SUBUR TOGLIATTI LLC

SAFETY DATA SHEET


BUTYL RUBBER (IIR)

Isobutylene-Isoprene rubber

GRADES

IIR-1675; IIR-1675 grade M; IIR-351

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

1.1. Product identifier

<table>
<thead>
<tr>
<th>Name of Substance:</th>
<th>Poly (isoprene-co-isobutene)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name of IUPAC</td>
<td>2-methylprop-1-ene, polymer with 2-methylbuta-1,3-diene</td>
</tr>
<tr>
<td>Synonyms</td>
<td>isobutylen, polymer with isoprene: 1,3-Butadiene, 2-methyl-, polymer with 2-methyl-1-propene</td>
</tr>
<tr>
<td>TRADE NAMES:</td>
<td>Synthetic Butyl Rubber (IIR)</td>
</tr>
<tr>
<td>PRODUCT NAME, GRADES</td>
<td>IIR-1675</td>
</tr>
<tr>
<td></td>
<td>IIR-1675 grade M</td>
</tr>
<tr>
<td></td>
<td>IIR-351</td>
</tr>
<tr>
<td>Registration #: for isoprene</td>
<td>01-2119457891-29-0001</td>
</tr>
<tr>
<td>(CAS #78-79-5; EC #201-143-3)</td>
<td></td>
</tr>
<tr>
<td>Index No(CL):</td>
<td>601-014-00-5</td>
</tr>
<tr>
<td>Registration #: for 2-methylpropene-1</td>
<td>01-2119456616-32-0006</td>
</tr>
<tr>
<td>(CAS #115-11-7; EC #204-066-3)</td>
<td></td>
</tr>
<tr>
<td>Index No(CL):</td>
<td>601-012-00-4</td>
</tr>
</tbody>
</table>

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 ≥ 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 2 or toxic to reproduction category 1A, 1B and 2, skin sensitizer category 1, respiratory sensitizer 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.
1.2. Relevant identified uses of the substance
Most common technical function of synthetic butyl rubber: tyre production, technical rubber parts (profiles, hoses, shoe soles, belt production, technical rubber goods), rubber compound, medical production.

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: didier.lebout@gazprom-mt.com

Supplier
Company name: SIBUR Togliatti LLC
Address: Novozavodskaya str. 8, 445007, Togliatti, Samara Region, Russian Federation
Phone: +7 8482 29-91-51; 23-11-04; 29-32-69
Fax: +7 8482 22-14-41; 70-15-18
Email Address: office@tltk.sibur.ru
Emergency phone: +7 8482 36-91-51 (round the clock)

1.4. 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
2.1. Classification of the substance or mixture
2.1.1. Classification according to Regulation (EC) No 1272/2008 (CLP/GHS)
Not classified as a hazardous substance.

2.2. Label elements
2.2.1. 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 to high temperatures. Combustible solid. Products of thermal decomposition – toxic.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS
According to CLP Regulation the product is a mixture of Polymer and Additives. This product is a synthetic rubber, consisting of at least 98.0% co-polymer from isoprene and isobutene (with 1.7-1.9% bound isoprene), calcium distearate (CAS#1592-23-0/ EC#216-472-8),
antioxidants (CAS#68610-06-0 /EC#271-847-3 or CAS#128-37-0 /EC#204-881-4 or CAS#119-47-1/ EC# 204-327-1 or CAS#6683-19-8/ EC#229-722-6).

Formula: \[(C_4H_8)_m \ (C_4H_8)_n \ CH_3 \ (\ -C_H_2 - C - CH_2 - C = CH - CH_2 - )_n \ CH_3 \ CH_3\]

<table>
<thead>
<tr>
<th>Component</th>
<th>Conc. %</th>
<th>CAS / EC #</th>
<th>Classification EC#1272/2008 (CLP)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Poly (isoprene-co-isobutene)</td>
<td>≥98.0</td>
<td>9010-85-9/ none</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 1272/2008 (CLP) in the concentration ranges specified.

**SECTION 4: FIRST-AID MEASURES**

4.1. **Description of first aid measures**

**General information:** Spontaneous penetration of Butyl Rubber into human organism is impossible. Thermal destruction may occur at high temperatures producing isobutylene and isoprene. Butyl Rubber at normal conditions is non-volatile, causes no exhaustive effects. Inhalational poisoning is not probable. Contact with eyes may cause mechanical damage, irritation and conjunctivitis were not observed. Contact with skin causes no irritation. If the product has a high temperature, contact with skin causes burn.

**Following inhalation:** If decomposition or thermal destruction products are inhaled:

Move an exposed person to fresh air at once. Keep warm and at rest. If there is a respiratory distress give oxygen. If respiration stops or shows signs of failing, apply artificial respiration. Get medical attention.

**Following ingestion:** In case of accidental swallowing:

Rubber particles in case of accidental penetration of the airways may cause mechanical irritation of respiratory tract, cough. In this case the following actions are to be taken. Wash the mouth with water and give plenty of water to drink, provided the 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.

**Following skin contact:** 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.

**Following eye contact:** Rinse immediately eye with plenty of low pressure water for at least 15 minutes. Remove contact lenses. Get medical attention.

**SECTION 5: FIRE-FIGHTING MEASURES**

5.1. **Extinguishing media**

The substance is flammable. Use foam, dry chemical, carbon dioxide, or water spray.
5.2. Special hazards arising from the substance or mixture
Keep away from sources of ignition - no smoking.
Combustion generates irritating and toxic fumes.
Burning causes emission of carbon dioxide and oxygen.

5.3. Advice for firefighters
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, protective equipment and emergency procedures
See section 8.

6.2. Environmental precautions
Take precautionary measures against discharges into the environment.

6.3. Methods and materials for containment and cleaning up
Sweep spilled substance into containers. Avoid generating dusty conditions and provide ventilation. All equipment must be grounded.

SECTION 7: HANDLING AND STORAGE
7.1. Precautions for safe handling
Observe fire safety rules.
Use extract and input ventilation.
Use antistatic and intrinsically safe equipment.
Assure air tightness of equipment and communications.
Avoid inhaling vapours and fumes from hot rubber.
Use extract and input ventilation.
Use PPE if necessary.
Wash thoroughly after handling.
Avoid contact with eyes and skin.
Do not ingest or inhale.
Minimise dust generation and accumulation.
Remove all sources of ignition.
All equipment must be grounded.

7.2. Conditions for safe storage, including any incompatibilities
Store in a cool, dry, well-ventilated area away from direct sunlight and incompatible substances in a closed container.
Keep away from source of open fire.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION
8.1. Exposure limits
None listed.

8.2. Protective equipment
Protective gloves, safety goggles and protective clothing.
Respiratory Protection: Wear positive pressure self-contained breathing apparatus if warranted by workplace conditions.

Skin protection (hand and body): Wear approved protective gloves.

Eye/face protection: Wear approved safety goggles. Wear protective clothing. Wash at the end of each work shift and before eating, drinking, smoking or using the toilet.

### SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

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

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appearance</td>
<td>elastic solid (briquette)</td>
</tr>
<tr>
<td>Odour</td>
<td>peculiar</td>
</tr>
<tr>
<td>Colour</td>
<td>white to yellow</td>
</tr>
<tr>
<td>pH value</td>
<td>not applicable, insoluble in water</td>
</tr>
<tr>
<td>Ignition temperature (°C)</td>
<td>310 ± 15</td>
</tr>
<tr>
<td>Auto-ignition temperature (°C)</td>
<td>425 ± 15</td>
</tr>
<tr>
<td>Specific Gravity (g/cm³)</td>
<td>0.91-0.92</td>
</tr>
<tr>
<td>Solubility</td>
<td>insoluble in water and fats, soluble in aromatic solvent</td>
</tr>
<tr>
<td>Explosive properties</td>
<td>non explosive</td>
</tr>
<tr>
<td>Mooney Viscosity UML 1+8 (at 125°C)</td>
<td>46 – 56 (IIR-1675, IIR-351) 35 – 47 (IIR-1675 grade M)</td>
</tr>
<tr>
<td>Granulometry</td>
<td>not applicable, substance is not marketed or used in granular form</td>
</tr>
</tbody>
</table>

#### 9.2. Other information

None.

### SECTION 10: STABILITY AND REACTIVITY

#### 10.1. Reactivity

Lack of antioxidant causes oxidation and thermal destruction.

#### 10.2. Chemical stability

The rubber is stable provided there is the antioxidant and the storage conditions are followed. High temperatures cause thermal destruction with emissions of isobutylene and isoprene.

#### 10.3. Materials to avoid

Strong oxidising agents.

#### 10.4. Conditions to avoid

Avoid high temperatures, naked flames, sparks, long term exposure to direct sunlight, contact with incompatible materials.

#### 10.5. Hazardous decomposition products

Hazardous substances of thermal destruction: spirits, aldehydes, ketones, acids (C₁-C₄), carbon oxides.
SECTION 11: TOXICOLOGICAL INFORMATION

**General:** LD₅₀ (oral, rats): 10 000 mg/kg (Russian Register of Potentially Hazardous Chemical and Biological Substances /FBEPH).

**Inhalation:** Poly (isoprene-co-isobutene) has no local irritating effect on the gastrointestinal tract when inhaled, conjunctiva, skin-resorptive and sensitizing effect.

**Ingestion:** Not applicable.

**Skin contact:** There is no irritant effect on skin.

**Eye contact:** There is no irritant effect on eyes.

SECTION 12: ECOLOGICAL INFORMATION

**12.1. Ecotoxicity**
The product is poorly biodegradable but does not pose a hazard to the environment.

**12.2. 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.

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

**REGULATORY**
Chemical Safety Report has been performed for monomers: isoprene (CAS #78-79-5; EC #201-143-3) and 2-methylpropene-1 (CAS #115-11-7; EC #204-066-3).

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>16/03/2010</td>
<td></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>1.1, 2</td>
<td>Section 1.1, 2 was updated</td>
</tr>
<tr>
<td>Version: 2.1</td>
<td>23/12/2011</td>
<td>1.1; 3; 4; 5; 7; 9; 10; 11; 15; 16</td>
<td>1 Product name BK-1675N was renamed into IIR-1675 accordingly. 2. Section 1.1 was added. 3. DISCLAIMER was added on the first page 5. “Specific hazard” subsection was fully updated in Sections 5.</td>
</tr>
</tbody>
</table>
**16.2. Abbreviations and acronyms**

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>LD50</td>
<td>Lethal Dose to 50% of a test population (Median Lethal Dose)</td>
</tr>
<tr>
<td>LC50</td>
<td>Lethal Concentration to 50% of a test population</td>
</tr>
<tr>
<td>PBT</td>
<td>Persistent, bioaccumulative, toxic chemical</td>
</tr>
<tr>
<td>vPvB</td>
<td>Very Persistent, Very Bioaccumulative</td>
</tr>
<tr>
<td>UN</td>
<td>United Nations</td>
</tr>
<tr>
<td>WGK</td>
<td>Wassergefährdungsklasse (German: Water Hazard Class)</td>
</tr>
</tbody>
</table>

**16.3. Key literature references and sources**

**EU DIRECTIVES**


**NATIONAL REGULATIONS (GERMANY)**
Major Accident Hazard Legislation 82/501/EWG.
Russian Register of Potentially Hazardous Chemical and Biological Substances (FBEPH).

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