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

1.1 Product identifier

- Trade name HALAR® 901S

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

Uses of the Substance/Mixture

- For industrial use only.

1.3 Details of the supplier of the safety data sheet

Company

SOLVAY SPECIALTY POLYMERS ITALY S.p.A.
VIALE LOMBARDIA, 20
20021, BOLLATE
ITALIA
Tel: +39-02-290921
Fax: +39-02-29092614

E-mail address

sds.solvay@solvay.com

1.4 Emergency telephone number

+44(0)1235 239 670 [CareChem 24]

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Classification (Regulation (EC) No 1272/2008)

- Not classified as hazardous product under the regulation above.

2.2 Label elements

Regulation (EC) No 1272/2008

- Not labelled as hazardous product under the above regulation.

2.3 Other hazards which do not result in classification

- Thermal decomposition can lead to release of toxic and corrosive gases.

SECTION 3: Composition/information on ingredients

3.1 Substance

- Not applicable, this product is a mixture.

3.2 Mixture

Information on Components and Impurities

Chemical name	Identification number	Classification Regulation (EC) No 1272/2008	Concentration [%]
Ethene,chlorotrifluoro-,polymer with ethene	CAS-No. : 25101-45-5 self classification	Not classified	>= 99

SECTION 4: First aid measures

4.1 Description of first aid measures

In case of inhalation

- Remove the subject from dusty environment and let him blow his nose.

Exposure to decomposition products
- Move to fresh air.
- Oxygen or artificial respiration if needed.
- Symptoms of poisoning may develop many hours after exposure.
- Keep under medical supervision for at least 48 hours.

In case of skin contact

- Wash off with soap and water.

Exposure to decomposition products
- Wash off with soap and water.
- If fingers/finger nails are touched, even if there is no pain, dip them in a bath of 5% calcium gluconate for 15 to 20 minutes.
- Consult a physician.

In case of eye contact

- In the case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

Exposure to decomposition products
- Rinse immediately with plenty of water, also under the eyelids.
- Remove contact lenses.

In case of ingestion

- If large quantities of this material are swallowed, call a physician immediately.
- Never give anything by mouth to an unconscious person.

4.2 Most important symptoms and effects, both acute and delayed

In case of inhalation

Effects
- Mechanical irritation from the particulates generated by the product.
- The thermal decomposition vapours of fluorinated polymers may cause polymer fume fever with flu-like symptoms in humans, especially when smoking contaminated tobacco.

Symptoms
- Headache
- Shortness of breath
- Cough

In case of skin contact

Effects
- Mechanical irritation from the particulates generated by the product.

Symptoms

Exposure to decomposition products
- Irritation
- Redness
- Burn

In case of eye contact

Effects
- Mechanical irritation from the particulates generated by the product.

Symptoms

Exposure to decomposition products
- Irritation
- Redness
- Burn

In case of ingestion

Effects

- Low ingestion hazard.

4.3 Indication of any immediate medical attention and special treatment needed

Notes to physician

- None

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media

- Water
- powder
- Foam
- Dry chemical
- Carbon dioxide (CO2)

Unsuitable extinguishing media

- None

5.2 Special hazards arising from the substance or mixture

Specific hazards during firefighting

- The product is not flammable.
- Not explosive
- In case of fire hazardous decomposition products may be produced such as:

Hazardous combustion products:

- Gaseous hydrogen fluoride (HF).
- Fluorophosgene
- Gaseous hydrogen chloride (HCl).
- Other hazardous decomposition products may be formed.

5.3 Advice for firefighters

Special protective equipment for firefighters

- Wear self-contained breathing apparatus and protective suit.
- When intervention in close proximity wear acid resistant over suit.

Further information

- Evacuate personnel to safe areas.
- Approach from upwind.
- Protect intervention team with a water spray as they approach the fire.
- Keep containers and surroundings cool with water spray.
- Keep product and empty container away from heat and sources of ignition.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Advice for non-emergency personnel

- Prevent further leakage or spillage if safe to do so.

Advice for emergency responders

- Ensure adequate ventilation.
- Avoid dust formation.

- Material can create slippery conditions.
- Sweep up to prevent slipping hazard.
- Keep away from open flames, hot surfaces and sources of ignition.

6.2 Environmental precautions

- Should not be released into the environment.
- Do not flush into surface water or sanitary sewer system.

6.3 Methods and materials for containment and cleaning up

- Sweep up or vacuum up spillage and collect in suitable container for disposal.

6.4 Reference to other sections

- Refer to protective measures listed in sections 7 and 8.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

- Ensure adequate ventilation.
- Avoid dust formation.
- Use personal protective equipment.
- Do not contaminate tobacco products.
- Keep away from heat and sources of ignition.
- To avoid thermal decomposition, do not overheat.
- Take measures to prevent the build up of electrostatic charge.
- Clean and dry piping circuits and equipment before any operations.
- Ensure all equipment is electrically grounded before beginning transfer operations.

Hygiene measures

- Ensure that eyewash stations and safety showers are close to the workstation location.
- When using do not eat, drink or smoke.
- Wash hands before breaks and at the end of workday.
- Handle in accordance with good industrial hygiene and safety practice.

7.2 Conditions for safe storage, including any incompatibilities

Technical measures/Storage conditions

- Keep away from heat and sources of ignition.
- Keep in properly labelled containers.
- Keep away from combustible material.
- Keep away from heat/sparks/open flames/hot surfaces. No smoking.
- Keep away from incompatible products
- Provide tight electrical equipment well protected against corrosion.
- Refer to protective measures listed in sections 7 and 8.

Packaging material

Suitable material

- glass
- Metals
- Plastic materials.
- cardboard outer-packaging

7.3 Specific end use(s)

- Contact your supplier for additional information

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

- Contains no substances with occupational exposure limit values above their regulatory reporting threshold.

Components with workplace occupational exposure limits

Components	Value type	Value	Basis
Particles not otherwise specified (PNOS)	TWA	10 mg/m3	USA. ACGIH Threshold Limit Values (TLV)
	Form of exposure : Inhalable fraction		
Particles not otherwise specified (PNOS)	TWA	3 mg/m3	USA. ACGIH Threshold Limit Values (TLV)
	Form of exposure : Respirable fraction		

Threshold limit values of by-products from thermal decomposition:

Components with workplace occupational exposure limits

Components	Value type	Value	Basis
hydrogen fluoride	TWA	1.8 ppm 1.5 mg/m3	UK. EH40 WEL - Workplace Exposure Limits
	Expressed as :Fluorine		
hydrogen fluoride	STEL	3 ppm 2.5 mg/m3	UK. EH40 WEL - Workplace Exposure Limits
	Expressed as :Fluorine		
hydrogen fluoride	TWA	1.8 ppm 1.5 mg/m3	Europe. Commission Directive 2000/39/EC establishing a first list of indicative occupational exposure limit values
	Indicative		
hydrogen fluoride	STEL	3 ppm 2.5 mg/m3	Europe. Commission Directive 2000/39/EC establishing a first list of indicative occupational exposure limit values
	Indicative		
hydrogen fluoride	TWA	0.5 ppm	USA. ACGIH Threshold Limit Values (TLV)
	Danger of cutaneous absorption Expressed as :Fluorine		
hydrogen fluoride	C	2 ppm	USA. ACGIH Threshold Limit Values (TLV)
	Danger of cutaneous absorption Expressed as :Fluorine		

carbonyl difluoride	TWA	2.5 mg/m3	UK. EH40 WEL - Workplace Exposure Limits
	Where no specific short-term exposure limit is listed, a figure three times the long-term exposure should be used Expressed as :Fluorine		
carbonyl difluoride	TWA	2.5 mg/m3	Europe. Commission Directive 2000/39/EC establishing a first list of indicative occupational exposure limit values
	Indicative Expressed as :Fluorine		
carbonyl difluoride	TWA	2 ppm	USA. ACGIH Threshold Limit Values (TLV)
carbonyl difluoride	STEL	5 ppm	USA. ACGIH Threshold Limit Values (TLV)
hydrogen chloride	TWA	1 ppm 2 mg/m3	UK. EH40 WEL - Workplace Exposure Limits
	Form of exposure : Gas and aerosol mists		
hydrogen chloride	STEL	5 ppm 8 mg/m3	UK. EH40 WEL - Workplace Exposure Limits
	Form of exposure : Gas and aerosol mists		
hydrogen chloride	TWA	5 ppm 8 mg/m3	Europe. Commission Directive 2000/39/EC establishing a first list of indicative occupational exposure limit values
	Indicative		
hydrogen chloride	STEL	10 ppm 15 mg/m3	Europe. Commission Directive 2000/39/EC establishing a first list of indicative occupational exposure limit values
	Indicative		
hydrogen chloride	C	2 ppm	USA. ACGIH Threshold Limit Values (TLV)

Biological Exposure Indices

Components	Value type	Value	Basis
hydrogen fluoride	BEI	2 mg/l Fluoride Urine Prior to shift (16 hours after exposure ceases)	ACGIH - Biological Exposure Indices (BEI)
	BEI	3 mg/l Fluoride Urine End of shift (As soon as possible after exposure ceases)	ACGIH - Biological Exposure Indices (BEI)

8.2 Exposure controls

Control measures

Engineering measures

- Provide appropriate exhaust ventilation at machinery and at places where dust can be generated.
- Provide local ventilation appropriate to the product decomposition risk (see section 10).
- Refer to protective measures listed in sections 7 and 8.
- Apply technical measures to comply with the occupational exposure limits.

Individual protection measures

Respiratory protection

- In case of insufficient ventilation, wear suitable respiratory equipment.
- In case of dust clouds, dust mask type P2.
- In case of decomposition (see section 10), use an air breathing apparatus with face mask.
- Use only respiratory protection that conforms to international/ national standards.

Hand protection

- Wear protective gloves.

Suitable material

- Nitrile rubber
- PVC
- Neoprene gloves
- butyl-rubber

- Take note of the information given by the producer concerning permeability and break through times, and of special workplace conditions (mechanical strain, duration of contact).

Eye protection

- Safety goggles

Skin and body protection

- Wear work overall and safety shoes.

Hygiene measures

- Ensure that eyewash stations and safety showers are close to the workstation location.
- When using do not eat, drink or smoke.
- Wash hands before breaks and at the end of workday.
- Handle in accordance with good industrial hygiene and safety practice.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Appearance	Form: pellets Physical state: solid Colour: white
Odour	odourless
Odour Threshold	no data available
pH	no data available
Melting point/freezing point	Melting point/range: 230 - 242 °C
Initial boiling point and boiling range	Boiling point/boiling range: Not applicable
Flash point	The product is not flammable.
Evaporation rate (Butylacetate = 1)	no data available
Flammability (solid, gas)	The product is not flammable.
Flammability/Explosive limit	no data available
Auto-ignition temperature	no data available
Vapour pressure	no data available
Vapour density	no data available
Density	1.65 - 1.71 g/cm3
Relative density	no data available
Solubility	Water solubility: insoluble Solubility in other solvents: common organic solvents : insoluble
Partition coefficient: n-octanol/water	no data available
Decomposition temperature	> 300 °C
Viscosity	no data available
Explosive properties	Not explosive
Oxidizing properties	Not considered as oxidizing

9.2 Other information

no data available

SECTION 10: Stability and reactivity

10.1 Reactivity

- No dangerous reaction known under conditions of normal use.

10.2 Chemical stability

- Stable under recommended storage conditions.

10.3 Possibility of hazardous reactions

- Under certain conditions, small dust-particles from the product may form flammable and explosive mixtures with the air.

10.4 Conditions to avoid

- To avoid thermal decomposition, do not overheat.
- Keep away from flames and sparks.

10.5 Incompatible materials

- Combustible material
- Flammable materials
- Alkali metals (molten form)

10.6 Hazardous decomposition products

- Gaseous hydrogen fluoride (HF).
- Fluorophosgene
- Gaseous hydrogen chloride (HCl).
- Other hazardous decomposition products may be formed.

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute toxicity

Acute oral toxicity	no data available
Acute inhalation toxicity	no data available
Acute dermal toxicity	no data available
Acute toxicity (other routes of administration)	no data available
Skin corrosion/irritation	no data available
Serious eye damage/eye irritation	no data available
Respiratory or skin sensitisation	no data available

Mutagenicity

Genotoxicity in vitro	no data available
Genotoxicity in vivo	no data available
Carcinogenicity	no data available

Toxicity for reproduction and development

Toxicity to reproduction/Fertility	no data available
Developmental Toxicity/Teratogenicity	no data available

STOT

STOT - single exposure	no data available
STOT - repeated exposure	no data available
Aspiration toxicity	no data available
Further information	Description of possible hazardous to health effects is based on experience and/or toxicological characteristics of several components. Product dust may be irritating to eyes, skin and respiratory system. The thermal decomposition vapours of fluorinated polymers may cause polymer fume fever with flu-like symptoms in humans, especially when smoking contaminated tobacco. Thermal decomposition can lead to release of toxic and corrosive gases. The exposure to decomposition products causes severe irritation of eyes, skin and mucous membranes.

SECTION 12: Ecological information

12.1 Toxicity

Aquatic Compartment

Acute toxicity to fish	no data available
Acute toxicity to daphnia and other aquatic invertebrates.	no data available
Toxicity to aquatic plants	no data available
Toxicity to microorganisms	no data available
Chronic toxicity to fish	no data available
Chronic toxicity to daphnia and other aquatic invertebrates.	no data available
Chronic Toxicity to aquatic plants	no data available

12.2 Persistence and degradability

Abiotic degradation	no data available
Physical- and photo-chemical	no data available

elimination

Biodegradation no data available

12.3 Bioaccumulative potential

Partition coefficient: n-octanol/water no data available

Bioconcentration factor (BCF) no data available

12.4 Mobility in soil

Adsorption potential (Koc) no data available

Known distribution to environmental compartments no data available

12.5 Results of PBT and vPvB assessment no data available

12.6 Other adverse effects no data available

Remarks Ecological injuries are not known or expected under normal use.

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Product Disposal

- Can be incinerated, when in compliance with local regulations.
- The incinerator must be equipped with a system for the neutralisation or recovery of HF.
- Dispose of in accordance with local regulations.

Advice on cleaning and disposal of packaging

- Empty containers can be landfilled, when in accordance with the local regulations.

SECTION 14: Transport information

ADR
not regulated

RID
not regulated

IMDG
not regulated

IATA
not regulated

ADN/ADNR
not regulated

Note: The above regulatory prescriptions are those valid on the date of publication of this sheet. Given the possible evolution of transport regulations for hazardous materials, it would be advisable to check their validity with your sales office.

SECTION 15: Regulatory information

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

Other regulations

- Regulation (EC) No 1272/2008 of the European Parliament and of the Council of 16 December 2008 on classification, labelling and packaging of substances and mixtures, as amended
- Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH), as amended
- European Waste Catalogue
- Waste codes should be assigned by the user based on the application for which the product was used.

Notification status

Inventory Information	Status
United States TSCA Inventory	- Listed on Inventory
Canadian Domestic Substances List (DSL)	- Listed on Inventory
Australia Inventory of Chemical Substances (AICS)	- Listed on Inventory
Korea. Korean Existing Chemicals Inventory (KECI)	- Listed on Inventory
China. Inventory of Existing Chemical Substances in China (IECSC)	- Listed on Inventory
Japan. ISHL - Inventory of Chemical Substances	- Listed on Inventory
Japan. CSCL - Inventory of Existing and New Chemical Substances	- Listed on Inventory
Philippines Inventory of Chemicals and Chemical Substances (PICCS)	- Listed on Inventory
New Zealand. Inventory of Chemical Substances	- Listed on Inventory
Taiwan. Chemical Substance Inventory (TCSI)	- Listed on Inventory
EU. European Registration, Evaluation, Authorisation and Restriction of Chemical (REACH)	- If product is purchased from Solvay in Europe it is in compliance with REACH, if not please contact the supplier.

15.2 Chemical safety assessment

- not required

SECTION 16: Other information

Key or legend to abbreviations and acronyms used in the safety data sheet

- C Ceiling limit
- STEL Short term exposure limit
- TWA 8-hour, time-weighted average

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. Such information is only given as a guidance to help the user handle, use, process, store, transport, dispose and release the product in satisfactory safety conditions and is not to be considered as a warranty or quality specification. It should be used in conjunction with technical sheets but do not replace them. Thus, the information only relates to the designated specific product and may not be applicable if such product is used in combination with other materials or in any other manufacturing process, unless otherwise specifically indicated. It does not release the user from ensuring he is in conformity with all regulations linked to its activity.