VORONEZHSYNTHEZKAUCHUK JSC

SAFETY DATA SHEET
According to 1907/2006/EC, article 31 (REACH)

STYRENE-BUTADIENE RUBBER (SBR)
SBR-1500

Emulsion type

SECTION 1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND COMPANY/UNDERTAKING

1.1 Product identifier

<table>
<thead>
<tr>
<th>Name of Substance:</th>
<th>Synthetic styrene-butadiene rubber (emulsion type) SBR 1500</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name of IUPAC</td>
<td>benzene, ethenyl-, polymer with buta-1,3-diene</td>
</tr>
<tr>
<td>Synonyms</td>
<td>Poly(styrene-co-butadiene)</td>
</tr>
<tr>
<td>Registration # for 1,3-butadiene (CAS #106-99-0; EC #203-450-8) Index No(CLP): 601-013-00-X</td>
<td>01-2119471988-16-0034 01-2119471988-16-0033</td>
</tr>
<tr>
<td>Registration for styrene (CAS #100-42-5; EC #202-851-5) Index No(CLP): 601-026-00-0</td>
<td>01-2119457861-32-0016</td>
</tr>
</tbody>
</table>

1.2 Relevant identified uses of the substance

Most common technical function of Styrene Butadiene Rubber (emulsion type): tyre production, technical rubber parts (profiles, hoses, shoe soles, belt production, technical rubber goods), rubber compound.

DISCLAIMER
This product is a polymer and is not classified as dangerous under criteria of Directives No 67/458/EEC, No 1999/45/EC and Regulation (EC) No 1272/2008 (Regulation CLP). This polymer does not contain SVHCs, SVHCs included in Candidate List, substances classified as dangerous under Article 59.2 Regulation (EC) No 1272/2008, namely:
- In an individual concentration of ≥ 1 % by weight for non-gaseous mixtures posing human health or environmental; or
- In an individual concentration of ≥ 0.1 % by weight for non-gaseous mixtures that is carcinogenic category 1, 2 or toxic to reproduction category 1A, 1B and 2, skin sensitisr category 1, respiratory sensitisr category 1, or has effects on or via lactation or is persistent, bioaccumulative and toxic (PBT) in accordance with the criteria set out in Annex XIII or very persistent and very bioaccumulative (vPvB) in accordance with the criteria set out in Annex XIII REACH; or
- A substance for which there are Community workplace exposure limits.

In accordance with mentioned above, this product does not require and official e-SDS as per Regulations (EC) No 1907/2006 (articles 31.1; 31.2) and Commission Regulation (EU) No 453/2010.
This e-SDS is developed in good faith to provide a customer with sufficient information allowing to take necessary measures to comply with relevant HSE requirements.
1.3 Details of the supplier of the safety data sheet

Only representative
Company name: Gazprom Marketing and Trading France
Address: 68 avenue des Champs-Elysées, 75008, Paris, France
Contact Telephone: +33 1 42 99 73 50
Fax: +33 1 42 99 73 99
Email Address: Yury.severinchik@gazprom-mt.com

Suppliers
Company name: Voronezhsyntheskauchuk JSC
Address: 2, Leninsky avenue, Voronezh, Russian Federation, 394014
Phone: +7 4732 20 65 26
Fax: +7 4732 20 69 40, 20 68 19
Email Address: office@vrnsk.vrn.ru
Emergency phone: +7 4732 49 09 00 (round the clock)

Emergency phone in the country of delivery: 112 (Please note that emergency numbers may vary depending upon the country of delivery though 112 remains valid as universal number)

SECTION 2. HAZARDS IDENTIFICATION

Classification:
ANNEX I OF DIRECTIVE 67/548/EEC:
Physical/Chemical Hazards:
None.

Health Hazards:
None.

Environmental hazards:
None.

EU CLP 2008:
Physical/Chemical Hazards:
None.

Health Hazards:
None.

Environmental hazards:
None.

Specific hazard:
No significant health hazard in normal industrial use conditions.
Contact with melted/ heated product may cause thermal burns.
Processing vapours, which can irritate eyes and respiratory tract, may form when product is heated at high temperatures.
Combustible solid.
SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

This product is a synthetic rubber consisting of at least 90% co-polymer from styrene and butadiene (21-26% bound styrene), 0.7-2.0% antioxidant (CAS#119-47-1/EC# 204-327-1 or CAS#68610-06-0/EC# 271-847-3), 4.5-7.5% organic acids (fatty acids C\textsubscript{14-18}). May contain traces of styrene (<0.05%).

Formula: [(-C\textsubscript{4}H\textsubscript{6})\textsubscript{m} (-C\textsubscript{9}H\textsubscript{10})\textsubscript{n}]  

<table>
<thead>
<tr>
<th>Name</th>
<th>EC #</th>
<th>CAS #</th>
<th>Content, %</th>
<th>Classification EC#67/548/EEC and EC#1272/2008 (CLP)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Poly(styrene-co-butadiene)</td>
<td>none</td>
<td>9003-55-8</td>
<td>&gt; 90</td>
<td>none</td>
</tr>
</tbody>
</table>

The product does not contain impurities or additives that could affect product’s labelling and classification according to Regulation (EC) No 67/548/EEC and Regulation (EC) No 1272/2008 (CLP) in the concentration ranges specified.

SECTION 4. FIRST-AID MEASURES

General information:
Spontaneous penetration of styrene-butadiene rubber into human organism is impossible. Styrene-butadiene rubber at normal conditions is stable and non-volatile. Under high temperatures and during rubber processing release of monomer vapors are possible which in poor ventilated areas may cause irritation of eyes mucous and upper respiratory ways. Contact with eyes may cause mechanical damage, irritation of eyes mucous, delacrimation. No significant health hazard in normal industrial use conditions. Contact with melted/ heated product may cause thermal burns.

Inhalation:
In emergency and in case of poisoning by rubber combustion products or if decomposition or thermal destruction products are inhaled: Move any exposed person to fresh air at once. Keep warm and at rest. If there is respiratory distress give oxygen. If respiration stops or shows signs of failing, apply artificial respiration. Get medical attention.

Ingestion:
In case of accidental swallowing Wash out mouth with water and give plenty of water to drink, provided person is conscious. Do not induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. If vomiting occurs naturally, have the exposed person lean forward. Get medical aid.

Skin contact:
There are no risks in normal industrial use conditions. In the case of contact with hot product remove contaminated clothing and wash skin with plenty of running water, under a shower if affected area is large enough to warrant this. Get medical attention.

Eye contact:
Rinse immediately eye with plenty of low pressure water for at least 15 minutes. Remove any contact lenses. Get medical attention.
SECTION 5. FIRE-FIGHTING MEASURES

Extinguishing media:
Use foam, dry chemical, carbon dioxide, sand or water spray.

Special fire fighting procedures:
Keep away from sources of ignition – no smoking.
Extinguish fire keeping safe distance. Not yet ignited rubber briquettes to be kept cool by means of water spraying.

Unusual fire & explosion hazards:
None.

Specific hazards:
Combustion generates irritating and toxic fumes.
Burning causes emissions of carbon oxide.

Protective measures in fire:
Wear canvas protective suit, gloves, helmets, face shields, rubber or kersey boots, gas mask.
In proximity to fire wear full protective clothing and MSHA/NIOSH-approved self-contained breathing apparatus with full face piece operated in the pressure demand or other positive pressure mode.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions:
See section 8.

Individual safety measures:
Remove sources of ignition.
Provide workplace ventilation, process equipment and communication sealing, air monitoring of the workplace, avoid contact with skin and eyes.

Environmental precautions:
Do not allow penetration of the product into water reservoirs, surface and ground water, sewer ducts and soil. Preventing disposal into water reservoirs of contaminated water without treatment.
Monitor content of hazardous substances in the air.
Provide sealing of process equipment.

Spill clean-up methods:
Absorb spill with inert material (e.g. vermiculite, sand or earth), then place in suitable container.

SECTION 7. HANDLING AND STORAGE

Handling:
Handle in accordance with good industrial hygiene and safety practice.
Provide input-extract and local ventilation of work zones.
Provide thorough sealing and grounding of process equipment.
Regularly control work zone air.
Usage precaution:
Use in accordance with safety measures, rules of personal hygiene and industrial sanitation in the production at the facility.
Avoid contact with eyes and skin. Do not ingest or inhale combustion or decomposition products.

Storage precautions:
Store in a dry, well-ventilated area, at temperature not exceeding 30°C.
Keep away from direct sunlight, atmospheric precipitation and incompatible substances in a closed container. Prevent from freezing.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Exposure limits:
None listed.

Personal protective equipment:
Respiratory tract:
Not required (if is used workplace conditions).
In emergency or in case of increase of concentration of hazardous substances at the workplace wear positive pressure MSHA/NIOSH-approved self-contained breathing apparatus.

Hand protection:
Wear approved protective gloves.

Eye protection:
Wear approved safety goggles.

Skin protection:
Wear protective clothing and footwear, in contact with the hot product wear thermally resistant gloves.

Hygiene measures:
Personal hygiene and industrial sanitation in the production at the facility (wash hands at the end of each work shift and before eating, drinking, smoking or using the toilet).

Technical safety measures:
Forced-air and exhaust ventilation in work zones.
Compulsory monitoring of air conditions in work areas.
Sealing and grounding of equipment and communications.
Usage of intrinsically safe equipment.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Physical state at 20°C and 1013 hPa elastic solid
Appearance rubber is produced in the form of briquettes
Odour peculiar, at processing temperatures slight odor of organic compounds is possible
Colour light yellow to dark-yellow
pH value: not applicable, insoluble
Density: 0.928 g/cm³
Solubility: insoluble in water
s soluble in aromatic and aliphatic solvents (benzene, toluene, heptane, hexane, gasoline) under normal conditions
Vapor pressure: does not evaporate
Ignition temperature: 285 °C
Auto-ignition temperature: 336 °C
Flammability: does not ignite spontaneously, burn only upon entering into a source of fire
Explosive properties: non explosive
Viscosity according to Muni (MB1+4): 40-65 conv.units (at 100°C)
Average molecular weight: 220000-260000
Granulometry: not applicable, substance is not marketed or used in granular form

SECTION 10. STABILITY AND REACTIVITY

Stability:
Stable under normal temperatures and pressures.

Reactivity:
Oxidizes, hydrogenates.

Materials to avoid:
Acids, alkalis, organic solvents, aliphatic and aromatic hydrocarbons, oxidising agents.

Conditions to avoid:
Avoid naked flame. Avoid high temperatures. Avoid prolonged heat. Avoid long term exposure to direct sun beams. Avoid contact with incompatible substances.

Hazardous decomposition products:
Carbon oxides.

SECTION 11. TOXICOLOGICAL INFORMATION

General information:
No significant health hazard in normal industrial use conditions.
Acute toxicity: LD50/oral/rat: > 5000 mg/kg. 
LD50/dermal/rabbit: >2000 mg/kg. 
Inhalation toxicity: very low toxicity. 
The substance is a non-volatile elastic solid and is produced in the form of briquettes. There is therefore no potential for inhalation exposure.

Irritation and corrosion: Not irritating or corrosive. 
Skin: none. 
Eye: none. 
Respiratory tract: none.

Sensitisation: Not sensitizing. 
Skin: none. 
Eye: none. 
Respiratory tract: none.

Carcinogenicity: Not carcinogenic.

Mutagenicity: Non mutagenic.

Toxicity for reproduction: Not investigated.

Repeated dose toxicity: Not investigated.

Other information: Not investigated.

Reference Russian Register of Potentially Hazardous Chemical and Biological Substances /FBEPH.

SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity:
The product is poorly biodegradable but does not pose a hazard to the environment. 
Does not form toxic compounds with other substances in air and water.

General information: 
No significant ecological hazard in normal industrial use conditions 
At normal conditions rubber is a very stable product. 
Does not form toxic compounds with other substances in air and water. 
Pollution of water ponds and soil with polymer flakes may occur only if production, handling and transportation rules are not followed, in case of effluent discharge without treatment, as a result of emergencies and accidents.

Aquatic toxicity: Not investigated.

Biodegradation: Abiotic degradation: t_{1/2}: > 30 d extremely stable.

Chemical degradation: Not investigated.

Bioaccumulative potential Not investigated.

Mobility in soil: Not investigated.
Results of PBT and vPvB assessment:
Can be stated that the substance does not fulfill the PBT criteria (not PBT) and not the vPvB criteria (not vPvB).

Reference:
Russian Register of Potentially Hazardous Chemical and Biological Substances /FBEPH.

Water hazard classification:
According to the German VvVwS: WGK- 0 (not classified)

SECTION 13. DISPOSAL CONSIDERATIONS

General information:
Place into a suitable closed container for disposal.

Disposal methods:
Dispose of in accordance with local and national regulations. Waste water containing rubber should be treated. Packaging waste (paper bags) shall be collected and send for recycling. Plastic waste shall be removed to disposal.

SECTION 14. TRANSPORT INFORMATION

General:
The product is not covered by international regulations on the transport of dangerous goods. UN: none.

SECTION 15. REGULATORY INFORMATION

Chemical Safety Report has been performed for monomers: 1,3-butadiene (CAS #106-99-0; EC #203-450-8), styrene (CAS #100-42-5; EC #202-851-5).

SECTION 16. OTHER INFORMATION

16.1 Indication of changes:

<table>
<thead>
<tr>
<th>VERSION</th>
<th>Date of change</th>
<th>Section</th>
<th>Description of changes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Version: 1.0</td>
<td>24/02/2010</td>
<td>1.1, 2</td>
<td>First edition created according to recommendations of Regulations (EC) #1907/2006 (Article 31.1).</td>
</tr>
<tr>
<td>Version: 2.0</td>
<td>07/02/2011</td>
<td>1; 3-13; 15; 16</td>
<td>Sections 1.1, 2 were updated.</td>
</tr>
<tr>
<td>Version: 2.1</td>
<td>07/02/2012</td>
<td>1; 3-13; 15; 16</td>
<td>1. Product name SKS-30 ARK (SBR-1500) was renamed into SBR-1500. 2. Section 1.1 was updated. 3. Section 1.3 was updated (E-mail address, Emergency phone for suppliers). 4. DISCLAIMER was added on the first page. 5. Sections 4. General information subsection was added. Inhalation subsection was updated. 6. Section 5. Extinguishing media, Special fire fighting procedures were updated.</td>
</tr>
</tbody>
</table>
### Section 6. Individual safety measures

Environmental precautions subsections were updated.

### Section 8. Personal protective equipment

Hygiene measures, Technical safety measures subsections were updated.

### Section 12. Ecotoxicity

Subsection was updated.

### Section 13. Disposal methods

Subsection was updated.

### Sections 3; 9, 10; 11; 15, 16

Sections 3; 9, 10; 11; 15, 16 were fully updated.

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### 16.2 Relevant R-phrases, Hazard- and EU Hazard-statements

**Labelling:** none.

**R-phrases:** none.

#### Safety Advice (S-phrases):

- **S 16** Keep away from sources of ignition - no smoking.
- **S 41** In case of fire and/or explosion do not breathe fumes.
- **S 47** Keep at temperature not exceeding 30°C.
- **S 61** Avoid release to the environment.

### 16.3 Abbreviations and acronyms

- **LD50** Lethal Dose to 50% of a test population (Median Lethal Dose).
- **LC50** Lethal Concentration to 50% of a test population.
- **PBT** Persistent, bioaccumulative, toxic chemical.
- **vPvB** Very Persistent, Very Bioaccumulative.
- **UN** United Nations.
- **WGK** Wassergefährdungsklasse (German: Water Hazard Class).

### 16.4 Key literature references and sources

**EU DIRECTIVES**


DIRECTIVE 67/548/EEC on the approximation of the laws, regulations and administrative provisions relating to the classification, packaging and labeling of dangerous substances.


NATIONAL REGULATIONS (GERMANY)
Major Accident Hazard Legislation 82/501/EWG.


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