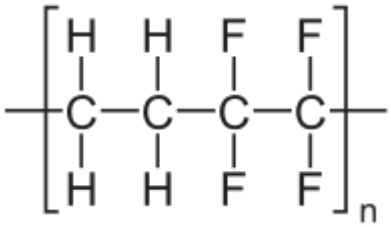
SAFETY DATA SHEET
according to Regulation (EC) No 1272/2008 (CLP/GHS)

SECTION 1. Chemical product identification and manufacturer and/or supplier information

1.1 Product identifier

Product name	HALEON™ Ftoroplast-40 Ethylene-tetrafluoroethylene polymer
Chemical name	Ethylene-tetrafluoroethylene polymer
Commercial name	Haleon™ of grades 000, 001, 002, 003, 004,005, 006, 007, 008, 100,101,102,103,104, 105, 106, 107, 108, P, Sh, Sh-1, Sh-2, LD-1, LD-2
Trademark	HALEON
Synonyms	Ethylene-tetrafluoroethylene copolymer/TFE, ETFE, E/TFE, fluoropolymer ETFE, Polymer ETFE, polymer (ethylene-tetrafluoroethylene), ethylene-tetrafluoroethylene copolymer, ethylene-tetrafluoroethylene polymer, ethylene-tetrafluoroethylene fluoropolymer, polyethylenetetrafluoroethylene, tetrafluoroethylene-ethylene copolymer
Chemical formula	$(CF_2 - CF_2 - CH_2 - CH_2)_n$
Structural formula	
CAS №	25038-71-5
EC REACH Regulation	Product is excepted from EC REACH Regulation. Product is polymer.

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

Use	Insulation of wires and cables, construction units, sealing resistant to radiation, aggressive mediums, oils, fuels, water and air.
Uses advised against	None if used properly.

1.3. Details of the supplier of the safety data sheet

1.3.1. Manufacturer	Joint Stock Company «HaloPolymer Perm» (JSC «HaloPolymer Perm») Russia, 614042, Perm, Lasvinskaya str., 98
Telephone	+7(342) 250-61-50
Website	www.halopolymer.ru
1.3.2. Special representative of non-EC manufacturer	URALCHEM Assist GmbH Johannssenstrasse 10 30159, Hannover, Germany
Telephone	+49 511 45 99 444

1.4 **Emergency telephone number**

Manufacturer / supplier	+7-342-282-85-45 [24 hours]
Great Britain	+44 (0) 203 394 9870 (24/7)
USA	1-877 271 7077

SECTION 2. Hazard(s) identification

2.1. Classification of the substance or mixture

2.1.1 Regulation (EC) No 1272/2008 Not classified as hazardous for supply / use.

2.2. Other hazards Vapors liberated during processing may be hazardous if inhaled.
Contact with melted product may cause thermal skin burns.
During product handling static charges accumulation is possible.

2.3. Additional information See also Section: 15.1.1.

SECTION 3. Composition (information of components)

3.1. Components

Type of Product Identifier According to Art. 18(2) Regulation (EC) № 1272/2008	Identifier №	Identifier Name	Content in Mass.% (or range)	EC №
CAS №	25038-71-5	Ethene-tetrafluoroethene polymer	100	-

SECTION 4. First Aid

4.1. Description of first aid measures

Inhalation: Remove the injured person from polluted area, take off all clothes constraining breathe.
Provide fresh air, warmness (hot-water bottle), rest. In case of heavy or irregular breathing seek medical attention immediately.

Skin contact: In case of contact with melted polymer don't try to remove the melted material. Immediately start continuous cooling with water. Wash thoroughly affected skin area with water and soap. Take off contaminated clothes. Cover burns with sterile cloth. Seek medical attention immediately.

Eye contact: Rinse eyes with plenty water for 15 minutes. If symptoms appear, seek medical attention. Don't try to remove melted material.

Ingestion: Seek medical attention if you feel unwell.

4.2. Most important symptoms and effects, both "Polymer fume fever": Fever. Heavy sweating. Cough-

acute and delayed	ing. Compression in chest. Headache, sickness and vomiting.
4.3. **Indication of any immediate medical attention and special treatment needed**	No special requirements.

SECTION 5. Fire and explosion safety measures and devices

5.1. Extinguishing media	
Suitable extinguishing media	Carbon dioxide, alcohol foam, powder, water spray.
Unsuitable extinguishing media	Non
5.2. Special hazards arising from the substance or mixture	Hazardous decomposition products formed under fire conditions: carbonylfluoride COF_2, carbon monoxide CO, carbon dioxide CO_2, anhydrous hydrogen fluoride HF, perfluorisobuteny C_4F_8, tetrafluoroethylene C_2F_4, other low-molecular fluorocarbons.
5.3. Advice for firefighters	Evacuate people from exposure area. Fire fighters should use self-contained breathing apparatus and fire-proof clothes and gloves. After leaving the fire area firefighters should take a shower. Equipment and machines, used during fire extinguishing are to be cleaned before repair.
5.4. Additional information	Excessive heating above melting point may cause thermal destruction. Very intensive thermo destruction starts at 400°C. When temperature is about 800°C tetrafluoromethan CF_4 (CAS 75-73-0) starts forming. There is no information that fluoropolymer forms explosive dust. Product is low-combustible and able to self-extinction. But in case of fire at thermodestruction is emits toxic, acid and combustible gases and fumes. Water, used during fire extinguishing, and formed wastes should be collected and disposed according to the local regulations.

SECTION 6. Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures	Wear protective equipment. Ensure adequate supply - exhaust and local ventilation. Spilled product must be collected by qualified personnel. Thoroughly collect product not to allow slippery surface forming. Ventilate the premise.
6.2. Environmental precautions	Do not empty into drains / surface water / ground water.
6.3 Methods and material for containment and cleaning up	Collect spilled product into clean container for recycling or disposal. To prevent dust formation use wet cleaning or water.
6.4. Reference to other section	See also section: 8 and 13.
6.5. Additional information	No.

SECTION 7. Handling and storage

7.1. Precautions for safe handling

Use only for industrial purposes. Ensure adequate supply - exhaust and local ventilation. Avoid excessive material heating. Do not inhale heated product fumes / smoke. Avoid hot material contact with skin. Do not eat, drink and smoke during handling. Keep personal hygiene measures. Provide sealing of processing equipment and consuming containers. All equipment should be earth connected (especially in dusty areas). To reduce static charge accumulation air humidity in the premise should be kept at the level not more than 50%.

7.2. Conditions for safe storage, including any incompatibilities

Storage — Store in clean dry premise 1 m away from heating equipment in conditions preventing direct sunlight.

Shelf life — Not limited.

Incomaptible materials — Strong oxidizers, acids, alkali.

7.3. Specific end use(s)

Insulation of wires and cables, construction units, sealing resistant to radiation, aggressive mediums, oils, fuels, water and air.

SECTION 8. Exposure controls/personal protection

8.1. Control parameters

8.1.1. Exposure limits

Maximum Permissible Concentration:	6.0 mg/m3 [TRGS 900 (Technical rules for dealing with dangerous substances), Standard 2000], Germany	
Maximum permissible concentration limits in the air AEL (dust – air mixture):	**Permissible exposure levels (PELs) Occupational Safety and Health Administration (OSHA), USA:**	
	General dust content: Airborne dust:	OSHA PEL/8-h TWA = 15 mg/m^3 OSHA PEL/8-h TWA = 5.0 mg/m^3
	Threshold limit values (TLVs) American Conference of Governmental Industrial Hygienists (ACGIH):	
	Respirable dust Airborne dust:	ACGIH TLV/8-h TWA = 10 mg/m^3 ACGIH TLV/8-h TWA = 3 mg/m^3
	Time-weighted average (TWA) Chemical Manufacturer Recommended Guidelines (CMRG):	
	General dust content Airborne dust:	CMRG TWA = 10 mg/m^3 CMRG TWA = 5.0 mg/m^3

8.1.2. Decomposition products exposure limits

OCCUPATIONAL EXPOSURE – RECOMENDATIONS							
PRODUCT NAME	Formula	CAS Register №	REGIONS				
			CIS	USA			Great Britain
			MAC	ACGIH, TLV	ASHA, PEL	NIOSH, REL	EH40, TLV/TWA
Anhydrous hydrogen fluoride	HF	7664-39-3	0.5 mg/m^3	3 ppm 2.6 mg/m^3	3 ppm 2.6 mg/m^3	3 ppm 2.5 mg/m^3	1.8 ppm 1.5 mg/m^3
Tetrafluoroethylene	C_2F_4	116-14-3	30 mg/m^3	2 ppm 5.4 mg/m^3	No	No	No
Carbonylfluoride	COF_2	353-50-4	No	2 ppm 5.4 mg/m^3	No	2 ppm 5.4 mg/m^3	No
Perfluorisobuteny	C_4F_8	382-21-8	0.1 mg/m^3	0.01 ppm 0.082 mg/m^3	No	No	No
Carbon monoxide	CO	630-08-0	20 mg/m^3	25 ppm 29 mg/m^3	50 ppm 55 mg/m^3	35 ppm 40 mg/m^3	30 ppm 35 mg/m^3
Carbon dioxide	CO_2	124-38-9	27000 mg/m^3	5000 ppm 9000 mg/m^3	5000 ppm 9000 mg/m^3	5000 ppm 9000 mg/m^3	5000 ppm 9150 mg/m^3

8.2. Exposure controls

8.2.1 Engineering controls

Ensure adequate ventilation, including corresponding

	local ventilation. Avoid dust formation. Provide equipment sealing and regular production premises cleaning.
8.2.2 Personal protection	
Eye/face protection 	Wear protective mask or goggles.
Hands protection 	To prevent thermal burns wear suitable gloves, such as: Nomex (polyamide fiber: m-aramid, protection from heating up to 220°C); neoprene gloves (protection from heating up to 204°C)
Skin protection 	Cotton protective clothes, boots. At contact with hot/melted material – thermal resistant clothes and boots.
Respiratory protection 	Breathing apparatus with pressurized air supply. Use face half-mask or mask with filter № 95 (NIOSH approved) or filtering breathing apparatus with filter P1 (EC).
Hygienic measures	Observe general industrial hygienic rules. Hygienic shower at the end of working day. Eating, drinking and smoking is prohibited in the working area.
8.2.3 Environment exposure control	Do not empty into drains / surface water / ground water.

SECTION 9. Physical and chemical properties

9.1. Information on basic physical and chemical properties	
Appearance	Pellets, powder
Color	Pellets: off-white, translucent Powder: white
Odor	Odorless
Melting point, (°C)	250-280
Boiling point/boiling range (°C)	Not applicable
Flash point (°C)	Not applicable
Explosion limit range	Not applicable
Density (g/cm³)	1.69-1.88
Glass transition temperature (°C)	minus 100 – minus 90
Decomposition temperature (°C)	>350
Solubility (in water)	Insoluble
Solubility (in other substances)	No Data Available
Partition coefficient: n-octanol/water	Not applicable
Auto-ignition temperature (°C)	Not applicable
Viscosity (mPa, sec.)	Not applicable
Explosive properties	Not explosive
Oxidizing properties	Not applicable
9.2 Other information	No available information

SECTION 10. Stability and Reactivity

10.1. Reactivity	Oxidizes
10.2. Chemical stability	Stable at normal conditions.
10.3. Possibility of hazardous reactions	At temperature 370°C and higher reacts with alkali and earth metals in the form of powder. Product burns in the atmosphere with 30% oxygen content in presence of burning source creating overheating (above 400°C, 2 hours).
10.4 Conditions to avoid	To avoid thermal decomposition, do not overheat. Abnormally long processing time or high temperatures can produce irritating and toxic fumes. Stable under normal conditions.
10.5 Incompatible materials	Oxidizers, acids, alkali.
10.6 Hazardous decomposition products	Carbonylfluoride COF_2 (CAS 353-50-4), carbon monoxide CO (CAS 630-08-0), carbon dioxide CO_2 (CAS 124-38-9), anhydrous hydrogen fluoride HF (CAS 7664-39-3), perfluorisobuteny C_4F_8 (CAS 382-21-8), tetrafluoroethylene C_2F_4 (CAS 116-14-3), other low-molecular fluorocarbons.

SECTION 11. Toxicity information

If used and stored properly this material unlikely brings significant health risk.

11.1. Information on toxicological effects

11.1.1. Polymer

Acute toxicity

Ingestion	No danger is supposed at proper industrial use.
Inhalation	Dust and fumes emitted during thermal treatment may cause respiratory tract irritation. Thermo destruction products inhalation causes “polymer fume fever”.
Skin contact	Has no irritating effect to skin. Contact with melted product may cause thermal burns.
Eye contact	At mechanical treatment dust may cause light irritation of eye mucosa.
Irritation/corrosiveness of skin	Not classified. There are no evidences of irritation effect at normal handling and use conditions.
Irritation/corrosiveness of eye	Not classified.
Inhalation and skin sensitization	Not classified.
Mutagenicity	No evidences.
Carcinogenicity	No evidences of carcinogenicity for a human.
Reproduction toxicity	Not classified.
STOT – single action	At decomposition products inhaling: Heavy sweating. Coughing. Compression in chest. Headache, sickness and vomiting (“polymer fume fever”).
STOT – repeated action	Continuous decomposition products effect: pulmonary edema.
Danger at inhalation	Not classified.

SECTION 12. Ecological information

12.1. Toxicity	Not determined. Low level is expected based on insolubility in water.
12.2. Persistence and degradability	Separation by filtering and sedimentation is possible due to insolubility in water.
12.3. Bioaccumulative potential	Not determined.
12.4 Mobility in soil	Not determined.
12.5 Results of PBT and vPvB assessment	Not determined.
12.6 Other adverse effects	Not expected.

SECTION 13. Disposal considerations

13.1. Waste treatment methods	Unpolluted product can be recycled. If it is impossible, incinerate product waste at correspondent site in compliance with the regulations determined by local authorities. Contaminated package should be emptied and sent to incineration according to national and local regulations.
13.2. Waste code	Unpolluted waste code according to European waste catalogue (EWC): 20 01 06, other plastic and

SECTION 14. Transport information

Not classified as dangerous for transportation.

14.1. UN number	No
14.2. Proper shipping name	**motor transport:** plastic materials (trademark Haleon™) **railway transport:** plastic, synthetic product, O.T.L, N.O.I.B.N (trademark Haleon™) **sea transport:** trademark Haleon™ **air transport:** plastic, synthetic product, O.T.L (trademark Haleon™)
14.3. Transport hazard class(es)	Not considered as hazard.
14.4. Packing group	Not applicable.
14.5. Environmental hazards	Not applicable.
14.6. Special precautions for user	Not applicable.

Data of this section is for reference only. For correct classification of your batch of goods for transportation see correspondent regulations.

SECTION 15. Regulatory information

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

15.1.1 European legislation

Authorization or restriction in use	Not known.

15.2. Chemical safety assessment	No data.

SECTION 16. Other information

16.1. Classification of the substance or mixture	Regulation (EC) No 1272/2008 (CLP/GHP): Not classified as hazard for supply / use.
16.1.1. Label elements	According to Regulation (EC) No 1272/2008 (CLP/GHP)
Product name	HALEON™ Ftoroplast-40 Ethylene-tetrafluoroethylene polymer
Hazard pictogram	No
Signal word	No
Hazard statement	No
Precautionary statement	No

The following section contains revised or new data: 1-16.

ABBREVIATIONS

LTEL	long term exposure limit
STEL	short-term exposure limit
STOT	specific target organ toxicity
MAC	maximum allowable concentration
TLV	threshold limit value
REL	recommended exposure level
PEL	permissible exposure level
TLV/TWA	threshold limit value / time-weighted average
NIOSH	Occupational Safety and Health Administration
Additional information	No

Information contained in the present Safety Data Sheet or provided to the Customer in other way is considered reliable and submitted in good faith, but the Consumer is responsible for product suitability for its purposes.
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The Consumer is obliged to make assessment and use of this product in compliance with safety measures and requirements of the correspondent laws and regulations.
The purchaser of the product for sale to the third party – user is obliged to undertake to provide any person using this product with the information contained in the present Safety Data Sheet.
Employer is liable to inform the employees and other persons about hazards described in the present Safety Data Sheet, and safety measures they should take.