

Material Safety Data Sheet

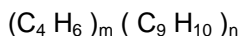
Product name Synthetic Butadiene-Alpha-Methyl-Styrene Rubber
SKMS-30-ARKM-15, SKMS-30-ARKM-15P, SBR-1500,
SBR-1502.

Ingredients	%max	MAC*	Class of danger
-Butadiene 1,3 in copolymer	70-75	100	4
- α -methyl-styrene in copolymer (non-polymerized)	21-24 0,05 max	5	3
- petroleum oil PN-6	14-17	200	4
- antioxidant			
BS-1	0,15-0,50	not established	4
or Santoflex	0,1-0,5	not established	-
or Wingstay T	0,7-1,2	not established	-
or Trinonylphenylphosphite	1,0-2,0	not established	4

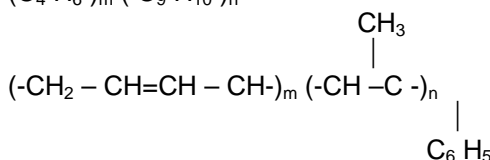
(* max allowable concentration)

Formulae

Empiric



Structural



General hazard identification

The rubber contains antioxidant of amine, phenol or amino-phenol types to prevent destruction during storage, transporting and at first stages of processing. The rubber also contains non-polymerized α -methyl-styrene. At normal safe conditions these substances are not harmful.

Other information

The following antioxidants are used as stabilizers: BS-1, Trinonylphenylphosphite, Santoflex, Wingstay T. As for the influence upon human organism these antioxidants are not dangerous. The rubber is available in the form of briquettes weighing 30 ± 1 kg.

Producer/Supplier

"Togliattikauchuk"

Address

8, Novozavodskaya str., Togliatti,
Samara region, 445007, Russia.

Tel/Fax

007-8482- 22 14 41, 007-8482- 22 49 49

3. Hazard Identification

3.1. Kinds of influence

3.1.1.

Synthetic Butadiene- α -Methyl-Styrene Rubber is a substance of little danger. At elevated temperatures and when processed the rubber has a weak odour of residual monomer - α -methyl-styrene. The content of non-polymerized monomer in the rubber is 0,05% max, and it is not harmful when industrial hygiene is observed.

The antioxidants are dangerous only when the rubber is produced. In case of fire polymer combustion products - carbon oxides, carbon black may be dangerous.

3.1.2. Effect on human organism

Inhalation, skin contact (in a melted state), eyes.

3.1.3. Affected organs and tissues

The rubber is not poisonous and it causes no pathological changes. At elevated temperature the products of destruction, such as butadiene, α -methyl-styrene, may affect nervous system, liver, blood, kidneys.

3.1.4. Manifestation of influence

-skin contact

Direct contact of the rubber with unprotected skin causes no pathological changes. Hot product may cause burns.

-eye contact

The rubber may scratch eyeballs.

-ingestion

Sickness.

-inhalation

The rubber is a product of low volatility, it is not irritant. At elevated temperatures butadiene and α -methyl-styrene may be isolated, which are irritant for eyes and respiratory system.

- in case of fire

Skin burns and injures.

3.2. Ecological information

3.2.1. General description

The rubber has no environmental hazard. Products of destruction (α -methyl-styrene, butadiene) may contaminate air, water, soil.

3.2.2. Ways of influence upon environment

If the rules of storage and transportation are not violated.

3.2.3. Indications observed

Water and soil contamination. Degradation products may change odour and taste of water and air.

3.2.4. Hygienic norms

Maximum Allowable Concentrations (MAC) of the rubber for production premises, air, water reservoirs, fishery soil are not established.

Class of danger(prod.premises) –4

Decomposition products:

	Butadiene 1.3	a-methyl-styrene
MAC _{prod.premises} mg/m ³	100	5
Class of danger	4	3
MAC _{air} mg/ m ³	3/1	0.04
Class of danger	4	3
MAC _{water} mg/l	0.05	0.1
Class of danger	4	3
MAC _{fishery} mg/l	not established	not established
Class of danger	-	-
MAC _{soil} mg/kg	-	-

4. First Aid Measures**4.1. Inhalation**

Not possible in normal conditions. Poisoning with decomposition products- fresh air, warmth.

In case of fainting, put victim horizontally with lowered head. Give ammonia to breath in. In case of breath stop- artificial breathing. Call ambulance.

4.2. Skin contact

Skin contact with the rubber is not dangerous. Hot rubber may cause burns- in this case wash the skin with plenty of cold water, apply aseptic bandage. Call ambulance if necessary.

4.3. Eye contact

Remove from eye, wash with plenty of water.

4.4. Ingestion

Drink plenty of water.

4.5. Personal protection measures

First aid kit.

5. Fire-Fighting Measures**5.1. General description**

Inflammable product. Burns when brought into fire source.

5.2. Fire danger indices

Spontaneous ignition t⁰ - 336°C
Flash point - 285°C

5.3. Thermal destruction products

Carbon oxides

5.4. Fire extinguishing media

Small fire extinguishing media

Chemical powders, carbonic acid fire extinguisher, asbestos fabric, sand, earth.

Fire extinguishing media

Air-mechanical and chemical foams, water spray, water steam.

Personal protection measures

Protective fire fighting clothing, breathing equipment.

6. Emergency Situation Prevention Measures

6.1. Emergency situation prevention measures

- 6.1.1. General recommendations** Pressurized, hermetically sealed grounded production equipment in order to avoid accumulation of static electricity. Ventilation of production premises.
- 6.1.2. Recommendations:**
- fire fighting Observe fire fighting measures.
 - handling and storage Avoid inhalation of hot rubber fumes. Store in paper bags and containers in special warehouses, protected from open fire.
 - personal protection measures Pressurized hermetically sealed equipment and communications, ventilation of production premises, local suck off means, automatic machinery. Sound and light signaling, indicators of dangerously explosive concentrations.
 - environmental protection Follow environmental protection recommendations: hermetically sealed equipment, prohibited sewage into natural water reservoirs.
 - decontamination/waste disposal Rubber wastes are processed. (see section 13)
 - transportation Original package, all means of transportation.

6.2. Emergency situation prevention measures

- 6.2.1. General recommendations** Isolation of dangerous zone (distance-50 m). Correction of the distance according to chemical reconnaissance reports. Withdraw people from dangerous zone. Wear protective clothing.
- 6.2.2. Spillage** Collect briquettes of rubber into a pile.
- 6.2.3. In case of fire** Call fire brigade, withdraw people from fire zone. Before arrival of fire brigade begin putting out the fire with first fire fighting measures (asbestos fabric, foam and carbon acidic fire fighters)
- 6.2.4. Personal protective equipment** Special protective clothing, breathing equipment.
- 6.2.5. Emergency situation liquidation** After liquidation, measure MAC of carbon oxides, bury the burnt rubber in an appropriate, safe place.

7. Storage and Handling Regulations

- 7.1. Safety measures** Ventilation of production premises. Hermetically sealed grounded equipment, protected from fire and explosion. Sound and light signaling.

7.2. Conditions/terms of safe storage	The rubber is packed in wooden or metal containers and stored in piles containing 3-4 palettes. The rubber packed in paper bags is stored in piles no more than 1,2 meters high. The rubber must be kept in premises at temperature max 40°C. Guaranteed storage time –1 year.
7.3. Special storage conditions and incompatible products	Aromatic solvents, chlorine derivatives. Avoid open fire.
7.4. Recommended materials for packing	Polyethylene film, paper bags, metal and wooden palettes.
7.5. Transport recommendations	Observe rules of transportation. Transport in covered means of transport, avoid heat. Rail way cars - 60 tons, Automobiles- according to capacity.

8. Personal Protection Measures
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8.1. Parameters of working zone subject to obligatory control	MAC _{prod.premises} for the rubber is not established. Production and emergency control of MAC is determined for butadiene and alpha-methyl-styrene in compliance with sanitary regulations.				
MAC _{prod.premises} , mg/m ³	<table border="0" style="margin-left: 40px;"> <tr> <td style="text-align: center;">Butadiene-1,3</td> <td style="text-align: center;">a-methyl-styrene</td> </tr> <tr> <td style="text-align: center;">100</td> <td style="text-align: center;">5</td> </tr> </table>	Butadiene-1,3	a-methyl-styrene	100	5
Butadiene-1,3	a-methyl-styrene				
100	5				
8.2. Measures of control of harmful components content	Hermetically sealed, grounded equipment and communications, good ventilation system, fire-protected machinery.				
8.3. Personal protection measures					
8.3.1. General recommendations	Strict observance of industrial hygiene and sanitary norms. Prophylactic medical examination of personnel.				
8.3.2. Respiratory protection	Not needed in normal conditions. In emergency situations and during repair works inside polymerizers use filter gas masks.				
8.3.3. Eye protection	Protective glasses.				
8.3.4. Hand protection	Protective gloves.				
8.3.5. Protective clothing	Special cotton clothing, leather boots.				

9. Physical and Chemical Properties
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Appearance	Rubber-like material. Colour depends on the antioxidant used.
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Odour of residual a-methyl-styrene	Weak.
Mooney viscosity, MB1+4 (100°C)	36-54
Solubility in water	Not soluble.
Weight losses at drying, % max	0.4
Mass content of non-polymerized a-methyl-styrene, % max	0.05

10. Stability and Reactivity

10.1. Stability	Stable
10.2. Reactivity	Oxidizing, hydrating capacity
10.3. Conditions causing hazardous changes	Burning of product
10.4. Hazardous decomposition products	Carbon oxides
10.5. Incompatibility with other products	Aromatic solvents and chlorine derivatives

11. Toxicity

11.1. Evaluation of hazard (toxicity) degree	Synthetic butadiene alpha-methyl-styrene rubber is not a hazardous product.
11.2. Acute toxicity	Not studied for the rubber.

Information on decomposition products:

Alpha-methyl –styrene	Butadiene-1,3
DL ₅₀ (mg/kg)	DL ₅₀ (mg/kg)
4900 – mice	5480 - rats
10250 -rats	
CL ₅₀ (mg/m ³)- not achieved	CL ₅₀ (mg/m ³)
	270 000 - mice
	285 000 - rats
	4501 - man

11.3. Hazards of direct contact with the product	The rubber is not irritant or toxic. Decomposition products (a-methyl-styrene) irritate eyes, skin, respiratory system.
11.4. Influence on reproductive function, carcinogenicity, cumulativeness	Not studied. Decomposition products: Butadiene –1,3 is carcinogenic (Group 2A)

12. Ecological Information

12.1. General characteristic At normal conditions the rubber does not contaminate air, water reservoirs, soil.

Alpha-methyl-styrene.
Practical perception threshold:
Odour of water –0,2 mg/l,
taste of water- 0,14 g/l.

12.2. Sanitary norms Not established for the rubber. Sanitary norms are given for products of thermal decomposition.

	Butadiene-1,3	a-methyl-styrene
MACair, mg/l	3/1	0.04
Class of danger	4	3
MACwater, mg/l	0.05	0.1
Class of danger	4	3
MACfishery, mg/l	not established	not established
Class of danger	-	-
MACsoil, mg/kg	not established	not established

12.3. Acute toxicity for water reservoirs Not studied for the rubber.
for a-methyl- styrene – not studied
for butadiene 1,3-71,5 mg/l (toxic concentration for fish)

12.4. Transformation in environment and products of transformation The rubber does not transform. At elevated temperatures may contaminate the environment.

12.5. Biodegradation Not studied for the rubber.
a-methyl-styrene- 1.57 mg 0/dm3
1.4 mg 0/dm3
3.1 mg 0/dm3
Butadiene 1.3- not studied

13. Waste Disposal

13.1. Safety measures Rubber wastes should be processed in production premises with ventilation system. The rubber that is not suitable for further processing must be buried or burned in an appropriate, safe place.

13.2. Package treatment (neutralization, possibility of re-use) Wooden containers, paper bags are used only once. Metal containers may be re-used.

14. Transport Regulations

14.1. Transport name Synthetic butadiene- alpha-methyl-styrene rubber
SKMS-30ARKM-15 or SKMS-30ARKM-15P or SBR-1500 or SBR-1502 or BSK-1500A or SBR-1712 or wastes.

14.2. Transport means Railway, automobile

14.3. Safety measures

Transportation should be effected in covered transport means according to the transport regulations. Transport marking with the signs "Keep dry", "Avoid heating".

14.4. Hazards identification

Class 9, sub-class 9.1.
Product code No.9133
Emergency Card No. 902