

## VORONEZHSYNTHEZKAUCHUK JSC

### SAFETY DATA SHEET

According to Regulations (EC) 1907/2006 (REACH), (EC) 1272/2008 (CLP) & (EU) 2015/830

## STYRENE-BUTADIENE RUBBER (SBR) SBR-1705 TDAE

### Emulsion type

Version: 2.5

Created: 03/06/2019

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

##### 1.1. Product identifier

<b>Name of Substance:</b>	Synthetic styrene-butadiene rubber (emulsion type) SBR-1705 TDAE
Name of IUPAC	benzene, ethenyl-, polymer with buta-1,3-diene
Synonyms	Poly(styrene- <i>co</i> -butadiene)
Registration # for 1,3-butadiene: (CAS #106-99-0; EC #203-450-8)	01-2119471988-16-0034
<i>Index No(CLP):601-013-00-X</i>	01-2119471988-16-0033
Registration for styrene : (CAS #100-42-5; EC #202-851-5)	01-2119457861-32-0016
<i>Index No(CLP): 601-026-00-0</i>	
Registration for oil filler : (CAS #64741-88-4; EC #265-090-8)	01-2119488706-23-0018
<i>Index No(CLP): 649-454-00-7</i>	

##### 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 substances classified as dangerous under Article 59.2 Regulation (EC) No 1272/2008, namely:*

- *in an individual concentration of  $\geq 1$  % by weight for non-gaseous mixtures posing human health or environmental;*
- *in an individual concentration of  $\geq 0.1$  % by weight for non-gaseous mixtures that is carcinogenic category 2 or toxic to reproduction category 1A, 1B and 2, skin sensitiser category 1, respiratory sensitiser 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; 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

#### Manufacturer

Company name: Voronezhsynthetkauchuk JSC  
 Address: 2, Leninsky prospect, Voronezh, Russia, 394014  
 Phone: +7 473 220 68 88  
 Fax: +7 473 220 68 69  
 Email Address: VSK-office@vsk.sibur.ru  
 Emergency phone: +7 473 249 09 00, +7 473 220 76 30 (round the clock)

#### 1.4. Emergency phone number

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

### 2.1. Classification of the substance or mixture

Classification according to Regulation (EC) No 1272/2008 (CLP/GHS)

#### Physical/Chemical Hazards

None.

#### Health Hazards

None.

#### Environmental hazards

None.

### 2.2. Label elements

Labelling according to Regulation (EC) No 1272/2008 (CLP/GHS)

Not applicable.

### 2.3. 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 75 - 78% co-polymer from styrene and butadiene (22-25% bound styrene), 14 - 17% oil filler (CAS#64741-88-4/EC#265-090-8), 5.0 - 6.5% organic acids (fatty acids C<sub>14-18</sub>), 0.6 - 2.0% antioxidant (CAS#119-47-1/EC#204-327-1 or CAS#68610-06-0/EC # 271-847-3). May contain traces of styrene (< 0.05%).

Formula: [(-C<sub>4</sub>H<sub>6</sub>)<sub>m</sub> (-C<sub>9</sub>H<sub>10</sub>)<sub>n</sub>]

According to CLP Regulation the product is a mixture of poly(styrene-co-butadiene) and oil filler (distillates (petroleum), solvent-refined heavy paraffinic):

Name	EC #	CAS #	Content, %	Classification EC#1272/2008 (CLP)
Poly(styrene-co-butadiene)	none	9003-55-8	75.0 - 78.0	none
Distillates (petroleum), solvent-refined heavy paraffinic (oil filler)	265-090-8	64741-88-4	14.0 - 17.0	none*

\*The substance is not classified as carcinogenic (GHS08, Carc 1B, H350) as it complies with Note L (IP 346 < 3%; viscosity > 20.5 mm<sup>2</sup>/s at 40 °C) having polynuclear aromatic hydrocarbon content < 3% determined in accordance with IP 346 (dimethyl sulfoxide extraction) (Annex VI – Regulation EC 1272/2008).

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 vapours 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 attention.

##### **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**

##### **5.1. Extinguishing media**

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

##### **5.2. 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.

##### **5.3. Unusual fire & explosion hazards**

None.

##### **5.4. Specific hazards**

Combustion generates irritating and toxic fumes.

Burning causes emissions of carbon oxide.

##### **5.5. 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

### 6.1. Personal precautions

See section 8.

### 6.2. 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.

### 6.3. 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.

### 6.4. 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

### 7.1 Precautions for safe 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.

### 7.2. 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.

### 7.3. Storage precautions

Store in a dry, well-ventilated area, at temperature not exceeding 40 °C.

Keep away from direct sunlight, atmospheric precipitation and incompatible substances in a closed container. Prevent from freezing.

## SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

### 8.1. Exposure limits

None listed.

### 8.2. Personal protective equipment

#### Respiratory tract

Not required (if is used workplace conditions).

In emergency or in case of increase of hazardous substances concentration 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.

### 8.3. 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).

### 8.4. 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

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

Property	Value
Physical state at 20 °C and 1013 hPa	elastic solid (firm homogeneous spongy mass)
Appearance	rubber is produced in the form of briquettes
Odour	peculiar, at processing temperatures slight odor of organic compounds is possible
Colour	from brown to dark-brown
pH value	not applicable, insoluble
Density	0.945 g/cm <sup>3</sup>
Solubility	insoluble in water soluble in aromatic and aliphatic solvents (benzene, toluene, heptane, hexane, benzene)
Vapor pressure	does not evaporate
Ignition temperature	290 °C
Auto-ignition temperature	337 °C
Flammability	does not ignite spontaneously, burn only upon entering into a source of fire
Explosive properties	non explosive
Viscosity according to Mooney (MB1+4)	35 - 65 conv.units (at 100°C)
Average molecular weight	290000-320000
Granulometry	not applicable, substance is not marketed or used in granular form

### 9.2. Other information

None.

## SECTION 10. STABILITY AND REACTIVITY

### 10.1. Stability

Stable under normal temperatures and pressures.

### 10.2. Reactivity

Oxidizes, hydrogenates.

### 10.3. Materials to avoid

Acids, alkalis, organic solvents, aliphatic and aromatic hydrocarbons, oxidising agents

### 10.4. 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.

### 10.5. Hazardous decomposition products

Carbon oxides.

## SECTION 11. TOXICOLOGICAL INFORMATION

### General information

No significant health hazard in normal industrial use conditions.

According to CLP Regulation the product is a mixture of poly(styrene-co-butadiene) rubber and oil filler (distillates (petroleum), solvent-refined heavy paraffinic):

Property	Synthetic poly (styrene-co-butadiene) rubber (CAS #9003-55-8)	Distillates (petroleum), solvent-refined heavy paraffinic (oil filler) (CAS #64741-88-4; EC #265-090-8)
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.	LD50/oral/rat : >5000 mg/kg (OECD guideline 401) LD50/dermal/rabbit: >5000 mg/kg (OECD guideline 403) LC50/inhalation/4h/rat :>5.0 mg/l (OECD guideline 402)
Irritation and corrosion	Not irritating or corrosive.	Not irritating or corrosive.
Sensitisation	Not sensitising.	Not sensitising.
Carcinogenicity	Not carcinogenic.	Not carcinogenic.
Mutagenicity	Non-mutagenic.	Non-mutagenic.
Toxicity for reproduction	Not investigated.	NOAEL (oral) = 1000 mg/kg bw/day (OECD 421). Not classified.
Repeated dose toxicity	Not investigated.	Not classified.
Other information	Not investigated.	STOT- single exposure: not classified STOT-repeated exposure: not classified Aspiration hazard: not classified.
Reference	Russian Register of Potentially Hazardous Chemical and Biological Substances /FBEPH.	SDS for oil filler from supplier.

## SECTION 12. ECOLOGICAL INFORMATION

### General information

No significant ecological hazard in normal industrial use conditions.

Property	Synthetic poly (styrene-co-butadiene) rubber (CAS #9003-55-8)	Distillates (petroleum), solvent-refined heavy paraffinic (oil filler) (CAS #64741-88-4; EC #265-090-8)
General information	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.	Product does not meet the criteria for classification as an environmental hazard. As this substance is a complex petroleum product with unknown and variable composition belonging on the group of petroleum products having variable and low water solubility, aquatic toxicity testing is not technically feasible for this product itself. Aquatic and chronic toxicity is evaluated based on the aquatic toxicity test results of different petroleum products and using toxicity predictions obtained using the PETROTOX model for petroleum substances (CONCAWE; appendix 5 in CSR of other lubricant oils). Based on the available information this substance is not considered to possess acute or chronic aquatic toxicity.

<b>Aquatic toxicity</b>	Not investigated.	<b>Short-term aquatic toxicity</b> Toxicity to fish ( <i>Pimephales promelas</i> ): LL50(96 h): >100 mg/l; NOEL: >= 100 mg/l (OECD 203). Toxicity test on aquatic invertebrates ( <i>Daphnia magna</i> ): EL50 (48 h): >10 000 mg/l; NOEL >= 10 000 mg/l (OECD 202). Toxicity to algae growth inhibition ( <i>Pseudokirchnerella subcapitata</i> ): NOEL (72 h) >=100 mg/L (OECD 201). Toxicity to other organisms: not applicable (product does not meet the criteria for classification as an environmental hazard).
<b>Biodegradation</b>	Abiotic degradation: $t_{1/2}$ : > 30 d extremely stable	Product is not readily biodegradable (OECD guidelines 301 B and 301F): 31 % degradation after 28 d (O <sub>2</sub> consumption). /Biodegradation for this complex hydrocarbon UVCB-substance is based on the test results of different petroleum products and modelling of hydrocarbon blocks using PETRORISK model (CONCAWE)/
<b>Chemical degradation</b>	Not investigated.	Resistant to hydrolysis because this product lacks a functional group that is hydrolytically reactive.
<b>Bioaccumulative potential</b>	Not investigated.	In accordance with the results of CONCAWE modeling, potential of bioaccumulation or adsorption to soil cannot be neglected. As this substance is a hydrocarbon UVCB, testing of BCF-factor and partition-coefficient is not technically feasible. Therefore, bioaccumulation is evaluated based on the hydrocarbon blocks of different petroleum products using PETRORISK model (CONCAWE).
<b>Mobility in soil</b>	Not investigated.	No data available
<b>Results of PBT and vPvB assessment</b>	Can be stated that the substance does not fulfil the PBT criteria (not PBT) and not the vPvB criteria (not vPvB).	No hydrocarbon structure that meets the PBT/vPvB criteria (CONCAWE 2010b).
<b>Reference</b>	Russian Register of Potentially Hazardous Chemical and Biological Substances /FBEPH.	SDS for oil filler from supplier.

**Water hazard classification**

According to the German VwVwS: WGK- 0 (not classified).

**SECTION 13. DISPOSAL CONSIDERATIONS****13.1. General information**

Place into a suitable closed container for disposal.

### 13.2. 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) and oil filler: distillates (petroleum), solvent-refined heavy paraffinic (CAS #64741-88-4/EC #265-090-8).

## SECTION 16. OTHER INFORMATION

### 16.1 Indication of changes

VERSION	Date of change	Section	Description of changes
Version: 1.0	16/03/2010		First edition created according to recommendations of Regulations (EC) #1907/2006 (Article 31.1).
Version: 2.0	07/02/2011	1.1, 2	Sections 1.1, 2 were updated.
Version: 2.1	09/02/2012	1; 3-13; 15; 16	<ol style="list-style-type: none"> <li>1 Product name SKS-30 ARKM-15 (SBR 1706 TDAE) was changed into SBR-1706 TDAE.</li> <li>2. Section 1.1 was updated.</li> <li>3. Section 1.3 was updated (E-mail address, Emergency phone for suppliers).</li> <li>4. DISCLAIMER was added on the first page.</li> <li>5. Sections 4. General information subsection was added. Inhalation Subsection was updated.</li> <li>6. Section 5. Subsections updated: Extinguishing media, Special fire fighting procedures.</li> <li>7. Section 6. Subsections updated: Individual safety measures, Environmental precautions.</li> <li>8. Section 7. Subsections updated: Storage precautions, Handling .</li> <li>9. Section 8. Subsections were updated: Personal protective equipment, Hygiene measures, Technical safety measures.</li> <li>10. Section 13. Disposal method subsection was updated.</li> <li>11. Sections 3; 9, 10; 11; 12; 15, 16 were fully updated.</li> </ol>
Version: 2.2	05/08/2013	1;16	Product name SKS-30 ARKM-15 (SBR 1706 TDAE) was changed into SBR-1705 TDAE according to preliminary notice #1 on revising #6 of Technical specification 38.403121-98.
Version: 2.3	15/07/2016	1.3; 2	<p>Section 1.3: Supplier's contact details were updated.</p> <p>Section 2: Only classification and labelling according CLP are given.</p>



VERSION	Date of change	Section	Description of changes
Version: 2.4	23/08/2016	7.3	Storage temperature was changed to 40 °C.
Version: 2.5	03/06/2019	All	Revision of SDS. No change in content.

### 16.2. Abbreviations and acronyms

EC50	Effective concentration of the substance that causes specific measured effect for 50 % of the test organisms
EL50	EL50 - Effective loading rate of the substance that causes specific measured effect for 50 % of the test organisms
LL50	Lethal loading rate of the substance that kills 50 % of the test organisms
LC50	Lethal Concentration to 50 % of a test population
LD50	Lethal Dose to 50% of a test population (Median Lethal Dose)
NOAEL	No Observed Adverse Effect Level
NOEC	No Observed Effect Concentration
OECD	Organization for Economic Co-operation and Development
STOT	Specific Target Organ Toxicity
PBT	Persistent, bioaccumulative, toxic chemical
vPvB	Very Persistent, Very Bioaccumulative
UN	United Nations
WGK	Wassergefährdungsklasse ( <i>German: Water Hazard Class</i> )

### 16.3. Key literature references and sources

#### EU DIRECTIVES

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.

Regulation (EC) No 1272/2008 REGULATION (EC) No 1272/2008 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 16 December 2008 on classification, labelling and packaging of substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No 1907/2006.

Regulations. Commission regulation (EU) no 453/2010 of 20 May 2010 amending Regulation (EC) No 1907/2006 of the European Parliament and of the Council on the Registration, Evaluation, Authorization and Restriction of Chemicals (REACH).

DIRECTIVE 1999/45/EC OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 31 May 1999 concerning the approximation of the laws, regulations and administrative provisions of the Member States relating to the classification, packaging and labelling of dangerous preparations.

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

COMMISSION DECISION of 16 January 2001 amending Decision 2000/532/EC as regards the list of wastes (notified under document number (2001/118/EC).

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

Russian Register of Potentially Hazardous Chemical and Biological Substances (FBEPH). BENZENE, ETHENYL-, POLYMER WITH BUTA-1,3-DIENE. Dossier of potentially hazardous chemical and biological substance BT#001343, 1998. Ministry of Health of the Russian Federation.

**DISCLAIMER**

*This information is based on our current level of knowledge. This information may be subject to revision as new knowledge and experience becomes available, and SIBUR makes no warranties and assumes no liability in connection with any use of this information. Since SIBUR cannot be aware of all aspects of your business and the impact the REACH Regulation has for your company, SIBUR strongly encourages you to get familiar with the REACH Regulation in order to comply with its requirements and timelines.*

**END OF SDS**