

SECTION 1: Identification of the substance/mixture and of the company/undertaking**1.1 Product identifier**

- Trade name HALAR® 901

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 USA, LLC
4500 MCGINNIS FERRY ROAD
30005-3914, ALPHARETTA
USA
Tel: +1-770-7728200
Fax: +1-770-7728213
Product Information:
+1-800-2210553

1.4 Emergency telephone

FOR EMERGENCIES INVOLVING A SPILL, LEAK, FIRE, EXPOSURE OR ACCIDENT, CONTACT CHEMTREC (24-Hour Number): +1-800-424-9300 within the United States and Canada, or +1-703-527-3887 for international collect calls.

SECTION 2: Hazards identification

Although OSHA has not adopted the environmental portion of the GHS regulations, this document may include information on environmental effects.

2.1 Classification of the substance or mixture**HCS 2012 (29 CFR 1910.1200)**

Combustible dust

May form combustible dust concentrations in air.

2.2 Label elements**HCS 2012 (29 CFR 1910.1200)****Signal Word**

- Warning

Hazard Statements

- May form combustible dust concentrations in air.

2.3 Other hazards which do not result in classification

- This product as shipped is not a combustible dust, however if small particles are generated during further processing, handling or by other means, combustible dust concentrations may form in the air.

SECTION 3: Composition/information on ingredients**3.1 Substance**

- Not applicable, this product is a mixture.

3.2 Mixture**Hazardous Ingredients and Impurities**

- No ingredients are hazardous.

Non Hazardous Ingredients and Impurities

Chemical name	Identification number CAS-No.	Concentration [%]
Ethene, 1-chloro-1,2,2-trifluoro-, polymer with ethene	25101-45-5	>= 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 vapors of fluorinated polymers may cause polymer fume fever with flu-like symptoms in humans, especially when smoking contaminated tobacco.

Symptoms

P13000019397

Version : 3.05 / US (Z8)

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- 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

- no data available

SECTION 5: Firefighting measures**Flash point**

The product is not flammable.

Autoignition temperature

No data available

Flammability / Explosive limit

No data available

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 fire fighting**

- 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 fire-fighters**

- 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.
- The product should not be allowed to enter drains, water courses or the soil.
- In case of accidental release or spill, immediately notify the appropriate authorities if required by Federal, State/Provincial and local laws and regulations.

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.
- 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 labeled 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

Introductory Remarks: These recommendations provide general guidance for handling this product. Because specific work environments and material handling practices vary, safety procedures should be developed for each intended application. Assistance with selection, use and maintenance of worker protection equipment is generally available from equipment manufacturers.

8.1 Control parameters

- Contains no substances with occupational exposure limit values.

Components with workplace occupational exposure limits

Components	Value type	Value	Basis
Particles not otherwise specified (PNOS)			National Institute for Occupational Safety and Health

HALAR® 901

Revision Date 09/23/2021

	Includes all inert or nuisance dusts, whether mineral, inorganic, not listed specifically in 1910.1000., See Appendix D - Substances with No Established RELs		
Particles not otherwise specified (PNOS)	TWA	15 mg/m3	Occupational Safety and Health Administration - Table Z-1 Limits for Air Contaminants
	Form of exposure : total dust All inert or nuisance dusts, whether mineral, inorganic, or organic, not listed specifically by substance name are covered by the Particulates Not Otherwise Regulated (PNOR) limit which is the same as the inert or nuisance dust limit of Table Z-3.		
Particles not otherwise specified (PNOS)	TWA	5 mg/m3	Occupational Safety and Health Administration - Table Z-1 Limits for Air Contaminants
	Form of exposure : respirable fraction All inert or nuisance dusts, whether mineral, inorganic, or organic, not listed specifically by substance name are covered by the Particulates Not Otherwise Regulated (PNOR) limit which is the same as the inert or nuisance dust limit of Table Z-3.		
Particles not otherwise specified (PNOS)	TWA	10 mg/m3	American Conference of Governmental Industrial Hygienists
	Form of exposure : Inhalable particulate matter		
Particles not otherwise specified (PNOS)	TWA	3 mg/m3	American Conference of Governmental Industrial Hygienists
	Form of exposure : Respirable particulate matter		

Threshold limit values of by-products from thermal decomposition:**Components with workplace occupational exposure limits**

Components	Value type	Value	Basis
Hydrofluoric acid	TWA	3 ppm 2.5 mg/m3	National Institute for Occupational Safety and Health
Hydrofluoric acid	C	6 ppm 5 mg/m3 15 minute ceiling value	National Institute for Occupational Safety and Health
Hydrofluoric acid	TWA	3 ppm	Occupational Safety and Health Administration - Table Z-2
Hydrofluoric acid	TWA	0.5 ppm	American Conference of Governmental Industrial Hygienists
	Danger of cutaneous absorption Expressed as :Fluorine		
Hydrofluoric acid	C	2 ppm	American Conference of Governmental Industrial Hygienists
	Danger of cutaneous absorption Expressed as :Fluorine		
Hydrofluoric acid			Occupational Safety and Health Administration - Table Z-1 Limits for Air Contaminants
	Expressed as :Fluorine		
Carbonic difluoride	TWA	2 ppm	American Conference of Governmental Industrial Hygienists
Carbonic difluoride	STEL	5 ppm	American Conference of Governmental Industrial Hygienists

P13000019397

Version : 3.05 / US (Z8)

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Carbonic difluoride	TWA	2 ppm 5 mg/m3	National Institute for Occupational Safety and Health
Carbonic difluoride	ST	5 ppm 15 mg/m3	National Institute for Occupational Safety and Health
Hydrochloric acid	C	2 ppm	American Conference of Governmental Industrial Hygienists
Hydrochloric acid	C	5 ppm 7 mg/m3	National Institute for Occupational Safety and Health
Hydrochloric acid	C	5 ppm 7 mg/m3	Occupational Safety and Health Administration - Table Z-1 Limits for Air Contaminants

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.
- For additional information, consult the current edition of The Guide to the Safe Handling of Fluoropolymers published by the Society of Plastics Industry, Inc. (SPI) Fluoropolymer Division.

Individual protection measures

Respiratory protection

- When workers are facing concentrations above the exposure limit they must use appropriate certified respirators.
- Use respirator when performing operations involving potential exposure to vapor of the product.
- When respirators are required, select NIOSH/MSHA approved equipment based on actual or potential airborne concentrations and in accordance with the appropriate regulatory standards and/or industrial recommendations.
- Comply with OSHA respiratory protection requirements.
- For additional information, consult the current edition of The Guide to the Safe Handling of Fluoropolymers published by the Society of Plastics Industry, Inc. (SPI) Fluoropolymer Division.

Hand protection

- Wear protective gloves.
- Protective gloves - impervious chemical resistant:

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 glasses with side-shields
- In case of high-temperature processing
- Tightly fitting safety goggles

Skin and body protection

- Long sleeved clothing
- 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

Physical and Chemical properties here represent typical properties of this product. Contact the business area using the Product information phone number in Section 1 for its exact specifications.

9.1 Information on basic physical and chemical properties

<u>Physical state</u>	solid
<u>Form</u>	pellets
<u>Color</u>	white
<u>Odor</u>	odorless
<u>Odor Threshold</u>	No data available
<u>Melting point/freezing point</u>	<u>Melting point/range:</u> 446 - 468 °F (230 - 242 °C)
<u>Initial boiling point and boiling range</u>	<u>Boiling point/boiling range:</u> Not applicable
<u>Flammability (solid, gas)</u>	The product is not flammable. May form combustible dust concentrations in air.
<u>Flammability (liquids)</u>	No data available
<u>Flammability / Explosive limit</u>	No data available
<u>Flash point</u>	The product is not flammable.
<u>Autoignition temperature</u>	No data available
<u>Decomposition temperature</u>	> 572 °F (> 300 °C)
<u>pH</u>	No data available
<u>Viscosity</u>	No data available
<u>Solubility</u>	<u>Water solubility:</u> insoluble <u>Solubility in other solvents:</u> common organic solvents: insoluble
<u>Partition coefficient: n-octanol/water</u>	No data available
<u>Vapor pressure</u>	No data available
<u>Density</u>	1.65 - 1.71 g/cm3
<u>Relative density</u>	No data available
<u>Relative vapor density</u>	No data available

Particle characteristics No data available

Evaporation rate (Butylacetate = 1) No data available

9.2 Other information

Oxidizing properties Not considered as oxidizing.

Impact sensitivity Not explosive

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 sensitization No data available

Mutagenicity**Genotoxicity in vitro** No data available**Genotoxicity in vivo** No data available**Carcinogenicity** No data available

This product does not contain any ingredient designated as probable or suspected human carcinogens by:

NTP

IARC

OSHA

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**Experience with human 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 ingredients.

Product dust may be irritating to eyes, skin and respiratory system.

The thermal decomposition vapors 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**12.2 Persistence and degradability****Abiotic degradation**

No data available

Physical- and photo-chemical elimination

No data available

Biodegradation

No data available

12.3 Bioaccumulative potential

P13000019397

Version : 3.05 / US (Z8)

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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

- Do not dump into any sewers, on the ground, or into any body of water. All disposal methods must be in compliance with all Federal, State/Provincial and local laws and regulations. Regulations may vary in different locations.
- Waste characterizations and compliance with applicable laws and regulations are the responsibility of the waste generator.
- Can be incinerated, when in compliance with local regulations.
- The incinerator must be equipped with a system for the neutralization or recovery of HF.

Advice on cleaning and disposal of packaging

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

SECTION 14: Transport information

DOT

not regulated

TDG

not regulated

NOM

not regulated

IMDG

not regulated

IATA

not regulated

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

SECTION 15: Regulatory information

15.1 Notification status

P13000019397

Version : 3.05 / US (Z8)

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HALAR® 901

Revision Date 09/23/2021

Inventory Information	Status
United States TSCA Inventory	- Listed as active on the TSCA inventory.
Canadian Domestic Substances List (DSL)	- Listed on Inventory
Australia Inventory of Chemical Substances (AICS)	- Listed on Inventory
Korea. Korean Existing Chemicals Inventory (KECI)	- This substance/mixture can only be imported by Solvay. Contact Solvay for further details.
China. Inventory of Existing Chemical Substances in China (IECSC)	- This substance/mixture can only be imported by Solvay. Contact Solvay for further details.
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, Authorization 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 Federal Regulations**US. EPA EPCRA SARA Title III****SARA HAZARD DESIGNATION SECTIONS 311/312 (40 CFR 370)**

Combustible dust	Yes
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The categories not mentioned are not relevant for the product.

Section 313 Toxic Chemicals (40 CFR 372.65)

This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

Section 302 Emergency Planning Extremely Hazardous Substance Threshold Planning Quantity (40 CFR 355)

This material does not contain any components with a section 302 EHS TPQ.

Section 302 Emergency Planning Extremely Hazardous Substance Reportable Quantity (40 CFR 355)

This material does not contain any components with a SARA 302 RQ.

Section 304 Emergency Release Notification Reportable Quantity (40 CFR 355)

This material does not contain any components with a section 304 EHS RQ.

US. EPA CERCLA Hazardous Substances and Reportable Quantities (40 CFR 302.4)

This material does not contain any components with a CERCLA RQ.

15.3 State Regulations

P13000019397

Version : 3.05 / US (Z8)

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US. California Safe Drinking Water & Toxic Enforcement Act (Proposition 65)

This product does not contain any chemicals known to the State of California to cause cancer, birth, or any other reproductive defects.

SECTION 16: Other information

Date Prepared: 09/23/2021

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

- C: Ceiling limit
- PEL: Permissible exposure limit
- ST: STEL - 15-minute TWA exposure that should not be exceeded at any time during a workday
- STEL: Short term exposure limit
- TWA: 8-hour, time-weighted average
- ACGIH: American Conference of Governmental Industrial Hygienists
- OSHA: Occupational Safety and Health Administration
- NTP: National Toxicology Program
- IARC: International Agency for Research on Cancer
- NIOSH: National Institute for Occupational Safety and Health
- ADR: European Agreement on International Carriage of Dangerous Goods by Road.
- ADN: European Agreement on the International Carriage of Dangerous Goods by Inland Waterways.
- RID: European Agreement concerning the International Carriage of Dangerous Goods by Rail.
- IATA: International Air Transport Association.
- ICAO-TI: Technical Specification for Safe Transport of Dangerous Goods by Air.
- IMDG: International Maritime Dangerous Goods.
- TWA: Time weighted average
- ATE: Estimated value of acute toxicity
- EC: European Community number
- CAS: Chemical Abstracts Service.
- LD50: Substance that causes 50% (half) death in the test animals group (Median Fatal Dose).
- LC50: Substance concentration causing 50% (half) death in the test animals group.
- EC50: Effective Concentration of the substance causing the maximum of 50%.
- PBT: Persistent, Bioaccumulative and Toxic substance.
- vPvB: Very Persistent and Very Bioaccumulative.
- SEA: Classification, labeling, packaging regulation
- DNEL: Derived No Effect Level
- PNEC: Predicted No Effect Concentration
- STOT: Specific Target Organ Toxicity

Not all acronyms listed above are referenced in this SDS.

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.