



MATERIAL SAFETY DATA SHEET

NITRILE BUTADIENE RUBBER

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

1.1 Product identifier

Name of Substance	Poly(acrylonitrile-co-butadiene) Butadiene-acrylonitrile copolymer
Name of IUPAC	Poly(prop-2-enenitrile -co-buta-1.3-diene)
Synonyms	Butadiene-acrylonitrile rubber
PRODUCT NAME, GRADES	NBR
TRADE NAMES:	NITRILE BUTADIENE RUBBER (NBR)
Registration #	-
for 1.3-butadiene (CAS #106-99-0; EC #203-450-8) Index No(CLP): 601-013-00-X	01-2119471988-16-0034
for acrylonitrile (CAS #107-13-1; EC #203-466-5) Index No(CLP): 608-003-00-4	01-2119474195-34-0017

1.2 RELEVANT IDENTIFIED USES OF THE SUBSTANCE

Most common technical function of NBR: production of technical rubber parts/technical rubber goods

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; or - 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 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.



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

The product has not been classified as dangerous chemical preparation.

Specific hazard:

No significant health hazard in normal industrial use conditions.

Under normal industrial use conditions the product causes no acute respiratory intoxication.

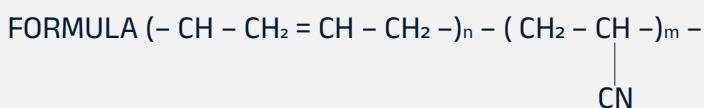
The product contains no volatile components, emits no volatile substances during processing.

Combustible substance.

Combustion and thermal destruction may cause emission of substances toxic for human health. Contact of melted/heated product may cause thermal burns.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

This product is a synthetic rubber, consisting of at least 95% poly (acrylonitrile-co-butadiene), 0.45- 0.65% antioxidants (CAS#128-37-0 /EC#204-881-4 or CAS#119-47-1 / EC# 204-327-1); 3.0-3.5% fatty acids, C₁₄₋₁₈ and C₁₆₋₁₈-unsatd., magnesium salts (CAS #67762-32-7/ EC#267-010-7).





NAME	EC #	CAS #	CONTENT	CLASSIFICATION EC# 67/548/EEC AND EC#1272/2008 (CLP)
poly (acrylonitrile-co-butadiene)	none	9003-18-3	≥ 95.0%	none

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

Spontaneous penetration of Butadiene-acrylonitrile rubber into human organism is impossible.

Inhalation:

Move an 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:

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:

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

Specific hazards:

Combustible substance. Ignited by naked flame. Burns with emission of dense black smoke and toxic gases. Burning and thermal destruction may cause emissions of toxic substances hazardous for human

health: carbon and nitrogen oxides, hydrogen cyanide, soot.

Extinguishing media:

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



Special fire fighting procedures:

Keep away from sources of ignition - no smoking.

Unusual fire & explosion hazards:

None.

Protective measures in 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.

Environmental precautions:

Take precautionary measures against discharges into the environment.

Spill clean up methods:

Sweep spilled substance into containers. Avoid generating dusty conditions and provide ventilation. All equipment must be grounded.

SECTION 7. HANDLING AND STORAGE

Usage precaution:

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.

Storage precautions:

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

Exposure limits:

None listed.

Protective equipment:

Protective gloves, safety goggles and protective clothing.

Respiratory equipment:

Wear positive pressure self-contained breathing apparatus if warranted by workplace conditions.



Hand protection:

Wear approved protective gloves.

Eye protection:

Wear approved safety goggles.

Hygiene measures:

Wash at the end of each work shift and before eating, drinking, smoking or using the toilet.

Skin protection:

Wear protective clothing.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Physical state at 20°C and 1013 hPa	elastic solid
Odour	peculiar
Colour	light yellow to brown
pH value	not applicable, insoluble
Melting point	211-398 °C
Flash point	224.8-350 °C
Ignition temperature	269-454 °C
Auto-ignition temperature	313-514 °C
Decomposition temperature	≈ 430 °C
Relative density	0.94- 1.0 g/cm ³
Solubility	insoluble in water and fats. soluble in ketones, ethyl acetate, chloroform
Viscosity according to Muni	30-120 conv.units (at 100°C)
Explosive properties	non explosive
Granulometry	not applicable substance is not marketed or used in granular form.



SECTION 10. STABILITY AND REACTIVITY

Chemical stability:

Stable under recommended storage and handling conditions.

Reactivity: undergoes oxidation, chloration, hydrogenation vulcanization.

If heated over 150°C gets solid quickly.

Texturized during oxidation.

At ≈ 430 °C decomposed emitting hydrogen cyanide.

Conditions to avoid:

Avoid high temperatures. Avoid naked flame. Avoid long term exposure of direct sun beams. Avoid contact with incompatible substances.

Hazardous decomposition products:

Products of combustion and thermal destruction: carbon monoxide, carbon dioxide, hydrogen cyanide nitrous oxides, soot.

SECTION 11. TOXICOLOGICAL INFORMATION

General:

LD 50 (oral, mice, rats): > 10 000 mg/kg (Russian Register of Potentially Hazardous Chemical and Biological Substances /FBEPH).

Inhalation:

Poly(acrylonitrile-co-butadiene) has no local irritating effect on the gastrointestinal tract when inhaled.

Ingestion:

Not applicable.

Skin contact:

There is no irritant effect on skin.

There is no skin-resobtive and sensitizing effect on skin.

Eye contact:

There is no irritant effect on eyes.



SECTION 12. ECOLOGICAL INFORMATION

Aquatic toxicity:

Russian Register of Potentially Hazardous Chemical and Biological Substances

/FBEPH:

LC50 (96 h): >100 mg/L (Oncorhynchus mykiss)

LC50 (48 h): >100 mg/L (Daphnia Magna)

LC50 (48 h): >100 mg/L (Scenedesmus quadricauda)

Ecotoxicity:

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

Water hazard classification:

According to the German VwVwS: 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.

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: 1.3-butadiene (CAS #106-99-0; EC #203-450-8) and acrylonitrile (CAS #107-13-1; EC #203-466-5).



SECTION 16. OTHER INFORMATION

16.1 Indication of changes

VERSION	DATE OF CHANGE	SECTION	DESCRIPTION OF CHANGES
Version: 1.0	22/03/2010		First edition created according to recommendations of Regulations (EC) #1907/2006 (Article 31.1).
Version: 2.0	07/02/2011	1.1, 2	Section 1.1, 2 was updated
Version: 2.1	19/12/2011	1.1; 1.2; 2; 3; 5; 9; 10; 11; 12; 15; 16	1. Product name SKN and grade's names were renamed into NBR. 2. Index No (CLP) was added to Section 1.1 3. Name of IUPAC was changed in Section 1.1 4. DISCLAIMER was added on the second page 5. Specific hazard subsection was fully updated in Sections 2 and 5. 6. LD 50 was added in Section 11. 7. LC50 was added in Section 12. 8. Sections 1.2, 3, 9, 10; 15, 16 were fully updated.

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 43.2 In case of fire use water or powder mixtures
- S 47 Keep at temperature not exceeding 30°C

16.3 Abbreviations and acronyms

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



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