

# SAFETY DATA SHEET

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

### 1.1. Product identifier

Trade name or designation of the mixture GLASSBEND  
Registration number -  
Synonyms None.  
Issue date 31-July-2019  
Version number 01

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

Identified uses 3D printer filament  
Uses advised against None known.

### 1.3. Details of the supplier of the safety data sheet

#### Supplier

Company name MCPP Netherlands BV  
Address Grasbeemd 19, 5705DE Helmond, The Netherlands  
Telephone +31 (0)492 210 210 (Office hours Mo. - Fr. 8:30 - 17:00)  
Contact person Product Compliance  
e-mail product.compliance@mcpp-europe.com

1.4. Emergency telephone number +31 (0)30 274 8888, only for the doctor

National Poison Information Center Utrecht, The Netherlands

## SECTION 2: Hazards identification

### 2.1. Classification of the substance or mixture

The mixture has been assessed and/or tested for its physical, health and environmental hazards and the following classification applies.

#### Classification according to Regulation (EC) No 1272/2008 as amended

This mixture does not meet the criteria for classification according to Regulation (EC) 1272/2008 as amended.

Hazard summary Not available.

### 2.2. Label elements

#### Label according to Regulation (EC) No. 1272/2008 as amended

Hazard pictograms None.  
Signal word None.  
Hazard statements The mixture does not meet the criteria for classification.

#### Precautionary statements

Prevention Not available.  
Response Not available.  
Storage Not available.  
Disposal Not available.

Supplemental label information None.

2.3. Other hazards Not a PBT or vPvB substance or mixture.

## SECTION 3: Composition/information on ingredients

### 3.2. Mixtures

## General information

Chemical name	%	CAS-No. / EC No.	REACH Registration No.	Index No.	Notes
Styrene butadiene copolymer	90 - 100	9003-55-8	-	-	
<b>Classification:</b>	-				

Other components below reportable levels < 0,1

**Composition comments** The full text for all H-statements is displayed in section 16.

## SECTION 4: First aid measures

**General information** Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves.

### 4.1. Description of first aid measures

**Inhalation** Not likely, due to the form of the product. If exposed to excessive levels of dusts or fumes, remove to fresh air and get medical attention if cough or other symptoms develop.

**Skin contact** If burned by contact with hot material, cool molten material adhering to skin as quickly as possible with water, and see a physician for removal of adhering material and treatment of burn. Do not peel polymer from the skin.

**Eye contact** Not likely, due to the form of the product. If hot product contacts eye, flush with water for at least 15 minutes and seek medical attention immediately.

**Ingestion** Not likely, due to the form of the product.

**4.2. Most important symptoms and effects, both acute and delayed** Exposure may cause temporary irritation, redness, or discomfort.

**4.3. Indication of any immediate medical attention and special treatment needed** Treat symptomatically.

## SECTION 5: Firefighting measures

**General fire hazards** No unusual fire or explosion hazards noted.

### 5.1. Extinguishing media

**Suitable extinguishing media** Water fog. Foam. Dry chemical powder. Carbon dioxide (CO<sub>2</sub>).

**Unsuitable extinguishing media** Do not use water jet as an extinguisher, as this will spread the fire.

**5.2. Special hazards arising from the substance or mixture** During fire, gases hazardous to health may be formed.

### 5.3. Advice for firefighters

**Special protective equipment for firefighters** Self-contained breathing apparatus and full protective clothing must be worn in case of fire.

**Special fire fighting procedures** Move containers from fire area if you can do so without risk.

**Specific methods** Use standard firefighting procedures and consider the hazards of other involved materials.

## SECTION 6: Accidental release measures

### 6.1. Personal precautions, protective equipment and emergency procedures

**For non-emergency personnel** Keep unnecessary personnel away. For personal protection, see section 8 of the SDS.

**For emergency responders** Keep unnecessary personnel away. Use personal protection recommended in Section 8 of the SDS.

**6.2. Environmental precautions** Avoid discharge into drains, water courses or onto the ground.

**6.3. Methods and material for containment and cleaning up** Sweep up or vacuum up spillage and collect in suitable container for disposal. For waste disposal, see section 13 of the SDS.

**6.4. Reference to other sections** For personal protection, see section 8 of the SDS. For waste disposal, see section 13 of the SDS.

## SECTION 7: Handling and storage

**7.1. Precautions for safe handling** Observe good industrial hygiene practices.

**7.2. Conditions for safe storage, including any incompatibilities** Store in tightly closed container. Store away from incompatible materials (see Section 10 of the SDS).

**7.3. Specific end use(s)** Not available.

## SECTION 8: Exposure controls/personal protection

### 8.1. Control parameters

#### Occupational exposure limits

##### Austria. MAK List, OEL Ordinance (GwV), BGBl. II, no. 184/2001

Components	Type	Value
Styrene (CAS 100-42-5)	MAK	85 mg/m <sup>3</sup>
		20 ppm
	STEL	340 mg/m <sup>3</sup>
		80 ppm
<b>Monomer</b>	<b>Type</b>	<b>Value</b>
Ethylbenzene (CAS 100-41-4)	Ceiling	880 mg/m <sup>3</sup>
	MAK	200 ppm
		440 mg/m <sup>3</sup>
		100 ppm

##### Belgium. Exposure Limit Values.

Components	Type	Value
Styrene (CAS 100-42-5)	STEL	216 mg/m <sup>3</sup>
		50 ppm
	TWA	108 mg/m <sup>3</sup>
		25 ppm
<b>Monomer</b>	<b>Type</b>	<b>Value</b>
1,3-Butadiene (CAS 106-99-0)	TWA	4,5 mg/m <sup>3</sup>
		2 ppm
Ethylbenzene (CAS 100-41-4)	STEL	551 mg/m <sup>3</sup>
		125 ppm
	TWA	87 mg/m <sup>3</sup>
		20 ppm

##### Bulgaria. OELs. Regulation No 13 on protection of workers against risks of exposure to chemical agents at work

Components	Type	Value
Styrene (CAS 100-42-5)	STEL	215 mg/m <sup>3</sup>
	TWA	85 mg/m <sup>3</sup>
<b>Monomer</b>	<b>Type</b>	<b>Value</b>
1,3-Butadiene (CAS 106-99-0)	STEL	100 mg/m <sup>3</sup>
	TWA	50 mg/m <sup>3</sup>
Ethylbenzene (CAS 100-41-4)	STEL	545 mg/m <sup>3</sup>
	TWA	435 mg/m <sup>3</sup>

##### Croatia. Dangerous Substance Exposure Limit Values in the Workplace (ELVs), Annexes 1 and 2, Narodne Novine, 13/09

Components	Type	Value
Styrene (CAS 100-42-5)	MAC	430 mg/m <sup>3</sup>
		100 ppm
	STEL	1080 mg/m <sup>3</sup>
		250 ppm
<b>Monomer</b>	<b>Type</b>	<b>Value</b>
1,3-Butadiene (CAS 106-99-0)	MAC	2,2 mg/m <sup>3</sup>
		1 ppm
Ethylbenzene (CAS 100-41-4)	MAC	442 mg/m <sup>3</sup>

**Croatia. Dangerous Substance Exposure Limit Values in the Workplace (ELVs), Annexes 1 and 2, Narodne Novine, 13/09**

Monomer	Type	Value
		100 ppm
	STEL	884 mg/m3
		200 ppm

**Cyprus. OELs. Control of factory atmosphere and dangerous substances in factories regulation, PI 311/73, as amended.**

Components	Type	Value
Styrene (CAS 100-42-5)	TWA	210 mg/m3
		50 ppm

**Czech Republic. OELs. Government Decree 361**

Components	Type	Value
Styrene (CAS 100-42-5)	Ceiling	400 mg/m3
	TWA	100 mg/m3

Monomer	Type	Value
1,3-Butadiene (CAS 106-99-0)	Ceiling	20 mg/m3
	TWA	10 mg/m3
Ethylbenzene (CAS 100-41-4)	Ceiling	500 mg/m3
	TWA	200 mg/m3

**Denmark. Exposure Limit Values**

Components	Type	Value
Styrene (CAS 100-42-5)	Ceiling	105 mg/m3
		25 ppm

Monomer	Type	Value
1,3-Butadiene (CAS 106-99-0)	TLV	22 mg/m3
		10 ppm
Ethylbenzene (CAS 100-41-4)	TLV	217 mg/m3
		50 ppm

**Estonia. OELs. Occupational Exposure Limits of Hazardous Substances. (Annex of Regulation No. 293 of 18 September 2001)**

Components	Type	Value
Styrene (CAS 100-42-5)	STEL	200 mg/m3
		50 ppm
	TWA	90 mg/m3
		20 ppm

Monomer	Type	Value
1,3-Butadiene (CAS 106-99-0)	STEL	10 mg/m3
		5 ppm
	TWA	1 mg/m3
		0,5 ppm
Ethylbenzene (CAS 100-41-4)	STEL	884 mg/m3
		200 ppm
	TWA	442 mg/m3
		100 ppm

**Finland. Workplace Exposure Limits**

Components	Type	Value
Styrene (CAS 100-42-5)	STEL	430 mg/m3
		100 ppm

**Finland. Workplace Exposure Limits**

Components	Type	Value
	TWA	86 mg/m3
		20 ppm
Monomer	Type	Value
1,3-Butadiene (CAS 106-99-0)	TWA	2,2 mg/m3
		1 ppm
Ethylbenzene (CAS 100-41-4)	STEL	880 mg/m3
		200 ppm
	TWA	220 mg/m3
		50 ppm

**France. Threshold Limit Values (VLEP) for Occupational Exposure to Chemicals in France, INRS ED 984**

Components	Type	Value
Styrene (CAS 100-42-5)	VLE	200 mg/m3
<b>Regulatory status:</b> Indicative limit (VL)		46,6 ppm
<b>Regulatory status:</b> Indicative limit (VL)		
	VME	100 mg/m3
<b>Regulatory status:</b> Indicative limit (VL)		23,3 ppm
<b>Regulatory status:</b> Indicative limit (VL)		
Monomer	Type	Value
Ethylbenzene (CAS 100-41-4)	VLE	442 mg/m3
<b>Regulatory status:</b> Regulatory binding (VRC)		100 ppm
<b>Regulatory status:</b> Regulatory binding (VRC)		
	VME	88,4 mg/m3
<b>Regulatory status:</b> Regulatory binding (VRC)		20 ppm
<b>Regulatory status:</b> Regulatory binding (VRC)		

**Germany. DFG MAK List (advisory OELs). Commission for the Investigation of Health Hazards of Chemical Compounds in the Work Area (DFG)**

Components	Type	Value
Styrene (CAS 100-42-5)	TWA	86 mg/m3
		20 ppm
Monomer	Type	Value
Ethylbenzene (CAS 100-41-4)	TWA	88 mg/m3
		20 ppm

**Germany. TRGS 900, Limit Values in the Ambient Air at the Workplace**

Components	Type	Value
Styrene (CAS 100-42-5)	AGW	86 mg/m3
		20 ppm
Monomer	Type	Value
Ethylbenzene (CAS 100-41-4)	AGW	88 mg/m3
		20 ppm

**Greece. OELs (Decree No. 90/1999, as amended)**

Components	Type	Value
Styrene (CAS 100-42-5)	STEL	1050 mg/m3

**Greece. OELs (Decree No. 90/1999, as amended)**

<b>Components</b>	<b>Type</b>	<b>Value</b>
		250 ppm
	TWA	425 mg/m3
		100 ppm
<b>Monomer</b>	<b>Type</b>	<b>Value</b>
1,3-Butadiene (CAS 106-99-0)	TWA	22 mg/m3
		10 ppm
Ethylbenzene (CAS 100-41-4)	STEL	545 mg/m3
		125 ppm
	TWA	435 mg/m3
		100 ppm

**Hungary. OELs. Joint Decree on Chemical Safety of Workplaces**

<b>Components</b>	<b>Type</b>	<b>Value</b>
Styrene (CAS 100-42-5)	STEL	50 mg/m3
	TWA	50 mg/m3
<b>Monomer</b>	<b>Type</b>	<b>Value</b>
1,3-Butadiene (CAS 106-99-0)	Ceiling	1 mg/m3
Ethylbenzene (CAS 100-41-4)	STEL	884 mg/m3
	TWA	442 mg/m3

**Iceland. OELs. Regulation 154/1999 on occupational exposure limits**

<b>Components</b>	<b>Type</b>	<b>Value</b>
Styrene (CAS 100-42-5)	STEL	105 mg/m3
		25 ppm
<b>Monomer</b>	<b>Type</b>	<b>Value</b>
1,3-Butadiene (CAS 106-99-0)	TWA	20 mg/m3
		10 ppm
Ethylbenzene (CAS 100-41-4)	STEL	884 mg/m3
		200 ppm
	TWA	200 mg/m3
		50 ppm

**Ireland. Occupational Exposure Limits**

<b>Components</b>	<b>Type</b>	<b>Value</b>
Styrene (CAS 100-42-5)	STEL	170 mg/m3
		40 ppm
	TWA	85 mg/m3
		20 ppm
<b>Monomer</b>	<b>Type</b>	<b>Value</b>
1,3-Butadiene (CAS 106-99-0)	TWA	2,2 mg/m3
		1 ppm
Ethylbenzene (CAS 100-41-4)	STEL	884 mg/m3
		200 ppm
	TWA	442 mg/m3
		100 ppm

**Italy. Occupational Exposure Limits Components**

	Type	Value
Styrene (CAS 100-42-5)	STEL	40 ppm
	TWA	20 ppm
<b>Monomer</b>	<b>Type</b>	<b>Value</b>
1,3-Butadiene (CAS 106-99-0)	TWA	2 ppm
	STEL	884 mg/m3
Ethylbenzene (CAS 100-41-4)		200 ppm
	TWA	442 mg/m3
		100 ppm

**Latvia. OELs. Occupational exposure limit values of chemical substances in work environment Components**

	Type	Value
Styrene (CAS 100-42-5)	STEL	30 mg/m3
	TWA	10 mg/m3
<b>Monomer</b>	<b>Type</b>	<b>Value</b>
1,3-Butadiene (CAS 106-99-0)	TWA	100 mg/m3
	STEL	884 mg/m3
Ethylbenzene (CAS 100-41-4)		200 ppm
	TWA	442 mg/m3
		100 ppm

**Lithuania. OELs. Limit Values for Chemical Substances, General Requirements Components**

	Type	Value
Styrene (CAS 100-42-5)	STEL	200 mg/m3
		50 ppm
	TWA	90 mg/m3
		20 ppm
<b>Monomer</b>	<b>Type</b>	<b>Value</b>
1,3-Butadiene (CAS 106-99-0)	STEL	10 mg/m3
		5 ppm
	TWA	1 mg/m3
Ethylbenzene (CAS 100-41-4)	STEL	884 mg/m3
		200 ppm
	TWA	442 mg/m3
		100 ppm

**Luxembourg. Binding Occupational exposure limit values (Annex I), Memorial A Monomer**

	Type	Value
Ethylbenzene (CAS 100-41-4)	STEL	884 mg/m3
		200 ppm
	TWA	442 mg/m3
		100 ppm

**Malta. OELs. Occupational Exposure Limit Values (L.N. 227. of Occupational Health and Safety Authority Act (CAP. 424), Schedules I and V)**

Monomer	Type	Value
Ethylbenzene (CAS 100-41-4)	STEL	884 mg/m3
		200 ppm

**Malta. OELs. Occupational Exposure Limit Values (L.N. 227. of Occupational Health and Safety Authority Act (CAP. 424), Schedules I and V)**

<b>Monomer</b>	<b>Type</b>	<b>Value</b>
	TWA	442 mg/m3 100 ppm

**Netherlands. OELs (binding)**

<b>Monomer</b>	<b>Type</b>	<b>Value</b>
1,3-Butadiene (CAS 106-99-0)	TWA	2 mg/m3
Ethylbenzene (CAS 100-41-4)	STEL	430 mg/m3
	TWA	215 mg/m3

**Norway. Administrative Norms for Contaminants in the Workplace**

<b>Components</b>	<b>Type</b>	<b>Value</b>
Styrene (CAS 100-42-5)	TLV	105 mg/m3 25 ppm

<b>Monomer</b>	<b>Type</b>	<b>Value</b>
1,3-Butadiene (CAS 106-99-0)	TLV	2,2 mg/m3 1 ppm
Ethylbenzene (CAS 100-41-4)	TLV	20 mg/m3 5 ppm

**Ordinance of the Minister of Labour and Social Policy on 6 June 2014 on the maximum permissible concentrations and intensities of harmful health factors in the work environment, Journal of Laws 2014, item 817**

<b>Components</b>	<b>Type</b>	<b>Value</b>
Styrene (CAS 100-42-5)	STEL	100 mg/m3
	TWA	50 mg/m3

<b>Monomer</b>	<b>Type</b>	<b>Value</b>
1,3-Butadiene (CAS 106-99-0)	TWA	4,4 mg/m3
Ethylbenzene (CAS 100-41-4)	STEL	400 mg/m3
	TWA	200 mg/m3

**Portugal. OELs. Decree-Law n. 290/2001 (Journal of the Republic - 1 Series A, n.266)**

<b>Monomer</b>	<b>Type</b>	<b>Value</b>
Ethylbenzene (CAS 100-41-4)	STEL	884 mg/m3 200 ppm
	TWA	442 mg/m3 100 ppm

**Portugal. VLEs. Norm on occupational exposure to chemical agents (NP 1796)**

<b>Components</b>	<b>Type</b>	<b>Value</b>
Styrene (CAS 100-42-5)	STEL	40 ppm
	TWA	20 ppm

<b>Monomer</b>	<b>Type</b>	<b>Value</b>
1,3-Butadiene (CAS 106-99-0)	TWA	2 ppm
Ethylbenzene (CAS 100-41-4)	TWA	20 ppm

**Romania. OELs. Protection of workers from exposure to chemical agents at the workplace**

<b>Components</b>	<b>Type</b>	<b>Value</b>
Styrene (CAS 100-42-5)	STEL	150 mg/m3 35 ppm



**Romania. OELs. Protection of workers from exposure to chemical agents at the workplace**

Components	Type	Value
	TWA	50 mg/m <sup>3</sup> 12 ppm
<b>Monomer</b>	<b>Type</b>	<b>Value</b>
1,3-Butadiene (CAS 106-99-0)	TWA	22 mg/m <sup>3</sup> 10 ppm
Ethylbenzene (CAS 100-41-4)	STEL	884 mg/m <sup>3</sup> 200 ppm
	TWA	442 mg/m <sup>3</sup> 100 ppm

**Slovakia. OELs for carcinogens and mutagens. Regulation No. 46/2002 on carcinogenic and mutagenic substances**

Monomer	Type	Value
1,3-Butadiene (CAS 106-99-0)	TWA	11 mg/m <sup>3</sup> 5 ppm

**Slovakia. OELs. Regulation No. 300/2007 concerning protection of health in work with chemical agents**

Components	Type	Value
Styrene (CAS 100-42-5)	STEL	200 mg/m <sup>3</sup> 50 ppm
	TWA	90 mg/m <sup>3</sup> 20 ppm
<b>Monomer</b>	<b>Type</b>	<b>Value</b>
Ethylbenzene (CAS 100-41-4)	STEL	884 mg/m <sup>3</sup> 200 ppm
	TWA	442 mg/m <sup>3</sup> 100 ppm

**Slovenia. CMR. Protection of workers from exposure to carcinogen and mutagen agents (ULRS 101/2005, as amended)**

Monomer	Type	Value
1,3-Butadiene (CAS 106-99-0)	TWA	11 mg/m <sup>3</sup> 15 ppm

**Slovenia. OELs. Regulations concerning protection of workers against risks due to exposure to chemicals while working (Official Gazette of the Republic of Slovenia)**

Components	Type	Value
Styrene (CAS 100-42-5)	TWA	86 mg/m <sup>3</sup> 20 ppm
<b>Monomer</b>	<b>Type</b>	<b>Value</b>
Ethylbenzene (CAS 100-41-4)	TWA	442 mg/m <sup>3</sup> 100 ppm

**Spain. Carcinogens and Mutagens with Limit Values (Table 2)**

Monomer	Type	Value
1,3-Butadiene (CAS 106-99-0)	TWA	4,5 mg/m <sup>3</sup> 2 ppm

**Spain. Occupational Exposure Limits**

Components	Type	Value
Styrene (CAS 100-42-5)	STEL	172 mg/m <sup>3</sup> 40 ppm

**Spain. Occupational Exposure Limits Components**

Components	Type	Value
	TWA	86 mg/m3 20 ppm
<b>Monomer</b>	<b>Type</b>	<b>Value</b>
1,3-Butadiene (CAS 106-99-0)	TWA	4,5 mg/m3 2 ppm
Ethylbenzene (CAS 100-41-4)	STEL	884 mg/m3 200 ppm
	TWA	441 mg/m3 100 ppm

**Sweden. OELs. Work Environment Authority (AV), Occupational Exposure Limit Values (AFS 2015:7) Components**

Components	Type	Value
Styrene (CAS 100-42-5)	STEL	86 mg/m3 20 ppm
	TWA	43 mg/m3 10 ppm
<b>Monomer</b>	<b>Type</b>	<b>Value</b>
1,3-Butadiene (CAS 106-99-0)	Ceiling	10 mg/m3 5 ppm
	TWA	1 mg/m3 0,5 ppm
Ethylbenzene (CAS 100-41-4)	Ceiling	884 mg/m3 200 ppm
	TWA	220 mg/m3 50 ppm

**Switzerland. SUVA Grenzwerte am Arbeitsplatz Components**

Components	Type	Value
Styrene (CAS 100-42-5)	STEL	170 mg/m3 40 ppm
	TWA	85 mg/m3 20 ppm
<b>Monomer</b>	<b>Type</b>	<b>Value</b>
1,3-Butadiene (CAS 106-99-0)	TWA	11 mg/m3 5 ppm
Ethylbenzene (CAS 100-41-4)	STEL	220 mg/m3 50 ppm
	TWA	220 mg/m3 50 ppm

**UK. EH40 Workplace Exposure Limits (WELs) Components**

Components	Type	Value
Styrene (CAS 100-42-5)	STEL	1080 mg/m3 250 ppm
	TWA	430 mg/m3 100 ppm

**UK. EH40 Workplace Exposure Limits (WELs)**

Monomer	Type	Value
1,3-Butadiene (CAS 106-99-0)	TWA	22 mg/m <sup>3</sup>
		10 ppm
Ethylbenzene (CAS 100-41-4)	STEL	552 mg/m <sup>3</sup>
		125 ppm
	TWA	441 mg/m <sup>3</sup> 100 ppm

**EU. Indicative Exposure Limit Values in Directives 91/322/EEC, 2000/39/EC, 2006/15/EC, 2009/161/EU**

Monomer	Type	Value
Ethylbenzene (CAS 100-41-4)	STEL	884 mg/m <sup>3</sup>
		200 ppm
	TWA	442 mg/m <sup>3</sup> 100 ppm

**EU. OELs, Directive 2004/37/EC on carcinogen and mutagens from Annex III, Part A**

Monomer	Type	Value
1,3-Butadiene (CAS 106-99-0)	TWA	2,2 mg/m <sup>3</sup>
		1 ppm

**Biological limit values****Croatia. BLV. Dangerous Substance Exposure Limit Values at Workplace, Annexes 4 (as amended)**

Components	Value	Determinant	Specimen	Sampling Time
Styrene (CAS 100-42-5)	20 µg/l	Styrene	Blood	*
	1 g/g	Mandelic acid	Creatinine in urine	*
	600 mg/g	Mandelic acid plus phenyl glyoxylic acid	Creatinine in urine	*
	240 mg/g	Phenylglyoxylic acid	Creatinine in urine	*
	0,18 mol/mol	Phenylglyoxylic acid	Creatinine in urine	*
	0,19 µmol/l	Styrene	Blood	*
Monomer	Value	Determinant	Specimen	Sampling Time
Ethylbenzene (CAS 100-41-4)	1,5 g/g	Mandelic acid	Creatinine in urine	*
	1,5 mg/l	Ethylbenzene	Blood	*
	1,12 mol/mol	Mandelic acid	Creatinine in urine	*
	14,1 µmol/l	Ethylbenzene	Blood	*

\* - For sampling details, please see the source document.

**Czech Republic. Limit Values for Indicators of Biological Exposure Tests in Urine and Blood, Annex 2, Tables 1 and 2, Government Decree 432/2003 Sb.**

Components	Value	Determinant	Specimen	Sampling Time
Styrene (CAS 100-42-5)	300 µmol/mmol	Mandelic acid	Creatinine in urine	*
	400 mg/g	Mandelic acid	Creatinine in urine	*
Monomer	Value	Determinant	Specimen	Sampling Time
Ethylbenzene (CAS 100-41-4)	1100 µmol/mmol	Mandelic acid	Creatinine in urine	*
	1500 mg/g	Mandelic acid	Creatinine in urine	*

\* - For sampling details, please see the source document.

**Finland. HTP-arvot, App 2., Biological Limit Values, (BRA/BGV) , Social Affairs and Ministry of Health**

Components	Value	Determinant	Specimen	Sampling Time
Styrene (CAS 100-42-5)	1,2 mmol/l	MAPGA (mandelic acid plus phenylglyoxylic acid)	Urine	*
Monomer	Value	Determinant	Specimen	Sampling Time

Ethylbenzene (CAS 100-41-4)	5,2 mmol/l	Mandelic acid	Urine	*
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\* - For sampling details, please see the source document.

**France. Biological indicators of exposure (IBE) (National Institute for Research and Security (INRS, ND 2065))**

Components	Value	Determinant	Specimen	Sampling Time
Styrene (CAS 100-42-5)	240 mg/g	Acide phénylglyoxyliq ue	Creatinine in urine	*
	100 mg/g	Acide phénylglyoxyliq ue	Creatinine in urine	*
	0,55 mg/l	Styréne	Venous blood	*
	0,02 mg/l	Styréne	Venous blood	*
Monomer	Value	Determinant	Specimen	Sampling Time

Ethylbenzene (CAS 100-41-4)	1500 mg/g	Acide mandélique	Creatinine in urine	*
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\* - For sampling details, please see the source document.

**Germany. TRGS 903, BAT List (Biological Limit Values)**

Components	Value	Determinant	Specimen	Sampling Time
Styrene (CAS 100-42-5)	600 mg/g	Mandelsäure plus Phenylglyoxyls äure	Creatinine in urine	*
Monomer	Value	Determinant	Specimen	Sampling Time
Ethylbenzene (CAS 100-41-4)	250 mg/g	Mandelsäure plus Phenylglyoxyls äure	Creatinine in urine	*

\* - For sampling details, please see the source document.

**Hungary. Chemical Safety at Workplace Ordinance Joint Decree No. 25/2000 (Annex 2): Permissible limit values of biological exposure (effect) indices**

Components	Value	Determinant	Specimen	Sampling Time
Styrene (CAS 100-42-5)	1000 mg/g	mandelic acid	Creatinine in urine	*
	740 µmol/mmol	mandelic acid	Creatinine in urine	*
Monomer	Value	Determinant	Specimen	Sampling Time
Ethylbenzene (CAS 100-41-4)	1500 mg/g	mandelic acid	Creatinine in urine	*
	1110 µmol/mmol	mandelic acid	Creatinine in urine	*

\* - For sampling details, please see the source document.

**Slovakia. BLVs (Biological Limit Value). Regulation no. 355/2006 concerning protection of workers exposed to chemical agents, Annex 2**

Components	Value	Determinant	Specimen	Sampling Time
Styrene (CAS 100-42-5)	600 mg/g	Mandelic acid plus phenylglyoxylic acid	Creatinine in urine	*

**Slovakia. BLVs (Biological Limit Value). Regulation no. 355/2006 concerning protection of workers exposed to chemical agents, Annex 2**

Components	Value	Determinant	Specimen	Sampling Time
	901 mg/l	Mandelic acid plus phenylglyoxylic acid	Urine	*
Monomer	Value	Determinant	Specimen	Sampling Time
Ethylbenzene (CAS 100-41-4)	1067 mg/g	Sum of mandelic acid and phenylglyoxylic acid	Creatinine in urine	*
	12 mg/l	2-ethylphenol	Urine	*

\* - For sampling details, please see the source document.

**Spain. Biological Limit Values (VLBs), Occupational Exposure Limits for Chemical Agents, Table 4**

Components	Value	Determinant	Specimen	Sampling Time
Styrene (CAS 100-42-5)	400 mg/g	Ácido mandélico más ácido fenilglioxílico	Creatinine in urine	*
	0,2 mg/l	Estireno	Venous blood	*
Monomer	Value	Determinant	Specimen	Sampling Time
1,3-Butadiene (CAS 106-99-0)	2,5 mg/l	Acido 1,2-Dihidroxi butilmercaptúrico	Urine	*
	2,5 pmol/g	Mezcla de 1-N y 2-N-(hidroxibutenil) valina aductos de hemoglobina (Hb)	Hemoglobin in blood	*
Ethylbenzene (CAS 100-41-4)	700 mg/g	Suma del ácido mandélico y el ácido fenilglioxílico	Creatinine in urine	*

\* - For sampling details, please see the source document.

**Switzerland. BAT-Werte (Biological Limit Values in the Workplace as per SUVA)**

Components	Value	Determinant	Specimen	Sampling Time
Styrene (CAS 100-42-5)	600 mg/g	Mandelsäure plus Phenyl-glyoxylsäure	Creatinine in urine	*
Monomer	Value	Determinant	Specimen	Sampling Time
Ethylbenzene (CAS 100-41-4)	600 mg/g	Mandelsäure plus Phenylglyoxylsäure	Creatinine in urine	*

\* - For sampling details, please see the source document.

**Recommended monitoring procedures** Follow standard monitoring procedures.

**Derived no effect levels (DNELs)** Not available.

**Predicted no effect concentrations (PNECs)** Not available.

**8.2. Exposure controls**

**Appropriate engineering controls** Good general ventilation should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level.

## Individual protection measures, such as personal protective equipment

<b>General information</b>	Personal protection equipment should be chosen according to the CEN standards and in discussion with the supplier of the personal protective equipment.
<b>Eye/face protection</b>	Wear safety glasses with side shields (or goggles).
<b>Skin protection</b>	
- Hand protection	Wear appropriate chemical resistant gloves.
- Other	Wear suitable protective clothing.
<b>Respiratory protection</b>	In case of insufficient ventilation, wear suitable respiratory equipment.
<b>Thermal hazards</b>	Wear appropriate thermal protective clothing, when necessary.
<b>Hygiene measures</b>	Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.
<b>Environmental exposure controls</b>	Good general ventilation should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level.

## SECTION 9: Physical and chemical properties

### 9.1. Information on basic physical and chemical properties

#### Appearance

<b>Physical state</b>	Solid.
<b>Form</b>	filament
<b>Colour</b>	Color depends on product specification
<b>Odour</b>	Slight.
<b>Odour threshold</b>	Not available.
<b>pH</b>	Not available.
<b>Melting point/freezing point</b>	170 - 230 °C (338 - 446 °F)
<b>Initial boiling point and boiling range</b>	Not available.
<b>Flash point</b>	Not available.
<b>Evaporation rate</b>	Not available.
<b>Flammability (solid, gas)</b>	Not available.
<b>Upper/lower flammability or explosive limits</b>	
<b>Flammability limit - lower (%)</b>	Not available.
<b>Flammability limit - upper (%)</b>	Not available.
<b>Vapour pressure</b>	Not available.
<b>Vapour density</b>	Not available.
<b>Relative density</b>	Not available.
<b>Solubility(ies)</b>	
<b>Solubility (water)</b>	Not available.
<b>Partition coefficient (n-octanol/water)</b>	Not available.
<b>Auto-ignition temperature</b>	Not available.
<b>Decomposition temperature</b>	Not available.
<b>Viscosity</b>	Not available.
<b>Explosive properties</b>	Not explosive.
<b>Oxidising properties</b>	Not oxidising.
<b>9.2. Other information</b>	
<b>Density</b>	0,99 - 1,02 g/cm <sup>3</sup>

## SECTION 10: Stability and reactivity

<b>10.1. Reactivity</b>	The product is stable and non-reactive under normal conditions of use, storage and transport.
<b>10.2. Chemical stability</b>	Material is stable under normal conditions.
<b>10.3. Possibility of hazardous reactions</b>	No dangerous reaction known under conditions of normal use.

<b>10.4. Conditions to avoid</b>	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. Contact with incompatible materials.
<b>10.5. Incompatible materials</b>	Strong oxidising agents.
<b>10.6. Hazardous decomposition products</b>	No hazardous decomposition products are known.

## SECTION 11: Toxicological information

**General information** Occupational exposure to the substance or mixture may cause adverse effects.

### Information on likely routes of exposure

<b>Inhalation</b>	Based on available data, the classification criteria are not met.
<b>Skin contact</b>	Based on available data, the classification criteria are not met.
<b>Eye contact</b>	Based on available data, the classification criteria are not met.
<b>Ingestion</b>	May cause discomfort if swallowed. However, ingestion is not likely to be a primary route of occupational exposure.

**Symptoms** Exposure may cause temporary irritation, redness, or discomfort.

### 11.1. Information on toxicological effects

<b>Acute toxicity</b>	Not known.
<b>Skin corrosion/irritation</b>	Based on available data, the classification criteria are not met.
<b>Serious eye damage/eye irritation</b>	Based on available data, the classification criteria are not met.
<b>Respiratory sensitisation</b>	Based on available data, the classification criteria are not met.
<b>Skin sensitisation</b>	Based on available data, the classification criteria are not met.
<b>Germ cell mutagenicity</b>	Based on available data, the classification criteria are not met.
<b>Carcinogenicity</b>	Based on available data, the classification criteria are not met.
<b>Hungary. 26/2000 EüM Ordinance on protection against and preventing risk relating to exposure to carcinogens at work (as amended)</b>	
Not listed.	

**Reproductive toxicity** Based on available data, the classification criteria are not met.

**Specific target organ toxicity - single exposure** Based on available data, the classification criteria are not met.

**Specific target organ toxicity - repeated exposure** Based on available data, the classification criteria are not met.

**Aspiration hazard** Based on available data, the classification criteria are not met.

**Mixture versus substance information** No information available.

**Other information** This product has no known adverse effect on human health.

## SECTION 12: Ecological information

**12.1. Toxicity** The product is not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

**12.2. Persistence and degradability** No data is available on the degradability of any ingredients in the mixture.

### 12.3. Bioaccumulative potential

**Bioconcentration factor (BCF)** Not available.

**12.4. Mobility in soil** No data available.

**12.5. Results of PBT and vPvB assessment** Not a PBT or vPvB substance or mixture.

**12.6. Other adverse effects** No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation potential, endocrine disruption, global warming potential) are expected from this component.

## SECTION 13: Disposal considerations

### 13.1. Waste treatment methods

**Residual waste** Dispose of in accordance with local regulations.

**Contaminated packaging** Empty containers should be taken to an approved waste handling site for recycling or disposal.

**EU waste code** The Waste code should be assigned in discussion between the user, the producer and the waste disposal company.

**Disposal methods/information** Collect and reclaim or dispose in sealed containers at licensed waste disposal site.

**Special precautions** Dispose in accordance with all applicable regulations.

## SECTION 14: Transport information

### ADR

14.1. - 14.6.: Not regulated as dangerous goods.

### RID

14.1. - 14.6.: Not regulated as dangerous goods.

### ADN

14.1. - 14.6.: Not regulated as dangerous goods.

### IATA

14.1. - 14.6.: Not regulated as dangerous goods.

### IMDG

14.1. - 14.6.: Not regulated as dangerous goods.

**14.7. Transport in bulk** Not applicable.  
according to Annex II of  
**MARPOL 73/78 and the IBC**  
**Code**

## SECTION 15: Regulatory information

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

#### EU regulations

**Regulation (EC) No. 1005/2009 on substances that deplete the ozone layer, Annex I and II, as amended**

Not listed.

**Regulation (EC) No. 850/2004 On persistent organic pollutants, Annex I as amended**

Not listed.

**Regulation (EU) No. 649/2012 concerning the export and import of dangerous chemicals, Annex I, Part 1 as amended**

Not listed.

**Regulation (EU) No. 649/2012 concerning the export and import of dangerous chemicals, Annex I, Part 2 as amended**

Not listed.

**Regulation (EU) No. 649/2012 concerning the export and import of dangerous chemicals, Annex I, Part 3 as amended**

Not listed.

**Regulation (EU) No. 649/2012 concerning the export and import of dangerous chemicals, Annex V as amended**

Not listed.

**Regulation (EC) No. 166/2006 Annex II Pollutant Release and Transfer Registry, as amended**

Not listed.

**Regulation (EC) No. 1907/2006, REACH Article 59(10) Candidate List as currently published by ECHA**

Not listed.

#### Authorisations

**Regulation (EC) No. 1907/2006, REACH Annex XIV Substances subject to authorization, as amended**

Not listed.

#### Restrictions on use

**Regulation (EC) No. 1907/2006, REACH Annex XVII Substances subject to restriction on marketing and use as amended**

Not listed.

**Directive 2004/37/EC: on the protection of workers from the risks related to exposure to carcinogens and mutagens at work, as amended.**

Not listed.

#### Other EU regulations

**Directive 2012/18/EU on major accident hazards involving dangerous substances, as amended**

Not listed.

#### Other regulations

The product is classified and labelled in accordance with Regulation (EC) 1272/2008 (CLP Regulation) as amended. This Safety Data Sheet complies with the requirements of Regulation (EC) No 1907/2006, as amended.

#### National regulations

Follow national regulation for work with chemical agents in accordance with Directive 98/24/EC, as amended.

#### 15.2. Chemical safety assessment

No Chemical Safety Assessment has been carried out.

## SECTION 16: Other information

**List of abbreviations** Not available.

**References** Not available.



<b>Information on evaluation method leading to the classification of mixture</b>	The classification for health and environmental hazards is derived by a combination of calculation methods and test data, if available.
<b>Full text of any H-statements not written out in full under Sections 2 to 15</b>	None.
<b>Revision information</b>	None.
<b>Training information</b>	Follow training instructions when handling this material.
<b>Disclaimer</b>	This safety data sheet (SDS) is issued based on the latest reference, data etc currently available. The information in this SDS has been carefully assessed, but no guarantee is given for its accuracy. We cannot anticipate all conditions under which this product may be used. It is the user's responsibility to take appropriate safety measures for handling.