

## MATERIAL SAFETY DATA SHEET

In accordance with EEC 91/115 Act

Trade Name

Synthetic styrene butadiene rubber (SBR)

International standard ISO 11014-1

### 1. Information on the product and the company.

1.1. Trade name	Synthetic styrene butadiene rubber
1.2. Producer-supplier	Produced By: Nizhnekamskneftekhim Inc
Name of enterprise	Supplied By: Nizh USA
Address:	92 Front Street, Hempstead, New York 11550
Urgent communication phone	516-542-0500
e-mail	info@nizhusa.com"
Fax	516-542-0055

### 2. Composition of product

Name of product	Synthetic styrene butadiene rubber
Conventional chemical or generic name:	Polymer
Molecular formula	$[(C_8H_8)_m(C_4H_6)_n]_x$
Structural formula	$\left[ \left[ \text{C}_6\text{H}_5\text{-CH=CH}_2 \right]_m \left[ \text{CH}_2\text{=CH - CH=CH}_2 \right]_n \right]_x$
Hazardous ingredients	None
Chemical description (IUPAC):	Ethynylbenzene polymer with butadi-1,3-ene
CAS -No.	9003-55-8

### 3. Harmful effects

The most critical types of exposure	Non-hazardous substance. Poisoning after ingestion is unlikely.
<i>Detrimental health effect:</i>	No toxic or irritant action on respiratory apparatus under normal industrial usage.
Eye contact	For open type systems where the contact is most probable, the particles could injure the eye surface and cause mechanical irritation.
Skin contact	Not dangerous under normal industrial usage. Contact with hot product could result in thermal burns.
Environmental impact	Non-hazardous substance in the environment
Physical and chemical risks	Contact with hot product could result in thermal burns.
Specific risks	Thermal burns when working with hot product

#### 4. First aid measures

Information is subdivided into:

Inhalation	Under normal industrial usage the product is not dangerous. In case of fire the victim who suffered suffocation from combustion products should be taken to fresh air. In case of respiratory standstill the artificial respiration “from mouth to mouth” should be performed. Call a physician if necessary.
Skin contact	If hot product got onto the skin it should be immediately washed with plenty of cold water. Apply the clean gauze bandage or a cotton bandage. Call a physician if necessary.
Eye contact	This is the solid product of inert nature. If it gets to the eye (in the process of rubber breakage) it should be removed by some clean object. If necessary consult a physician.
Ingestion	Ingestion is unlikely. If rubber crumbs are ingested then wash the mouth with water and drink a glass of water. If necessary consult a physician.
Information for physician (poisoning by carbon oxide)	When poisoned by combustion products (CO), if the respiratory is not impaired, then immediately (at the place of the incident, if possible) during the first hours inhalation of carbogène for 10 – 15 minutes should be alternated with inhalation of O <sub>2</sub> for 40 – 60 minutes. Carbogène should be used carefully. If breathing is not stimulated then it is necessary to switch to inhalation of O <sub>2</sub> only.

#### 5. Measures and means of fire safety

Fire-and-explosion hazard	Non-explosive product. Inflammable.
Fire extinguishing means	Water with wetting agents, CO <sub>2</sub> , air-and-mechanical foam, dry powder, chladones, steam, fog spraying water, inert gas – nitrogen.
Prohibited fire extinguishing means	Prohibited fire extinguishing means have not been determined.
Specific danger:	Dangerous decomposition products in the process of product burning - carbon oxides, smoke black. Incompletely burned materials: isoprene.
Protective outfit for firemen:	Tarpaulin overall, gloves, helmets, face protection shields, rubber boots. If firemen act in the fire area – fire-retardant suits.

#### 6. Measures for removal of accidentally scattered product

The product is solid and has no flow properties. Collect the scattered product and put it in the appropriate containers for disposal or reuse.

#### 7. Storage and handling procedures

Handling	No special safety measures or means are envisaged for handling the finished product. Production areas should be equipped with induced draft and forced draft ventilation.
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Storage	The product is stored indoors. The temperature inside the building should not exceed 30°C.
The following should be avoided:	Fire sources, direct sunshine, atmospheric precipitation, heat sources.
Incompatible with	Oxidizers, acids, alkali.
Packing materials	Polyethylene film, wooden containers

## 8. Regulations and measures to ensure protection of personnel

8.1 Engineering measures	Induced draft and forced draft ventilation inside the buildings should be provided as well as fire-extinguishing means.
8.2 Personal safety measures and means	Protection means shall not be required under normal operating conditions. Filter gas mask, type A, БКФ, in an emergency case.
Protection of respiratory apparatus	Hand protection
Hand protection	Thermal-proof gloves if the product is hot.
Eye protection	Safety spectacles for open systems (in the process of breakage).
Protective clothing	Special clothing should meet the typical industrial requirements

## 9. Physical and chemical properties

9.1 Physical state	
Shape	Solid product in the form of bales
Color	Gray
Odor	None
9.2 Fire hazard and other characteristics	
Melting point	At temperature not higher than 200°C
Self-ignition temperature	440°C
Molecular weight	$[(104)_m + (56)_n]_x$
Density at 20°C	0,94 g/cm <sup>3</sup>
Solubility	Non-soluble in water. Soluble in aromatic chlorinated hydrocarbons.
Chemical reactivity	Destruction and structurization (cross-linking) under O <sub>2</sub> accelerating under the action of light and heating.

## 10 Stability and chemical activity

Stability	Stable
The following conditions should be avoided	Fire sources, direct sun rays, precipitation, heat sources
Avoid contacts with the following materials	Strong oxidizers, acids, alkali.
Thermal decomposition products	Carbon oxides, alcohols, aldehydes, ketones

## 11 Toxicity

Toxicity	DL <sub>50</sub> - more than 5,000 mg/kg, intraventricular, rats DL <sub>50</sub> - more than 2,000 mg/kg, hypodermic, rabbits
Acute toxicity	CL <sub>50</sub> mg/m <sup>3</sup> – non-attainable
Sensibilizing action	Not defined
Cumulative action	Low level
Clinical presentation of acute toxic exposure	No description of acute toxic exposure cases
Dermal resorption effect	None
Mutagenic activity	Present
Carcinogenic action:	Not defined

## 12 Environmental information

Biological dissimilation In the environment	Data not available Transformation occurs
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## 13 Disposal

Residual waste	Waste rubber and rejected rubber are used in the allied production spheres (roofing, paving, mastic etc.) and rubber that cannot be reworked shall be incinerated in conformance with local regulations (laws).
Contaminated packing	Incineration in conformance with local regulations (laws).

## 14 Transportation information

International:	
▪ By land RID/ADR	Not available
▪ By sea IMDG	Not available
▪ By air IATA	Not available
UN classification number	Based on recommendations for transportation of hazardous goods of the United Nations Organization (Recommendations for transportation of hazardous goods, 11-th revised edition, the United Nations Organization, New York and Geneva, 1999, Clause 59) and International Marine Code for hazardous freights, the rubber produced in bales shall not be referred to as hazardous freight.
Supplemental regulations for transportation for the Russian Federation	In accordance with current Regulations for transportation of goods and safety rules and procedures for elimination of accidents with hazardous goods during transportation by railway, emergency card # 902..

## 15 Information on regulations

National legislation:	There are no special limitations in Russian Federation concerning usage or restrictions on fire hazard or hazard aquatic environment or health hazard for personnel, which shall be applied to rubber.
European law in accordance with directive 2000/53/EG of the	For production of rubber Nizhnokamskneftekhim Inc. does not use feedstock or materials containing heavy metals.

European Union “Declaration of actual content of heavy metals”

Based on the directive 2000/53/EG of the European Union, rubber produced by Nizhnekamskneftekhim Inc. contains not more than 0.1 weight percent of lead (Pb), mercury (Hg) and hexavalent chromium (Cr  $6^+$ ) and not more than 0.01 weight percent of cadmium (Cd).

## **16 Miscellaneous**

Special marking:

S-designations:

S15

Keep away from heat sources

Head of Technical Department

V. A. Shamanski