, your user fee ID number must also appear on your corresponding fee remittance, which is sent to: EPA, HQ Accounting Operations Branch (PM-266), P.O. 360399M, Pittsburgh, PA 15251-6399, Attn. TSCA User Fee.

Part I – GENERAL INFORMATION

You must provide the currently correct Chemical Abstracts (CA) Name of the new chemical substance, even if you claim the identity as confidential. You may authorize another person to submit chemical identity information for you, but your submission will not be complete and the review will not begin until EPA receives this information. A letter in support of your submission should reference your TS user fee identification number. You must submit an original and two copies of this notice including all test data. If you claimed any information as confidential, a single sanitized copy must also be submitted.

Part II – HUMAN EXPOSURE AND ENVIRONMENTAL RELEASE

If there are several manufacture, processing, or use operations to be described in Part II, sections A and B of this notice, reproduce the sections as needed.

Part III – LIST OF ATTACHMENTS

Attach additional sheets if there is not enough space to answer a question fully. Label each continuation sheet with the corresponding section heading. In Part III, list these attachments, any test data or other data and any optional information included in the notice.

OPTIONAL INFORMATION

You may include any information that you want EPA to consider in evaluating the new substance. On page 11 of this form, space has been provided for you to describe pollution prevention and recycling information you may have regarding the new substance.

So-called "binding" boxes are included throughout this form for you to indicate your willingness to be bound to certain statements you make in this notice, such as use, production volume, protective equipment . . . This option is intended to reduce delays that routinely accompany the development of consent orders or Significant New Use Rules. Except in the case of exemption applications (such as TMEA, LVE, LOREX) where certain information provided in such notification is binding on the submitter when the Agency approves the exemption application, checking a binding box in this notice does not by itself prohibit the submitter from later deviating from the information (except chemical identity) reported in the form.

CONFIDENTIALITY CLAIMS

You may claim any information in this notice as confidential. To assert a claim on the form, mark (X) the confidential box next to the information that you claim as confidential. To assert a claim in an attachment, circle or bracket the information you claim as confidential. If you claim information in the notice as confidential, you must also provide a sanitized version of the notice (including attachments). For additional instructions on claiming information as confidential, read the Instructions Manual.

☒ Mark (X) if any information in this notice is claimed as confidential.

TEST DATA AND OTHER DATA

You are required to submit all test data in your possession or control and to provide a description of all other data known to or reasonably ascertainable by you, if these data are related to the health and environmental effects of the manufacture, processing, distribution in commerce, use, or disposal of the new chemical substance. Standard literature citations may be submitted for data in the open scientific literature. Complete test data (written in English), not summaries of data, must be submitted if they do not appear in the open literature. You should clearly identify whether test data is on the substance or on an analog. Also, the chemical composition of the tested material should be characterized. Following are examples of test data and other data. Data should be submitted according to the requirements of §720.50 of the Premanufacture Notification Rule (40 CFR Part 720).

Test Data (Check Below any included in this notice)

- Environmental fate data ☐ Yes
- Health effects data ☒ Yes
- Environmental effects data ☐ Yes
- Physical/Chemical Properties * ☒ Yes
- Other data ☐ Yes
  - Risk assessments
  - Structure/activity relationships
  - Test data not in the possession or control of the submitter

*A physical and chemical properties worksheet is located on the last page of this form.

TYPE OF NOTICE (Check Only One)

- ☐ PMN (Premanufacture Notice)
- ☐ INTERMEDIATE PMN (submitted in sequence with final product PMN)
- ☐ SNUN (Significant New Use Notice)
- ☐ TMEA (Test Marketing Exemption Application)
- ☒ LVE (Low Volume Exemption) @ 40 CFR 723.50 (c)(1)
- ☐ LOREX (Low Release/Low Exposure Exemption) @ 723.50(c)(2)
- ☐ LVE Modification ☐ LOREX Modification

IS THIS A CONSOLIDATED PMN? ☐ Yes

# of chemicals _____
(Prenotice Communication # required, enter # on page 3)

RECEIVED OPPT NCIC 99 MAY 25 AM 8:43

Public reporting burden for this collection of information is estimated to average 110 hours per response, including time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding the burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Chief, Information Policy Branch, PM-223, U.S. Environmental Protection Agency, 401 M. St., S.W.,, Washington, D.C. 20460; and to the Office of Management and Budget, Paperwork Reduction Act (2070-0012), Washington, D.C. 20503.

CERTIFICATION

I certify that to the best of my knowledge and belief:

1. The company named in Part I, section A, subsection 1a of this notice form intends to manufacture or import for a commercial purpose, other than in small quantities solely for research and development, the substance identified in Part I, Section B.

2. All information provided in this notice is complete and truthful as of the date of submission.

3. I am submitting with this notice all test data in my possession or control and a description of all other data known to or reasonably ascertainable by me as required by §720.50 of the Premanufacture Notification Rule.

Additional Certification Statements:

If you are submitting a PMN, Intermediate PMN, Consolidated PMN, or SNUN, check the following **user fee** certification statement that applies:

☐ The Company named in Part I, Section A has remitted the fee of $2500 specified in 40 CFR 700.45 (b), or

☐ The Company named in Part I, Section A has remitted the fee of $1000 for an Intermediate PMN (defined @ 40 CFR 700.43) in accordance with 40 CFR 700.45(b), or

☐ The Company named in Part I, Section A is a small business concern under 40 CFR 700.43 and has remitted a fee of $100 in accordance with 40 CFR 700.45 (b).

If you are submitting a **low volume exemption (LVE)** application in accordance with 40 CFR 723.50 (c) (1) or a **Low release and low exposure exemption (LoREX)** application in accordance with 40 CFR 723.50 (c) (2), check the following certification statements:

☒ The manufacturer submitting this notice intends to manufacture or import the new chemical substance for commercial purposes, other than in small quantities solely for research and development, under the terms of 40 CFR 723.50.

☒ The manufacturer is familiar with the terms of this section and will comply with those terms; and

☒ The new chemical substance for which the notice is submitted meets all applicable exemption conditions.

☒ If this application is for an LVE in accordance with 40 CFR 723.50 (c)(1), the manufacturer intends to commence manufacture of the exempted substance for commercial purposes within 1 year of the date of the expiration of the 30 day review period.

The accuracy of the statements you make in this notice should reflect your best prediction of the anticipated facts regarding the chemical substance described herein. Any knowing and willful misinterpretation is subject to criminal penalty pursuant to 18 USC 1001.

		Confidential
Signature and title of Authorized Official (Original Signature Required)	**Date**	X
Signature of agent - (if applicable)	**Date**	

Part I -- GENERAL INFORMATION

Section A -- SUBMITTER IDENTIFICATION

Mark (X) the "Confidential" box next to any subsection you claim as confidential.

			Confidential
1a. Person Submitting Notice (in U.S.)	Name of authorized official	Position	X
	Company		
	Mailing address (number and street)		
	City, State, ZIP Code		
b. Agent (if applicable)	Name of authorized official	Position	
	Company		
	Mailing address (number and street)		
	City, State, ZIP Code	Telephone: Area Code / Number	

c. If you are submitting this notice as part of a joint submission, mark (X) this box. → ☐

Joint Submitter (if applicable)	Name of authorized official	Position	
	Company		
	Mailing address (number and street)		
	City, State, ZIP Code	Telephone: Area Code / Number	
2. Technical Contact (in U.S.)	Name	Position	X
	Company		
	Mailing address (number and street)		
	City, State, ZIP Code	Telephone: Area Code / Number	

3. If you have had a prenotice communication (PC) concerning this notice and EPA assigned a PC Number to the notice, enter the number. →		Mark (X) if none → ☐	X
4. If you previously submitted an exemption application for the chemical substance covered by this notice, enter the exemption number assigned by EPA. If you previously submitted a PMN for this substance enter the PMN number assigned by EPA (i.e. withdrawn or incomplete). →		Mark (X) if none → ☐	X
5. If you have submitted a notice of Bona fide intent to manufacture or import for the chemical substance covered by this notice, enter the notice number assigned by EPA. →		Mark (X) if none → ☐	X

6. Type of Notice – Mark (X)	1. ☐ Manufacture Only ☐ Binding Option Mark (x)	2. ☒ Import Only ☐ BindingOption Mark (x)	3. ☐ Both

Part I – GENERAL INFORMATION – Continued

Section B – CHEMICAL IDENTITY INFORMATION:

You must provide a currently correct Chemical Abstracts (CA) name of the substance based on the ninth Collective Index (9CI) of CA nomenclature rules and conventions.

Mark (X) the "Confidential" box next to any item you claim as confidential.

Complete either Item 1 (Class 1 or 2 substances) or 2 (Polymers) as appropriate. Complete all other items.

If another person will submit chemical identity information for you (for either Item 1 or 2), mark (X) the box at the right. Identify the name, company, and address of that person in a continuation sheet. → ☐

Confidential

1. Class 1 or 2 chemical substances (for definitions of class 1 and class 2 substances, see the Instructions Manual)

   a. Class of substance – Mark (X) 1 ☐ Class 1 or 2 ☐ Class 2 — X

   b. Chemical name (Currently correct Chemical Abstracts (CA) Name that is consistent with TSCA Inventory listings for similar substances. For Class 1 substances a CA Index Name must be provided. For Class 2 substances either a CA Index Name or CA Preferred Name must be provided, whichever is appropriate based on CA 9CI nomenclature rules and conventions.). — X

   c. Please identify which method you used to develop or obtain the specified chemical indentity information reported in this notice: (check one).

   [X] Method 1 (CAS Inventory Expert Service - a copy of the Identification report obtained from the CAS Inventory Expert Service must be submitted as an attachment to this notice)

   ☐ Method 2 (Other Source)

   d. Molecular formula and CAS Registry Number (if a number already exists for the substance) — X

   CAS # — X

   e. For a class 1 substance, provide a complete and correct chemical structure diagram. For a class 2 substance – (1) List the immediate precursor substances with their respective CAS Registry Numbers. (2) Describe the nature of the reaction or process. (3) Indicate the range of composition and the typical composition (where appropriate). (4) Provide a correct representative or partial chemical structure diagram, as complete as can be known, if one can be reasonably ascertained. — X

☐ Mark (X) this box if you attach a continuation sheet.

Part I -- GENERAL INFORMATION -- Continued

Section B -- CHEMICAL IDENTITY INFORMATION -- Continued

2. Polymers (For a definition of polymer, see the Instructions Manual.)

Confidential: X

a. Indicate the number-average weight of the lowest molecular weight composition of the polymer you intend to manufacture. Indicate maximum weight percent of low molecular weight species (not including residual monomers, reactants, or solvents) below 500 and below 1,000 absolute molecular weight of that composition.

Describe the methods of measurement or the basis for your estimates: GPC ☐ Other ☐ : (Specify) _____

i) lowest number average molecular weight: _____

ii) maximum weight % below 500 molecular weight: _____

iii) maximum weight % below 1000 molecular weight: _____

☐ Mark (X) this box if you attach a continuation sheet.

b. You must make separate confidentiality claims for monomer or other reactant identity, composition information, and residual information. Mark (X) the "Confidential" box next to any item you claim as confidential.

(1) -- Provide the specific chemical name and CAS Registry Number (if a number exists) of each monomer or other reactant used in the manufacture of the polymer.
(2) -- Mark (X) this column if entry in column (1) is confidential.
(3) -- Indicate the typical weight percent of each monomer or other reactant in the polymer.
(4) -- Mark (X) the identity column if you want a monomer or other reactant used at two weight percent or less to be listed as part of the polymer description on the TSCA Chemical Substance Inventory.
(5) -- Mark (X) this column if entries in columns (3) and (4) are confidential.
(6) -- Indicate the maximum weight percent of each monomer or other reactant that may be present as a residual in the polymer as manufactured for commercial purposes.
(7) -- Mark (X) this column if entry in column (6) is confidential.

Monomer or other reactant and CAS Registry Number (1)	Confidential (2)	Typical composition (3)	Identity Mark (X) (4)	Confidential (5)	Maximum residual (6)	Confidential (7)
	X	%		X	%	X
	X	%		X	%	X
	X	%		X	%	X
	X	%		X	%	X
		%			%	
		%			%	
		%			%	

☐ Mark (X) this box if you attach a continuation sheet.

c. Please identify which method you used to develop or obtain the specified chemical identity information reported in this notice. (check one). X

☐ Method 1 (CAS Inventory Expert Service - a copy of the identification report obtained from CAS Inventory Expert Service must be submitted as an attachment to this notice)

☐ Method 2 (other source)

d. The currently correct Chemical Abstracts (CA) name for the polymer that is consistent with TSCA Inventory listings for similar polymers. X

e. Provide a correct representative or partial chemical structure diagram, as complete as can be known, if one can be reasonably ascertained. X

☐ Mark (X) this box if you attach a continuation sheet.

Part I – GENERAL INFORMATION – Continued

Section B – CHEMICAL IDENTITY INFORMATION – Continued

3. Impurities
(a) – Identify each impurity that may be reasonably anticipated to be present in the chemical substance as manufactured for commercial purposes. Provide the CAS Registry Number if available. If there are unidentified impurities, enter "unidentified."
(b) – Estimate the maximum weight % of each impurity. If there are unidentified impurities, estimate their total weight %.

Impurity and CAS Registry Number (a)	Maximum percent (b)	Confidential
	%	X
	%	
	%	
	%	
	%	
	%	
	%	

☐ Mark (X) this box if you attach a continuation sheet.

4. Synonyms – Enter any chemical synonyms for the new chemical substance identified in subsection 1 or 2.

Confidential: X

☐ Mark (X) this box if you attach a continuation sheet.

5. Trade identification – List trade names for the new chemical substance identified in subsection 1 or 2.

Confidential: X

☐ Mark (X) this box if you attach a continuation sheet.

6. Generic chemical name – If you claim chemical identity as confidential, you must provide a generic chemical name for your substance that reveals the specific chemical identity of the new chemical substance to the maximum extent possible. Refer to the TSCA Chemical Substance Inventory, 1985 Edition, Appendix B for guidance on developing generic names.

PERFLUOROPOLYETHER DERIVATIVE

☐ Mark (X) this box if you attach a continuation sheet.

7. Byproducts – Describe any byproducts resulting from the manufacture, processing, use, or disposal of the new chemical substance. Provide the CAS Registry Number if available.

Byproduct (1)	CAS Registry Number (2)	Confidential
		X

☐ Mark (X) this box if you attach a continuation sheet.

Part I -- GENERAL INFORMATION -- Continued

Section C -- PRODUCTION, IMPORT, AND USE INFORMATION:

Mark (X) the "Confidential" box next to any item you claim as confidential.

1. **Production volume** -- Estimate the maximum production volume during the first 12 months of production. Also estimate the maximum production volume for any consecutive 12-month period during the first three years of production. Estimates should be on 100% new chemical substance basis. *For a Low Volume Exemption application, if you choose to have your notice reviewed at a lower production volume than 10,000 kg/yr, specify the volume and mark (x) in the binding box. If granted, you are bound to this volume..*

Maximum first 12-month production (kg/yr) (100% new chemical substance basis)	Maximum 12-month production (kg/yr) (100% new chemical substance basis)	Confi-dential	Binding Option Mark (x)
		X	

2. **Use Information** -- You must make separate confidentiality claims for the description of the category of use, the percent of production volume devoted to each category, the formulation of the new substance, and other use information. Mark (X) the "Confidential" Box next to any item you claim as confidential.

a. (1) -- Describe each intended category of use of the new chemical substance by function and application.
(2) -- Mark (X) this column if entry in column (1) is confidential business information (CBI).
(3) -- Indicate your willingness to have the information provided in column (1) binding.
(4) -- Estimate the percent of total production for the first three years devoted to each category of use.
(5) -- Mark (X) this column if entry in column (4) is confidential business information (CBI).
(6) -- Estimate the percent of the new substance as formulated in mixtures, suspensions, emulsions, solutions, or gels as manufactured for commercial purposes at sites under your control associated with each category of use.
(7) -- Mark (X) this column if entry in column (6) is confidential business information (CBI).
(8) -- Indicate % of product volume expected for the listed "use" sectors. Mark more than one box if appropriate. Mark (X) to indicate your willingness to have the use type provided in (8) binding.
(9) -- Mark (X) this column if entry(ies) in column (8) is (are) confidential business information (CBI).

Category of use (1) (by function and application i.e. a dispersive dye for finishing polyester fibers)	CBI (2)	Binding Option Mark (x) (3)	Production % (4)	CBI (5)	% in Formulation (6)	CBI (7)	% of substance expected per use (8)					CBI (9)
							Site-limited	Con-* sumer	Indus-trial	Com-mercial	Binding Option	
	X		%	X	%	X						X
			%		%							
			%		%							
			%		%							
			%		%							
			%		%							
			%		%							

*If you have identified a "consumer" use, please provide on a continuation sheet a detailed description of the use(s) of this chemical substance in consumer products. In addition include estimates of the concentration of the new chemical substance as expected in consumer products and describe the chemical reactions by which this substance loses its identity in the consumer product.

☐ Mark (X) this box if you attach a continuation sheet.

b. Generic use description — If you claim any category of use description in subsection 2a as confidential, enter a generic description of that category. Read the Instructions Manual for examples of generic use descriptions.

EMULSION ACTIVE INGREDIENT

☐ Mark (X) this box if you attach a continuation sheet.

3. **Hazard Information** -- Include in the notice a copy of reasonable facsimile of any hazard warning statement, label, material safety data sheet, or other information which will be provided to any person who is reasonably likely to be exposed to this substance regarding protective equipment or practices for the safe handling, transport, use, or disposal of the new substance. List in part III hazard information you include. — Binding Option Mark (x)

☒ Mark (X) this box if you attach hazard information. MSDS

Part II -- HUMAN EXPOSURE AND ENVIRONMENTAL RELEASE

Section A -- INDUSTRIAL SITES CONTROLLED BY THE SUBMITTER

Mark (X) the "Confidential" box next to any item you claim as confidential.

Complete section A for each type of manufacture, processing, or use operation involving the new chemical substance at industrial sites you control. Importers do not have to complete this section for operations outside the U.S.; however, you may still have reporting requirements if there are further industrial processing or use operations after import. You must describe these operations. See instructions manual.

1. Operation description a. Identity – Enter the identity of the site at which the operation will occur.	Confidential
Name	X
Site address (number and street)	
City, County, State, ZIP Code	
If the same operation will occur at more than one site, enter the number of sites. Identify the additional sites on a continuation sheet, and if any of the sites have significantly different production rates or operations, include all the information requested in this section for those sites as attachments. → # of sites	X
[X] Mark (X) this box if you attach a continuation sheet.	
b. Type – Mark (X) ☐ Manufacturing ☐ Processing ☐ Use	X
c. Amount and Duration – Complete 1 or 2 as appropriate	
1. Batch: Maximum kg/batch (100 % new chemical substance) / Hours/batch / Batches/year	X
2. Continuous: Maximum kg/day (100 % new chemical substance) / Hours/day / Days/year	X
d. Process description ☐ Mark (X) to indicate your willingness to have your process description binding.	X

(1) Diagram the major unit operation steps and chemical conversions. Include interim storage and transport containers (specify-e.g. 5 gallon pails, 55 gallon drum, rail car, tank truck, etc.).
(2) Provide the identity, the approximate weight (by kg/day or kg/batch on an 100% new chemical substance basis), and entry point of all starting materials and feedstocks (including reactants, solvents, and catalysts, etc.), and of all products, recycle streams, and wastes. Include cleaning chemicals (note frequency if not used daily or per batch.).
(3) Identify by number the points of release, including small or intermittant releases, to the environment of the new chemical substance.

☐ Mark (X) this box if you attach a continuation sheet.

Part II -- HUMAN EXPOSURE AND ENVIRONMENTAL RELEASE -- Continued

Section A -- INDUSTRIAL SITES CONTROLLED BY THE SUBMITTER -- Continued

2. **Occupational Exposure** -- You must make separate confidentiality claims for the description of worker activity, physical form of the new chemical substance, number of workers exposed, and duration of activity. Mark (X) the "Confidential" box next to any item you claim as confidential.
   (1) -- Describe the activities (e.g. bag dumping, tote filling, unloading drums, sampling, cleaning, etc.) in which workers may be exposed to the substance.
   (2) -- Mark (X) this column if entry in column (1) is confidential business information (CBI).
   (3) -- Describe any protective equipment and engineering controls used to protect workers.
   (4) and (6) -- Indicate you willingness to have the information provided in column (3) or (5) binding.
   (5) -- Indicate the physical form(s) of the new chemical substance (e.g. solid: crystal, granule, powder, or dust) and % new chemical substance (if part of a mixture) at the time of exposure.
   (7) -- Mark (X) this column if entry in column (5) is confidential business information (CBI).
   (8) -- Estimate the maximum number of workers involved in each activity for all sites combined.
   (9) -- Mark (X) this column if entry in column (8) is confidential business information (CBI).
   (10) and (11) -- Estimate the maximum duration of the activity for any worker in hours per day and days per year.
   (12) -- Mark (X) this column if entries in columns (10) and (11) are confidential business information (CBI).

Worker activity (e.g. bag dumping, filling drums) (1)	CBI (2)	Protective Equipment/ Engineering Controls (3)	Binding Option Mark (x) (4)	Physical form(s) (e.g.solid:powder) and % new substance (5)	Binding Option Mark (x) (6)	CBI (7)	# of Workers Exposed (8)	CBI (9)	Maximum duration Hrs/day (10)	Days/yr (11)	CBI (12)
	X					X		X			X
	X					X		X			X
	X					X		X			X
	X					X		X			X
	X					X		X			X

☒ Mark (X) this box if you attach a continuation sheet.

3. **Environmental Release and Disposal** -- You must make separate confidentiality claims for the release number and the amount of the new chemical substance released and other release and disposal information. Mark (X) the "Confidential" box next to each item you claim as confidential.
   (1) -- Enter the number of each release point identified in the process description, part II, section A, subsection 1d(3).
   (2) -- Estimate the amount of the new substance released (a) directly to the environment or (b) into control technology (in kg/day or kg/batch).
   (3) -- Mark (X) this column if entries in columns (1) and (2) are confidential business information (CBI).
   (4) -- Identify the media of release i.e. stack air, fugitive air (optional-see Instruction Manual), surface water, on-site or off-site land or incineration, POTW, or other (please specify) to which the new substance will be released from that release point.
   (5) -- a. Describe control technology, if any, ,and control efficiency that will be used to limit the release of the new substance to the environment. For releases disposed of on land, characterize the disposal method and state whether it is approved for disposal of RCRA hazardous waste. On a continuation sheet , for each site describe any additional disposal methods that will be used and whether the waste is subject to secondary or tertiary on-site treatment. b. Estimate the amount released to the environment after control technology (in kg/day).
   (6) -- Mark (X) this column if entries in columns (4) and (5) are confidential business information (CBI).
   (7) -- Identify the destination(s) of releases to water. Please supply NPDES (National Pollutant Discharge Elimination System) numbers for direct dischargers or NPDES numbers of the POTW (Publicly Owned Treatment Works). Mark (X) if the POTW name or NPDES # is confidential business information (CBI).

Release Number (1)	Amount of new substance released (2a)	(2b)	CBI (3)	Media of release e.g. stack air (4)	Control technology and efficiency (you may wish to optionally attach efficiency data) (5a)	Binding Mark (x)	(5b)	CBI (6)
			X					X
			X					X
			X					X
			X					X
			X					X

(7) Mark (X) the destination(s) of releases to water.	☐ POTW provide name(s) below:	CBI	☐ Navigable waterway	☐ Other - Specify	provide NPDES #	CBI
		X				

☐ Mark (X) this box if you attach a continuation sheet.

Part II – HUMAN EXPOSURE AND ENVIRONMENTAL RELEASE – Continued

Section B – INDUSTRIAL SITES CONTROLLED BY OTHERS

Complete section B for typical processing or use operations involving the new chemical substance at sites you do not control. Importers do not have to complete this section for operations outside the U.S.; however, you must report any processing or use activities after import. See the Instructions Manual. *Complete a separate section B for each type of processing, or use operation involving the new chemical substance.* If the same operation is performed at more than one site describe the typical operation common to these sites. Identify additional sites on a continuation sheet.

1. **Operation Description** - To claim information in this section as confidential, circle or bracket the specific information that you claim as confidential.
(1) – Diagram the major unit operation steps and chemical conversions, including interim storage and transport containers (specify- e.g. 5 gallon pails, 55gallon drums, rail cars, tank trucks, etc). On the diagram, identify by letter and briefly describe each worker activity. (2) – Provide the identity, the approximate weight (by kg/day or kg/batch, on an 100% new chemical substance basis), and entry point of all feedstocks (including reactants, solvents and catalysts, etc) and of all products, recycle streams, and wastes. Include cleaning chemicals (note frequency if not used daily or per batch). (3) – Identify by number the points of release, including small or intermittent releases, to the environment of the new chemical substance.
(4) Please enter the # of sites (remember to identify the locations of these sites on a continuation sheet) :

_____ # of sites

NA

☐ Mark (X) this box if you attach a continuation sheet.

2. **Worker Exposure/Environmental Release**
(1) – From the diagram above, provide the letter for each worker activity. Complete 2-8 for each worker activity described.
(2) – Estimate the number of workers exposed for all sites combined.
(4) – Estimate the typical duration of exposure per worker in (a) hours per day and (b) days per year.
(6) – Describe physical form of exposure and % new chemical substance (if in mixture), and any protective equipment and engineering controls used to protect workers.
(7) – Estimate the percent of the new substance as formulated when packaged or used as a final product.
(9) – From the process diagram above, enter the number of each release point. Complete 9-13 for each release point identified.
(10) – Estimate the amount of the new substance released (a) directly to the environment or (b) into control technology to the environment (in kg/day or kg/batch).
(12) – Describe media of release i.e. stack air, fugitive air (optional-see Instructions Manual), surface water, on-site or off-site land or incineration, POTW, or other (specify) and control technology, if any, that will be used to limit the release of the new substance to the environment.
(14) – Identify byproducts which may result from the operation.
(3), (5), (8), (11), (13) and (15) - Mark (X) this column if any of the proceeding entries are confidential business information (CBI).

Letter of Activity (1)	# of Workers Exposed (2)	CBI (3)	Duration of Exposure (4a)	(4b)	CBI (5)	Protective Equip. / Engineering Controls/ Physical Form and % new substance (6)	% in Formulation (7)	CBI (8)	Release Number (9)	Amount of New Substance Released (10a)	(10b)	CBI (11)	Media of Release & Control Technology (12)	CBI (13)

(14) – Byproducts: (15)

☐ Mark (X) this box if you attach a continuation sheet.

OPTIONAL POLLUTION PREVENTION INFORMATION

To claim information in this section as confidential circle or bracket the specific information that you claim as confidential.

In this section you may provide information not reported elsewhere in this form regarding your efforts to reduce or minimize potential risks associated with activities surrounding manufacturing, processing, use and disposal of the PMN substance. Please include new information pertinent to pollution prevention, including source reduction, recycling activities and safer processes or products available due to the new chemical substance. Source reduction includes the reduction in the amount or toxicity of chemical wastes by technological modification, process and procedure modification, product reformulation, raw materials substitution, and/or inventory control. Recycling refers to the reclamation of useful chemical components from wastes that would otherwise be treated or released as air emissions or water discharges, or land disposal. Descriptions of pollution prevention, source reduction and recycling should emphasize potential risk reduction subsequent to compliance with existing regulatory requirements and can be either quantitative or qualitative. The EPA is interested in this information to assess overall net reductions in toxicity or environmental releases and exposures, not the shifting of risks to other environmental media or non-environmental areas (e.g., occupational or consumer exposure). In addition, information on the relative cost or performance characteristics of the PMN substance to potential alternatives may be provided. **All information provided in this section will be taken into consideration during the review of this substance. See the revised Instructions Manual that includes a Pollution Prevention manual for guidance and examples.**

Describe the expected net benefits, such as (1) an overall reduction in risk to human health or the environment; (2) a reduction in the volume manufactured; (3) a reduction in the generation of waste materials through recycling, source reduction or other means; (4) a reduction in potential toxicity or human exposure and/or environmental release; (5) an increase in product performance, a decrease in the cost of production and/or improved operation efficiency of the new chemical substance in comparison to existing chemical substances used in similar applications; or (6) the extent to which the new chemical substance may be a substitute for an existing substance that poses a greater overall risk to human health or the environment.

☐ Mark (X) this box if you attach a continuation sheet.

Part III -- LIST OF ATTACHMENTS

Attach continuation sheets for sections of the form and test data and other data (including physical/chemical properties and structure/activity information), and optional information after this page. Clearly identify the attachment and the section of the form to which it relates, if appropriate. Number consecutively the pages of the attachments. In the column below, enter the inclusive page numbers of each attachment.
Mark (X) the "Confidential" box next to any attachment name you claim as confidential. Read the **Instructions Manual** for guidance on how to claim any information in an attachment as confidential. You must include with the sanitized copy of the notice form a sanitized version of any attachment in which you claim information as confidential.

Attachment name	Attachment page number(s)	Confi-dential
Material Safety Data Sheet (MSDS)		X
		X
		X
		X
		X
		X
		X
		X
		X
		X

☐ Mark (X) this box if you attach a continuation sheet. Enter the attachment name and number.

AUSIMONT S.p.A.

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SAFETY DATA SHEET

[redacted]

Updating: 31/3/1999

Ref: gal0151e

COMPANY IDENTIFICATION

Company: AUSIMONT S.p.A.
Address: Viale Lombardia, 20
20021 - Bollate (MI)
Telephone Number: 02-3835-1
Fax Number: 02-3835- 6302

Emergency Calls
Telephone Number: 02-3835- 1

1) COMPOUND IDENTIFICATION

Trade Name: [redacted]
Chemical Description: Perfluoropolyether derivative
Molecular Weight: [redacted] Empirical Formula: ----

Structural Formula: [redacted]

CAS Name: [redacted]

CAS Number : [redacted] CEE Number: not assigned
EINECS Number: not assigned ELINCS Number: not assigned

2) COMPOSITION/INFORMATION ON INGREDIENTS

Substances with established exposure limits or classifiable as dangerous according to EC Directive 67/548 and following amendments, in concentration equal or higher than that reported in EC Directive 88/379 (item 3, sect. 6):

Name	Conc.	CAS N°	Symbol	Risk Phrases
Perfluoropolyether derivative	100 %	[redacted]	T	R 25

3) HAZARDS IDENTIFICATION

Adverse human health effects The product is toxic if swallowed.
Environmental effects The product, when properly used and disposed of, is not dangerous for the environment
Physical and chemical hazards Harmful effects in case of thermal decomposition for the emission of toxic and corrosive vapours

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SAFETY DATA SHEET

[redacted]

Updating: 31/3/1999

Ref: gal0151e

4) FIRST-AID MEASURES

Symptomatology following exposure

Eye contact	Redness, irritation, eschar, necrosis.
Skin contact	Redness, pain, irritation.
Ingestion	Abdominal pain, nausea, vomit.

First Aid Measures

Eye contact	Wash with plenty of water for at least 15 minutes. Seek medical advice in case of persistent pain.
Skin contact	Take off immediately all contaminated clothing. Wash with aqueous solution of Sodium Carbonate. Seek medical advice in case of persistent pain
Ingestion	Give some glasses of water to drink if the patient is conscious. Do not induce vomiting. Seek immediately medical advice.

5) FIRE FIGHTING MEASURES

Specific hazards	The product is not flammable and not explosive The heating of the product (T>200°C) may cause decomposition with emission of toxic and corrosive vapours.
Specific methods	Wear specific protective equipment (see below). Stay opposite the wind and at safety distance from the flames. Remove the containers, when possible to do so in safe conditions. Keep containers cool by spraying with water when exposed to fire.
Extinguishing media	Water, powers, foams, chemicals, CO_2.
Protection of fire-fighters	Self-contained breathing apparatus. Protective antiacid overall clothing.

6) ACCIDENTAL RELEASE MEASURES

Personal precautions	Wear suitable protective clothing. Stop the release in safe conditions as soon as possible. Avoid the contact of the released product with ignition sources or hot surfaces.
Environmental precautions	Avoid the uncontrolled release of the product in sewage system, in surface and underground waters, in the soil.
Methods for cleaning up	Absorb the released liquid with earth, sand or sawdust. Collect it in suitable containers for disposal.

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SAFETY DATA SHEET

[redacted]

Updating: 31/3/1999

Ref: gal0151e

7) HANDLING AND STORAGE

HANDLING

Precautions Avoid heating above the decomposition temperature (200°C).

Technical measures Provide working areas with adequate ventilation systems and with water-wash facilities (eye-bath and emergency showers).

STORAGE

Storage conditions Keep containers closed.
Keep away from heat sources.
Keep away from combustible, explosive and incompatible materials(sect.10)

Packaging Polyethylene containers.

Recommended materials Glass, plastics (polyethylene) and metals lined with plastic.

Non suitable materials Not lined metals.

8) EXPOSURE CONTROLS/PERSONAL PROTECTION

Exposure limits Only threshold limits of by-products from thermal decomposition are available (ACGIH 1998):

HF	TLV/CEILING	2.6	mg/mc	3	ppm
HCl	TLV/CEILING	7.5	mg/mc	5	ppm
COF2	TLV/STEL	13.5	mg/mc	5	ppm

Engineering Measures Provide working areas with adequate ventilation/aspiration systems.

PERSONAL PROTECTIVE EQUIPMENT

Respiratory protection Not necessary in normal use; mask with anti-acid filter in case of exposure to vapours; self-contained breathing apparatus in case of fire.

Eye protection Safety goggles

Hand protection Rubber gloves

Skin and body protection Worksuit or rubber apron

Hygiene measures Do not drink, eat and smoke during handling.

9) PHYSICAL AND CHEMICAL PROPERTIES

Physical state	wax
Colour:	whitish
Odour:	odourless
Melting point:	not available
Boiling point:	not available
Flashpoint:	not flammable
Explosion properties:	not explosive
Oxidising properties:	not oxidiser
Vapour pressure:	not available
Vapour density:	not available
Density:	1.81 g/ml

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SAFETY DATA SHEET

[redacted]

Updating: 31/3/1999

Ref: gal0151e

Solubility in water:	0.1 ÷ 20 % (w/w)
Solubility in organic solvents:	not available

10) STABILITY AND REACTIVITY

Stability:	The product is stable in normal conditions of use and storage.
Conditions to avoid:	Avoid heating the product above 200°C. Avoid contact with flames.
Materials to avoid:	Strong alkaline compounds (alkaline hydroxides, ammonia, and non-aqueous alkalis). Lewis acids ($AlCl_3$, SbF_5, CoF_3) above 100°C. Powdered magnesium, aluminium and their alloys above 100°C.
Hazardous decomposition products:	The product may decompose at temperature above 200 °C with emission of toxic and corrosive gases (HF; HCl, COF_2)

11) TOXICOLOGICAL INFORMATION

Penetration routes Contact and ingestion.

Adverse effects for the Human Health

Delayed and/or immediate effects after short and/or prolonged exposure:

Acute toxicity:	no known effect
Local effects / irritating power:	irritant to eyes and skin.
Sensitisation:	no known effect
Chronic toxicity:	" " "
Carcinogenicity:	" " "
Mutagenicity:	" " "
Reproduction toxicity:	" " "

Experimental toxicological data

LD_{50} - oral	[redacted]	[redacted]
LD_{50} - skin	[redacted]	
Sensitisation - skin		

12) ECOLOGICAL INFORMATION

Environmental effects

– Mobility:	no available data
– Persistence/degradability:	no available data
– Bioaccumulation:	no available data
Ecostability data	no available data
Ecotoxicity data	no available data
EVALUATION	Use the product according to the good working practice, avoiding polluting the environment.

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SAFETY DATA SHEET

[redacted]

Updating: 31/3/1999 Ref: gal0151e

13) DISPOSAL CONSIDERATIONS

Waste treatment Send the waste product to thermal destruction, using high-temperature incinerators designed to burn fluorine compounds.

Packaging treatment Reuse, when possible, the containers, after through washing. Send to authorised landfills, according to local laws and regulations.

14) TRANSPORT INFORMATION

Specific hazards Product classified as toxic.

Packaging information's Product usually shipped in polyethylene containers of different capacities (drums, jerricans, tanks).

INTERNATIONAL TRANSPORT CLASSIFICATION

Shipping name: [redacted]
U.N. Number: 2811
Packaging group: III

ADR/RID

class	6.1	item	25°(c)	label	6.1		

IMDG/IMO

class	6.1	IMDG Code pag.	6270-6	EMS N.	6.1-04	MFAG Table N.	345
		label:	6.1	Subs. risk:	---	Marine pollutant	NO

DPR n°1008/68

class	6.1	Code:	Not clas.	Label	---	Marine pollutant	---

ICAO/IATA

class	6.1	code	2811	Label:	6.1	Subs. risk	----

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SAFETY DATA SHEET

[redacted]

Updating: 31/3/1999

Ref: gal0151e

15) REGULATORY INFORMATION

CEE Regulations (Directive 67/548 and following amendments)

Classification
Classification type: provisional
Hazard class: **Toxic**
Labelling
Trade Name: [redacted]

Hazard Symbol:

Risk phrases	(R)	25	Toxic if swallowed
Safety phrases	(S)	45	If swallowed, seek medical advice immediately and show this container or label.

16) OTHER INFORMATION

BIBLIOGRAPHY

- Ausimont internal data

Safety Data Sheet according to EC Directive 93/112

The information given in this safety data sheet is for safety purpose only. It is given in good faith and based on the best knowledge and experience of the company at the date of issuing.
The Company is not responsible for damages caused by the use of the product in applications for which it was not intended or for conditions of use outside its control.

PHYSICAL AND CHEMICAL PROPERTIES WORKSHEET

To assist EPA's review of physical and chemical properties data, please complete the following worksheet for data you provide and include it in the notice. Identify the property measured, the page of the notice on which the property appears, the value of the property, the units in which the property is measured (as necessary), and whether or not the property is claimed as confidential. The physical state of the neat substance should be provided. These measured properties should be for the neat (100% pure) chemical substance. Properties that are measured for mixtures or formulations should be so noted (% PMN substance in _).You are not required to submit this worksheet; however, EPA strongly recommends that you do so, as it will simplify review and ensure that confidential information is properly protected. You should submit this worksheet as a supplement to your submission of test data. This worksheet is not a substitute for submission of test data.

Property (a)	Mark (X) if provided	Page number (b)	Value (c)	Measured or Estimate (M or E)	Confidential Mark (X) (d)
Physical state of neat substance			____ (s) ____ (l) ____ (g)		X
Vapor pressure @ Temperature _____ °C			Torr		X
Density/relative density			g/cm3		X
Solubility @ Temperature _____ °C Solvent _____			g/L		X
Solubility in water @ Temperature _____ °C			°C		X
Melting temperature			°C		X
Boiling/sublimation temperature @ _____ torr pressure					X
Spectra					X
Dissociation constant					X
Particle size distribution					X
Octanol/water partition coefficient					X
Henry's Law constant					X
Volitalization from water					X
Volitalization from soil					X
pH @ concentration _____					X
Flammability					X
Explodability					X
Adsorption/coefficient					X
Other - Specify					X
					X
					X

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Inventory Expert Service

A division of the American Chemical Society

Phone: 800-631-1884, 614-447-3600 (ext. 2308)
Fax: 614-447-3747
E-mail: answers@cas.org

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INVENTORY EXPERT SERVICE REPORT

IES-ORDER NUMBER: 42914-3

REGISTRY NUMBER: [redacted]

CA INDEX NAME

[redacted]

Please print the above CA Index Name on the appropriate page of your PMN.

☐ If this box is checked, CAS has made correction(s) marked in red to your IES order. Please make the same correction(s) to your PMN before submitting it to the EPA.

2540 Olentangy River Road • P.O. Box 3343 • Columbus, Ohio 43210-0334

Part I -- GENERAL INFORMATION -- Continued

42914-3

Section B --CHEMICAL IDENTITY INFORMATION: You **must** provide a currently correct Chemical Abstracts (CA) name of the substance based on the ninth Collective Index (9CI) of CA nomenclature rules and conventions.

Mark (X) the "Confidential" box next to any item you claim as confidential.

Complete either item 1 (Class 1 or 2 substances) or 2 (Polymers) as appropriate. Complete all other items.

If another person will submit chemical identity information for you (for either item 1 or 2), mark (X) the box at the right Identify the name, company, and address of that person in a continuation sheet. → ☐ Confidential

1. **Class 1 or 2 chemical substances** (for definitions of class 1 and class 2 substances, see the Instructions Manual).
   a. Class of substance -- Mark (X) 1☐ Class 1 **or** 2☐ Class 2

   b. Chemical name (Currently correct Chemical Abstracts (CA) Name that is consistent with TSCA Inventory listings for similar substances. For Class 1 substances a CA Index Name must be provided. For Class 2 substances either a CA Index Name or CA Preferred Name must be provided, whichever is appropriate based on CA 9CI nomenclature rules and conventions).

   ☐

   ☐

   d. Molecular formula and CAS Registry Number (if a number already exists for the substance)

   [redacted]

   CAS #

   e. For a **class 1** substance, provide a complete and correct chemical structure diagram. For a **class 2** substance -- (1) List the immediate precursor substances with their respective CAS Registry Numbers. (2) Describe the nature of the reaction or process. (3) Indicate the range of composition and the typical composition (where appropriate). (4) Provide a correct representative or partial chemical structure diagram, as complete as can be known, if one can be reasonably ascertained.

[redacted]

☐ Mark (X) this box if you attach a continuation sheet 22

CONFIDENTIAL 4/29/14 -3

Part I -- GENERAL INFORMATION --Continued

Section B -- CHEMICAL IDENTITY INFORMATION -- Continued

2. **Polymers** (For a definition of polymer, see the **Instructions Manuals**.)

Confi-dential

a. Indicate the number-average weight of the lowest molecular weight composition of the polymer you intend to manufacture. Indicate **maximum** weight percent of low molecular weight species (not including residual monomers, reactants, or solvents) below 500 and below 1,000 absolute molecular weight of that composition.

Describe the methods of measurement or the bases for your estimates:

GPC ☐ Other ☐ :(Specify) [redacted]

i) **lowest** number average molecular weight: [redacted]
ii) maximum weight % below 500 molecular weight:
iii) maximum weight % below 1000 molecular weight:

☐ Mark (X) this box if you attach a continuation sheet.

b. You must make separate confidentiality claims for monomer or other reactant identity, composition information, and residual information. Mark (X) the "Confidential" box next to any item you claim as confidential.

(1) -- Provide the chemical name and CAS Registry Number (if a number exists) of each monomer or other reactant used in the manufacture of the polymer.
(2) -- Mark (X) this column if entry in column (1) is confidential.
(3) -- Indicate the **typical** weight percent of each monomer or other reactant in the polymer.
(4) -- **Mark (X) the identity column if you want a monomer or other reactant used at two weight percent or less to be listed as part of the polymer description on the TSCA Chemical Substance Inventory.**
(5) -- Mark (X) this column if entries in columns (3) and (4) are confidential.
(6) -- **Indicate the maximum** weight percent of each monomer or other reactant that may be present as a residual in the polymer as manufactured for commercial purposes.

Monomer or other reactant and CAS Registry Number (1)	Confi-dential (2)	Typical composition (3)	Identity Mark (X) (4)	Confi-dential (5)	Maximum residual (6)	Confi-dential (7)
[redacted]						
		%			%	
		%			%	
		%			%	

☐ Mark (X) this box if you attach a continuation sheet.

☐

☐

e. Provide a correct representative or partial chemical structure diagram, as complete as can be known, if one can be reasonably ascertained.

[redacted]

☐ Mark (X) this box if you attach a continuation sheet. 23

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Part I -- GENERAL INFORMATION -- Continued

42914-3

Section B -- CHEMICAL IDENTITY INFORMATION -- Continued

3. **Impurities**
   (a) -- Identify each impurity that may be reasonably anticipated to be present in the chemical substance as manufactured for commercial purposes. Provide the CAS Registry Number if available. If there are unidentified impurities, enter "unidentified."
   (b) -- Estimate the maximum weight % of each impurity. If there are unidentified impurities, estimate their total weight %.

Impurity and CAS Registry Number (a)	Maximum percent (b)	Confi-dential
NONE	%	
	%	
	%	
	%	
	%	
	%	
	%	

☐ Mark (X) this box if you attach a continuation sheet.

4. **Synonyms** -- Enter any chemical synonyms for the new chemical substance identified in subsection 1 or 2. (Confi-dential)

/

☐ Mark (X) this box if you attach a continuation sheet.

5. **Trade identification** -- List trade names for the new chemical substance identified in subsection 1 or 2.

[redacted]

☐ Mark (X) this box if you attach a continuation sheet.

☐ Mark (X) this box if you attach a continuation sheet.

7. **Byproducts** -- Describe any byproducts resulting from the manufacture, processing, use, or disposal of the new chemical substance sites you control. Provide the CAS Registry Number if available.

Byproduct (1)	CAS Registry Number (2)	Confi-dential
NONE		

☐ Mark (X) this box if you attach a continuation sheet.

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AUSIMONT S.p.A.

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SAFETY DATA SHEET

[redacted]

Updating: 1/4/1999

Ref: emu0224e

COMPANY IDENTIFICATION

Company:	AUSIMONT S.p.A.
Address:	Viale Lombardia, 20 20021 - Bollate (MI)
Telephone Number:	02-3835-1
Fax Number:	02-3835- 6302

Emergency Calls
Telephone Number: 02-3835- 1

1) COMPOUND IDENTIFICATION

Trade Name:	[redacted]		
Chemical Description:	Aqueus emulsion of perfluoropolyether derivative		
Synonyms:	----		
Molecular Weight	n.a.	Empirical Formula:	----
CAS Name:	not assigned		
CAS Number :	not assigned	CEE Number	not assigned
EINECS Number:	not assigned	ELINCS Number:	not assigned

2) COMPOSITION/INFORMATION ON INGREDIENTS

Composition

[redacted]

Substances with estabilished exposure limits or classifiable as dangerous according to EC Directive 67/548 and following amendments, in concentration equal or higher than that reported in EC Directive 88/379 (item 3, sect. 6):

Name	Conc.	CAS N°	Symbol	Risk Phrases
[redacted]	[redacted]		T	R 25

3) HAZARDS IDENTIFICATION

Adverse human health effects	The product may be toxic by contact and ingestion.
Main symptoms	Eye and skin irritation . Ingestion in large amounts may cause abdominal pain.
Environmental effects	The product ,when properly used, is not dangerous for the environment.
Physical and chemical hazards	Harmful effects for environment are expected in case of thermal decomposition for the emission of highly toxic and corrosive gases.

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CONFIDENTIAL

SAFETY DATA SHEET

[redacted]

Updating: 1/4/1999

Ref: emu0224e

4) FIRST-AID MEASURES

Symptomatology following exposure

Eye contact	Redness, light irritation.
Skin contact	Redness, light irritation.
Ingestion	Abdominal pain, nausea, vomit, diarrhoea.
Inhalation	----

First Aid Measures

Eye contact	Wash with plenty of water for at least 15 minutes. Seek medical advice in case of persistent pain.
Skin contact	Wash with water and soap. Seek medical advice in case of persistent pain.
Ingestion	Give some glasses of water to drink. Induce vomiting. Seek medical advice immediately.
Inhalation	----

5) FIRE FIGHTING MEASURES

Specific hazards	The product is not flammable . Thermal decomposition occurs with emission of toxic and corrosive gases (HF and COF_2)
Specific methods	Remove the containers when possible to do in safe conditions. Keep containers cool by spraying with water when exposed to fire.
Extinguishing media	Water, powders, foams, chemicals, CO_2.
Protection of fire-fighters	Self-contained breathing apparatus. Protective antiacid clothing.

6) ACCIDENTAL RELEASE MEASURES

Personal precautions	The accidental release of the product by leaks or spills may be dangerous only in case of thermal decomposition. Wear suitable protective clothing (see sect.8).
Environmental precautions	Avoid the uncontrolled release of the product in sewage system, in surface and underground waters and in the soil.
Methods for cleaning up	Absorb the released liquid with earth, sand or sawdust. Collect it in suitable containers for disposal.

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SAFETY DATA SHEET

[redacted]

Updating: 1/4/1999

Ref: emu0224e

7) HANDLING AND STORAGE

HANDLING

Precautions Avoid heating above the decomposition temperature (250 °C).

Technical measures Provide working areas with adequate ventilation systems and with water-wash facilities (eye-bath and emergency shower).

STORAGE

Storage conditions Keep containers closed.
Keep away from heat sources.
Keep away from combustible, explosive and incompatible materials.

Recommended materials Glass, plastic (polyethylene).

Non suitable materials ----

8) EXPOSURE CONTROLS/PERSONAL PROTECTION

Exposure limits Only threshold limit of by-products from thermal decomposition are available (ACGIH 1998)

HF	TLV/CEILING	2.6	mg/mc	3	ppm
HCl	TLV/CEILING	7.5	mg/mc	5	ppm
COF2	TLV/STEL	13.5	mg/mc	5	ppm

Engineering Measures Provide working areas with adequate ventilation/aspiration systems.

PERSONAL PROTECTIVE EQUIPMENT

Respiratory protection Not necessary in normal use, self-contained breathing apparatus in case of fire.

Eye protection Safety goggles.

Hand protection Rubber gloves

Skin and body protection Worksuit or rubber apron

Hygiene measures Do not drink, eat and smoke during handling

9) PHYSICAL AND CHEMICAL PROPERTIES

Physical state	liquid
Colour:	colourless
Odour:	odourless
pH:	7-8
Boiling point:	not available
Flashpoint:	not flammable
Explosion properties:	not explosive
Vapour pressure:	not available
Vapour density.:	not available
Density:	not available
Solubility in water:	not available
Solubility in organic solvents:	not available

AUSIMONT S.p.A.

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SAFETY DATA SHEET

[redacted]

Updating: 1/4/1999

Ref: emu0224e

10) STABILITY AND REACTIVITY

Stability: The product is stable in normal conditions of use and storage

Conditions to avoid: Avoid heating the product above 250 °C.
Avoid reaction with strong alkaline compounds (alkaline hydroxides, ammonia,non aqueous alkalis).
Avoid reaction with Lewis acids ($AlCl_3$, SbF_5, CoF_3) above 100°C.
Avoid reaction with magnesium

Hazardous decomposition products: The product may decompose at high temperature (>250°C) with emission of HF and COF_2, which are toxic and corrosive gases.

11) TOXICOLOGICAL INFORMATION

Penetration routes Contact and ingestion

Adverse effects for the Human Health

Delayed and/or immediate effects after short and/or prolonged exposure:

Acute toxicity:	no known effect
Local effects / irritating power:	irritant to eyes and skin.
Sensitization:	" " "
Chronic toxicity:	" " "
Carcinogenicity:	" " "
Mutagenicity:	" " "
Reproduction toxicity:	" " "

Experimental toxicological data *(data referred to Sodium salt of acid perfluoropolyether)*

LD_{50} - oral	[redacted]	[redacted]
LD_{50} - skin		
Sensitisation - skin		

12) ECOLOGICAL INFORMATION

Environmental effects

– Mobility:	No available data
– Persistence/degradability:	" " "
– Bioaccumulation:	" " "

Ecostability data no available data

Ecotoxicity data no available data

EVALUATION Use the product according to the good working practice, avoiding polluting the environment.

AUSIMONT S.p.A.

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SAFETY DATA SHEET

[redacted]

Updating: 1/4/1999 Ref: emu0224e

13) DISPOSAL CONSIDERATIONS

Waste treatment Send the waste product to thermal destruction, using high-temperature incineretors designed to burn fluorine compounds.

Packaging treatment Reuse empty containers whenever possible.
Send unusable containers to authorized landfills, according to local laws and regulations.

14) TRANSPORT INFORMATION

Specific hazards Product classified as toxic for transportation

Packaging informations Product usually shipped in polyethylene containers of different capacities (drums, jerricans, tanks).

INTERNATIONAL TRANSPORT CLASSIFICATION

U.N. Number: 2810
Packaging group: III

ADR/RID
class 6.1 item 25°(c) label 6.1 HI/UN N° [ ]

IMDG/IMO
class 6.1 IMDG Code pag. 6270-1 EmS N. 6.1 -02 MFAG Table N. ----

ICAO/IATA
class 6.1 code 2810

AUSIMONT S.p.A.

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SAFETY DATA SHEET

[redacted]

Updating: 1/4/1999 Ref: emu0224e

15) REGULATORY INFORMATION

CEE Regulations (Directive 67/548 and following amendments)

Classification

Classification type: Provisional

Hazard class: Toxic

Labeling

Trade Name: [redacted]

Hazard Symbol:

Risk phrases	(R)	R 25	Toxic if swallowed
Safety phrases	(S)	S 28	After contact with skin, wash immediately with plenty of water.
		S 46	If swallowed, seek medical advice immediately and show this container or label.

16) OTHER INFORMATION

BIBLIOGRAPHY

- Ausimont internal data

Safety Data Sheet according to EC Directive 93/112

The information given in this safety data sheet is for safety purpose only. It is given in good faith and based on the best knowledge and experience of the company at the date of issuing.
The Company is not responsible for damages caused by the use of the product in applications for which it was not intended or for conditions of use outside its control.