SAFETY DATA SHEET

In accordance with Regulation (EC) №1907/2006 of the European Parliament and Council (REACH), EU /830/2015

Trade name: ***Polystyrene***
Date of issue: 2010-12
Revision date: 2016-12
Version: 1.2 instead of v.1.1 from 2016-05

1 Identification of the substance / preparation
Identification of the company / undertaking

Identification of the substance / preparation:	*Polystyrene*
REACH registration No.:	Styrene (monomer): **01-2119457861-32-0004** Butadiene (monomer): **01-2119471988-16-0032**
Synonyms:	Polyvinyl benzene, poly(ethynyl benzene), general purpose polystyrene, high impact polystyrene
Use:	For manufacture by molding, extrusion, thermoforming, of technical and household articles, including packaging for food products, articles contacting with cold and hot (up to 80 °C) food products, and toys.
Molecular formula:	
- general purpose polystyrene	$[C_8H_8]_n$
- high impact polystyrene	$[C_8H_8]_n + [C_4H_6]_m$
Manufacturer/Importer/Distributor:	
Supplier / Manufacturer:	PJSC Nizhnekamskneftekhim
Address:	PJSC Nizhnekamskneftekhim 423574 Nizhnekamsk, the Republic of Tatarstan Russian Federation
Telephone/fax:	+7(8555)377445
Person, responsible for SDS:	e-mail: …nknh@nknh.ru… ShuvalovaOV@nknh.ru, BayazitovaLH@nknh.ru
Only representative:	
Name	Oy Nizhex Scandinavia Ltd
Address	Wavulinintie 10 HELSINKI 00210 Finland Jari Taipale
Telephone/fax:	+35 896824700
e-mail	jari.taipale@nizhex.fi

Emergency telephone number:	
- country receiving the product	In each country is filled in by the consumer. See Section 16 of this SDS
- producing country	+7 (8555) 37-72-07, (8555) 37-78-30, +7 (8555) 37-72-65, (8555) 37-74-45 8.00 am – 5.00 pm in workdays

2 Hazard identification

2.1 Classification:

This product **is not** classified as hazardous according to the Regulation (EC) №1272/2008 (CLP). Non-hazardous, nontoxic substance. Has no harmful action on human organism at room temperature.

Information pertaining to special dangers for human and environment:

Adverse physicochemical effects: no

Adverse human health effects and symptoms:

Eyes	If polystyrene pellets enter eyes, they may damage the eyeball surface and cause mechanic irritation. In the course of processing, hot or melted material may cause serious injury, leading to blindness.
Skin	Polystyrene pellets are not hazardous, they don't cause irritation. In case of skin contact with hot or melted polymer, redness, pain, or burns may occur.
Inhalation	Poisonous vapours, harmful for the respiratory system, are formed only during processing or incineration of polymer at high temperatures, at excess of 140 °C, and may cause irritation of mucous membranes of the upper respiratory tract, pulmonary oedema, shortness of breath. Aspiration and introduction into lungs of polymer dust may cause slow fibroid changes in the lungs.
Ingestion	Low risk of ingestion. Symptoms of poisoning are not established. After ingestion may cause irritation of the gastrointestinal tract, as any foreign matter.

Adverse environmental effects: Non hazardous for the environment

2.2 Label elements not applicable

2.3 Other hazards: Transforms in the environment after prolonged exposure to atmosphere (precipitations, solar irradiation, cold, high temperatures)

3 Composition / Information on ingredients

3.1 Substance related information:

Chemical name/ Synonyms	EC No.	Index No.	CAS No.	Concentration (%)	Classification in accordance with Regulation (EC) No. 1272/2008 [CLP]	
					Hazard classes / categories	Hazard designation
General purpose polystyrene						
Benzene, ethenyl-, homopolymer	no	no	9003-53-6	> 97,0	Not classified	
Mineral oil	232-455-8	no	8042-47-5	<2,5	Not classified	
Zinc stearate	293-049-4	no	91051-01-3	<0,5	Not classified	
High impact polystyrene						
Benzene, ethenyl-, polymer with 1,3-butadiene	no	no	9003-55-8	> 97,0	Not classified	
Mineral oil	232-455-8	no	8042-47-5	<2,5	Not classified	
Zinc stearate	293-049-4	no	91051-01-3	<0,5	Not classified	
Antioxidant: Octadecyl 3-(3,5-di-tert-butyl-4-hydroxyphenyl)propionate	218-216-0	no	2082-79-3		Not classified	

Chemical additives are added to different grades of polystyrene in order to enhance its consumer properties. These polymer additives in total concentration of >1 % do not present any hazard during processing and use in articles, as the concentration of harmful substances in these additives, evolving at thermal decomposition, is negligibly low and do not exceed allowable PELs.

4 First aid measures

4.1 Description of first aid measures

General information: Low hazardous substance. Poisoning after introduction into human body was not established and is unlikely.

In case of inhalation: Do not cause any effects at room temperature. In case of inhalation of the thermal decomposition and incineration products, remove to fresh air, give oxygen, and perform artificial resuscitation, if necessary.

In case of skin contact: Do not cause any effects at room temperature. Wash with water and soap. Hot polymer may cause burns, in this case seek for medical advice.

In case of eye contact: Wash with large amount of water until removal of the product from the eyes.

In case of ingestion: Do not cause any effects. Ingestion of small quantities of polymer pellets does not require any measures to be taken.

4.2 Most important symptoms and effects, both acute and delayed

Eyes	If polystyrene pellets enter eyes, they may damage the eyeball surface and cause mechanic irritation. In the course of processing, hot or melted material may cause serious injury, leading to blindness.
Skin	Polystyrene pellets are not hazardous, they don't cause irritation. In case of skin contact with hot or melted polymer, redness, pain, or burns may occur.
Inhalation	Poisonous vapours, harmful for the respiratory system, are formed only during processing or incineration of polymer at high temperatures, at excess of 140 °C, and may cause irritation of mucous membranes of the upper respiratory tract, pulmonary oedema, shortness of breath. Aspiration and introduction into lungs of polymer dust may cause slow fibroid changes in the lungs.
Ingestion	Low risk of ingestion. Symptoms of poisoning are not established. After ingestion may cause irritation of the gastrointestinal tract, as any foreign matter.

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

Consult a doctor. Burns, caused by hot product, should be treated as thermal burns. The ingested product passes the gastrointestinal tract without any damage to it.

5 Fire fighting measures

5.1 Extinguishing media

Suitable extinguishing media	Fire extinguisher of any type, water, steam, fire extinguishing foams, inert gases, sand, asbestos sheets.
Non-suitable extinguishing media	No unsuitable fire extinguishing media.
5.2 Special exposure hazards arising from the substance or mixture	The product may decompose at heating with evolution of carbon dioxide, styrene, benzene, ethyl benzene, toluene, polystyrene aerosol. Carbon oxides decrease the oxygen (O_2) concentration in the ambient air, may cause toxic effect on cells, interrupting tissue respiration. Styrene irritates eyes, skin, and respiratory system, repeated or prolonged inhalation may cause asthma. Affects central and peripheral nervous systems, lungs, liver, kidneys, immune system. Ethyl benzene has an irritating effect on mucous membranes of upper respiratory system and eyes. Affects nervous system, liver, kidneys, blood, upper respiratory tract. The short term inhalation of benzene vapors does not cause immediate poisoning, high doses of benzene cause nausea and dizziness. Prolonged exposure to low concentrations of benzene may lead to chronic poisoning, that may cause leukosis (blood cancer) and anemia (hypochromia in blood). Toluene vapors have a toxic effect, at high concentrations the vapors have a narcotic effect, they have a strong effect on central and peripheral nervous systems, upper respiratory tract, hematopoietic system, liver, kidneys. The polymer dust may form explosive mixture with air.

5.3 Advice for fire fighters	Use overall protective clothing and a self-contained breathing apparatus. Clear fire area of all non-emergency personnel.

6 Accidental Release Measures

6.1 Personal precautions	Use fire protective clothing and self-contained breathing apparatus in case of fire. Use sealed equipment and containers; ventilate the working areas. Use grounded equipment, explosion-proof lighting, non-sparkling tools.
6.2 Environmental precautions	Prevent contamination of water basins and soil
6.3 Methods for cleaning up	Collect the polystyrene pellets and put into an appropriate container for disposal or recovery.
6.4 Additional information	No

7 Handling and Storage

7.1 Handling

Advice on safe handling:

Protective measures	Use input / exhaust and local ventilation. Use sealed production equipment. Grounding of equipment is obligatory to avoid electrostatic discharge, keep relative humidity below 50 %, working places should be equipped with rubber mats. Polymer dust may form explosive mixtures with air. Use personal protective equipment. Remove all ignition sources. Polystyrene pellets, dispersed over the floor, may present the danger of slippage. The product should be swept and collected with a scoop or a vacuum cleaner into a clean container.
Incompatible substances	Do not store with oxidants, acids, and alkalies.
Measures to prevent aerosol and dust generation	Use input / exhaust and local ventilation. Use sealed production equipment. Use only in places with adequate ventilation.
Measures required to protect the environment:	Decrease polystyrene losses during transportation and storage; prevent discharges to water basins, sewage.
Industrial health:	Use of personal protective equipment. After working with the product should be washed.

7.2 Conditions for safe storage

Precautions against fire and explosion:	Exclude sources of open flame. The grounding of equipment is obligatory for protection against static discharge. Use the non-sparkling tools.

Technical measures and storage conditions:	Polystyrene should be stored in a closed, dry area, excluding exposition to the direct sunlight, on the shelves or on the pallets, with elevation over the floor level of >5 cm, distance to the heating appliances >1 m, storage temperature below 30 °C, and relative humidity below 80 %.
Packing materials:	- polypropylene bags
Requirements for storage rooms and vessels**:**	The room temperature must not exceed 30 ^{o}C.
Further information on storage conditions**:**	Shelf life – 1 year max.

7.3 Specific end uses: no

8 Exposure controls / Personal protection

8.1 Exposure limit values	Due to its physical and chemical properties and low toxicity, the polystyrene pellets do not require hygienic standards for airborne concentrations to be established. Volatile products of the thermo-oxidative decomposition may be evolved during the processing of polystyrene: TLV working area, styrene-based polymers 10 mg/m^3, hazard class 4; TLV atmospheric air, fine polystyrene dust 0.35 mg/m^3 PEL working area, styrene 30/10 mg/m^3, hazard class 3; PEL working area, ethyl benzene 150/50 mg/m^3, hazard class 3; PEL working area, benzene 15/5 mg/m^3, hazard class 2; PEL working area, toluene 150/50 mg/m^3, hazard class 3; PEL working area, carbon monoxide 20 mg/m^3, hazard class 4
8.2 Occupational exposure control	Keep the concentration of the hazardous substances in the permissible range by using dilution-exhaust ventilation in the areas of maximum air contamination.
Personal protection equipment	Use protective cotton clothes, anti-slippage boots.
Respiratory protection:	In normal working conditions – not required. In emergency conditions – filter masks, respirators.
Hand protection:	Cotton gloves, heat-protective gloves for operations with hot product.
Eye protection:	Safety glasses for operations with melted product.
Skin protection:	Protective cotton clothes
Environmental exposure control:	Measurements of the contaminant concentrations during thermal processing.
Consumer exposure control:	The polystyrene pellets are not used in households.

9 Physical and chemical properties

9.1 Information on basic physical and chemical properties

Appearance	Solid white pellets

Odor	No odor
Odor threshold	Not established
pH	Not applicable
Melting point	200 °C
Flash point	Not established
Ignition point	343 °C
Autoignition temperature	440 °C (for general purpose PS) 486 °C (for high impact PS)
Vapor pressure	Not applicable
Density	1.04-1.07 g/cm^3 at 20 °C
Water solubility	Not soluble
Solubility in other solvents	Soluble in aromatic and chlorinated solvents, carbon disulphide, ketones
Vapor density (air = 1)	Not applicable

9.2 Other information none

10 Stability and reactivity

Contains a stabilizer

10.1 Activity	It reacts with strong oxidizing agents
10.2 Stability	Extremely stable at normal conditions
10.3 Possibility of dangerous reactions	Upon contact with an open flame is lit smoky flame
10.4 Conditions resulting in dangerous reactions	Heating above 140 °C
10.5 Materials causing dangerous reactions	Strong oxidizers, acids, alkalis
10.6 Hazardous decomposition products	During thermal treatment of polystyrene the thermooxidative destruction products, containing styrene, benzene, ethyl benzene, toluene, carbon oxide, may be emitted into the air.

11 Toxicological information

11.1 Information on toxicological effects

Acute oral toxicity	LD50 >5000 mg/kg, intragastric, rats
Acute dermal toxicity	Non-toxic
Acute inhalation toxicity	Not determined
Skin irritation	Not irritating
Eye irritation	Not irritating
Respiratory irritation	Not irritating
Sensitisation	No
Repeated dose toxicity	No
Mutagenicity	No

Carcinogenicity	No
Reproductive and developmental toxicity	No

12 Ecological information

12.1 Ecotoxicity:	Pelleted, stabilized polymer presents no hazard for the environment in the normal conditions of use, transportation, and storage.
12.2 Persistence and degradability:	Stable at normal use conditions. Undergoes transformation in the environment at prolonged atmospheric exposure (atmospheric precipitations, solar irradiation, cold, high temperatures).
12.3 Bioaccumulative potential:	Does not accumulate
12.4 Mobility:	Loose product may be spread over the surface of soil, floats on the surface of water.
12.5 PBT/vPvB:	Does not meet criteria.
12.6 Other adverse effects:	Not established

13 Disposal considerations

13.1 Methods of wastes (product) disposal

Solid wastes of polystyrene processing are not toxic, do not need decontamination, and are subject to processing. Wastes, not suitable for processing, are incinerated in appropriate sites.

Waste code
07 02 99 wastes from the MFSU of synthetic rubber (not otherwise specified)

14 Transport information

ADR/ RID	Not classified
IMDG	Not classified
IATA	Not classified
ADN	Not classified
IMO	Not classified
Class	Not classified
Packing group	-
Classification code	-
Hazard identification number	-
UN number	Not classified
Proper shipping name	Polystyrene

15 Regulatory information

National legislation:

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), establishing a European Chemicals Agency, amending Directive 1999/45/EC and repealing Council Regulation (EEC) No 793/93 and Commission Regulation (EC) No 1488/94 as well as Council Directive 76/769/EEC and Commission Directives 91/155/EEC, 93/67/EEC, 93/105/EC and 2000/21/EC.

16 Other information

Information sources: ESIS – European Chemical Substances Information System (European Chemicals Bureau).
Hazardous Substance Data Bank (HSDB).-U.S.National Library of Medicine, 2001-1.

National emergency telephone numbers:

Country	Phone number
Austria	+43 1 406 43 43 Poison Control Centre
Belgium	070 245 245 Centre antipoisons
Bulgaria	+35 929 154 233 Национален токсикологичен информационен център
Croatia	(+385 1) 23-48-342 Poison Control centre
Cyprus	+35 7 22405611 Department of Labour Inspection
Czech Republic	+420 224 919 293, +420 224 915 402 Toxikologické informační středisko
Denmark	82121212 (round-the-clock) AKUTHJAELP VED FORGIFTNING
Estonia	16662 (круглосуточно), (+372) 626 93 90 Poisoning Information Centre
Finland	09 471977, 094711 (round-the-clock) Poison Information Centre
France	+33 0145425959 (round-the-clock) ORFILA (INRS)
Germany	+ 49 231 9071 2971 BAuA Information Centre
Greece	No information
Hungary	(1-800)201-199 (round-the-clock) Az Egészségügyi Toxikológiai Tájékoztató
Iceland	+354 543 2222 Eitrunarmiðstöð
Ireland	01 8092566 , 01 8379964 National Poisons Information Centre
Italy	+39 06 59 94 37 33 Telephone (for technical and scientific issues)

Latvia	+371 67042473 National emergency telephone
Liechtenstein	No information
Lithuania	+370 52 20 5236, +370687 53378 Neatidėliotina informacija apsinuodijus
Luxembourg	070 245 245 Centre antipoisons
Malta	21243314 – Florianna, 22563000 – Rabat, 22695701/2 – Mosta.
Netherlands	030-2748888 Just for the information of the medical staff in cases of acute intoxication
Norway	22 59 13 00 (round-the-clock) Giftinformasjonen
Poland	No information
Portugal	808 250 143
Romania	No information
Slovakia	No information
Slovenia	No information
Spain	+ 34 91 562 04 20
Sweden	112 – ask poisions
United Kingdom	No information

Legend of abbreviations

№ CAS – registry number of the substance in Chemical Abstracts Service
№ EC – EINECS and ELINCS Number
CLP – Classification, Labelling and Packaging
PBT – Persistent, Bioaccumulative and Toxic substance
vPvB – very Persistent, very Bioaccumulative substance
DNEL – Derived No Effect Level
DMEL – Derived Minimum Effect Level
PNEC – Predicted No Effect Concentration
LD-50 – Lethal Dose to 50% of a test population (Median Lethal Dose)
LC-50 – Lethal Concentration to 50 % of a test population
NOAEC – No observed Adverse Effect Levels
EC-50 – half maximal Effective Concentration
ADR – European Agreement concerning the International Carriage of Dangerous Goods by Road
RID – Regulations concerning the International Carriage of Dangerous Goods by Rail
ADN – European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways
IMDG – International Maritime Dangerous Goods
IATA – International Air Transport Association
IMO – International Maritime Organization
SU – Sector of Use
PROC – Process Category

The information in this MSDS is based on our current knowledge and applicable legislation and is intended to describe the principles of safe work with this product. The product shouldn't be used in the purposes, different from described in Section 1. It is the responsibility of the user to meet all requirements of the local norms and regulations. This information should not be construed as guaranteeing the quality of the product.