

**Section-1 IDENTIFICATION OF THE SUBSTANCE/MIXTURE
AND OF THE COMPANY/UNDERTAKING**

1.1 Identification of the substance/mixture:

Commercial name: IMPRAMER Brominated Butyl Rubber

Chemical name: Brominated Poly (isoprene-co-isobutene)

Synonyms: Brominated Isobutylene/ isoprene copolymer;

1.2 Use of the substance /mixture: Most common technical function of synthetic bromobutyl rubber: tyre production, technical rubber parts (profiles, hoses, shoe soles, belt production, technical rubber goods), rubber compound, medical production.

1.3 MANUFACTURER & SUPPLIER: Reliance Sibur Elastomers Private Limited

Emergency Coordination Centre contact details:

Jamnagar Mfg. Division Village kanalus, Taluka Lalpur, Dist. Jamnagar, Gujarat Pin: 361140	SSM Office:	+91288 4034550
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SSM: Site Shift Manager

Section 2 – HAZARD IDENTIFICATION

2.1 Classification of the substance/mixture: Hazard class and category code.

GHS Category:

Health	Environmental	Physical
None	None	Flammable Category – Not Classified

Data reference: Official Journal of the European Union regarding EU GHS

GHS Category table for reference:

Study/hazard statement	Category 1	Category 2	Category 3	Category 4	Category 5
Acute Oral LD50	≤ 5 mg/kg Fatal if swallowed	> 5 ≤ 50 mg/kg Fatal if swallowed	> 50 ≤ 300 mg/kg Toxic if swallowed	> 300 ≤ 2000 mg/kg Harmful if swallowed	> 2000 ≤ 5000mg/kg May be harmful if swallowed
Acute Dermal LD50	≤ 50 mg/kg Fatal in contact with skin	> 50 ≤ 200 mg/kg Fatal in contact with skin	> 200 ≤ 1000 mg/kg Toxic in contact with skin	> 1000 ≤ 2000 mg/kg Harmful in contact with skin	> 2000 ≤ 5000 mg/kg May be harmful in contact with skin
Acute Inhalation Dust LC50 Gases LC50 Vapours LC50	≤ 0.05 mg/L ≤ 100 ppm/V ≤ 0.5 mg/L Fatal if inhaled	> 0.05 ≤ 0.5 mg/L > 100 ≤ 500 ppm/V > 0.5 ≤ 2.0 mg/L Fatal if inhaled	> 0.5 ≤ 1.0 mg/L > 500 ≤ 2500 ppm/V > 2.0 ≤ 10 mg/L Toxic if inhaled	> 1.0 ≤ 5 mg/L > 2500 ≤ 20000 ppm/V > 10 ≤ 20 mg/L Harmful if inhaled	See footnote below this table
Flammable liquids	Flash point < 23 degrees C and initial boiling point ≤ 35 degrees C. Extremely flammable liquid and vapour	Flash point < 23 degrees C and initial boiling point > 35 degrees C. Highly flammable liquid and vapour	Flash point ≥ 23 degrees C ≤ 60 degrees C. Flammable liquid and vapour	Flash point > 60 degrees C ≤ 93 degrees C. Combustible liquid	Not Applicable

Note: Gases concentration are expressed in parts per million per volume (ppmV).

NOTE 1: Category 5 is for mixtures which are of relatively low acute toxicity but which under certain circumstances may pose a hazard to vulnerable populations. These mixtures are anticipated to have an oral or dermal LD50 value in the range of 2000-5000 mg/kg bodyweight or equivalent dose for other routes of exposure. In light of animal welfare considerations, testing in animals in Category 5 ranges is discouraged and should only be considered when there is a strong likelihood that results of such testing would have a direct relevance for protecting human health.

NOTE 2: These values are designed to be used in the calculation of the ATE for classification of a mixture based on its

ingredients and do not represent test results. The values are conservatively set at the lower end of the range of Categories 1 and 2, and at a point approximately 1/10th from the lower end of the range for Categories 3 – 5.

GHS Category table for reference: Continued

Study/hazard statement	Category 1	Category 2	Category 3
Eye Irritation	Effects on the cornea, iris or conjunctiva that are not expected to reverse or that have not fully reversed within 21 days. Causes severe eye damage.	2A: Effects on the cornea, iris or conjunctiva that fully reverse within 21 days. Causes severe eye irritation. 2B : Effects on the cornea, iris or conjunctiva that fully reverse within 7 days. Causes eye irritation.	Not applicable
Skin Irritation	Destruction of skin tissue, with sub categorization based on exposure of up to 3 minutes (A), 1 hour (B), or 4 hours (C). Causes severe skin burns and eye damage.	Mean value of $\geq 2.3 > 4.0$ for erythema / eschar or edema in at least 2 of 3 tested animals from gradings at 24, 48, and 72 hours (or on 3 consecutive days after onset if reactions are delayed); inflammation that persists to end of the (normally 14-day) observation period. Causes skin irritation.	Mean value of $\geq 1.5 < 2.3$ for erythema / eschar or edema in at least 2 of 3 tested animals from gradings at 24, 48, and 72 hours (or on 3 consecutive days after onset if reactions are delayed). Causes mild skin irritation.
Environment: Acute Toxicity Category	96 hr LC ₅₀ (fish) ≤ 1 mg/L 48 hr EC ₅₀ (crustacea) ≤ 1 mg/L, 72/96 hr ErC ₅₀ (aquatic plants) ≤ 1 mg/L Very toxic to aquatic life	96 hr LC ₅₀ (fish) $> 1 \leq 10$ mg/L 48 hr EC ₅₀ (crustacea) $> 1 \leq 10$ mg/L 72/96 hr ErC ₅₀ (aquatic plants) $> 1 \leq 10$ mg/L Toxic to aquatic life	96 hr LC ₅₀ (fish) $> 10 \leq 100$ mg/L 48 hr EC ₅₀ (crustacea) $> 10 \leq 100$ mg/L 72/96 hr ErC ₅₀ (aquatic plants) $> 10 \leq 100$ mg/L Harmful to aquatic life
Flammable Aerosol	Extremely flammable aerosol	Flammable aerosol	Not Applicable
Flammable solids	Using the burning rate test, substances or mixtures other than metal powders: (a) wetted zone does not stop fire and (b) burning time < 45 seconds or burning rate > 2.2 mm/second Using the burning rate test, metal powders that have burning time ≤ 5 minutes Flammable solid	Using the burning rate test, substances or mixtures other than metal powders: (a) wetted zone does not stop fire for at least 4 minutes and (b) burning time < 45 seconds or burning rate > 2.2 mm/second Using the burning rate test, metal powders that have burning time $> 5 \leq 10$ minutes Flammable solid	Not Applicable
Flammable gases	Gases, which at 20 degrees C and a standard pressure of 101.3 kPa: (a) are ignitable when in a mixture of 13% or less by volume in air; or (b) have a flammable range with air of at least 12 percentage points regardless of the lower flammable limit. Extremely flammable gas	Gases, other than those of category 1, which, at 20 degrees C and a standard pressure of 101.3 kPa, have a flammable range while mixed in air. Flammable gas	Not Applicable

GHS Label: None

Signal word: None

Details of statements:

Hazard Statements	None
Precautionary Statement Prevention	None
Precautionary Statement Response	None
Precautionary Statement Storage	None
Precautionary Statement Disposal	Follow local regulation

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.

2.2 Information pertaining to particular dangers for human: The preparation is not hazardous in the form in which it is placed on the market and under the normal and recommended conditions of storage and use.

2.3 Information pertaining to particular dangers for the environment: The preparation is stable under normal conditions of storage and use. It is not hazardous to the environment in its normal state.

2.4 Other adverse effects: 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.

Route of entry:

Skin Contact	Skin Absorption	Eye Contact	Inhalation	Ingestion
No	No	Yes	Yes	Yes

DATA REFERENCE: Licensor's Data

Health hazards:

Source	Directive 2005/69/CE and Annex XVII Reg. CE 1907/2006 (REACH)
Carcinogenicity	None

DATA REFERENCE: Licensor's Data

Section 3 – COMPOSITION & INFORMATION ON INGREDIENTS

Ingredients / Hazardous	CAS No.	Percentage
Brominated copolymer of 2-methyl-1-propene and 2-methyl-1,3-butadiene	68441-14-5	95 – 98 %
Fatty acids, C14-18 and C16-18- unsaturated Calcium salts	68424-16-8	1 – 3 %
Epoxidized Soyabean Oil	8013-07-8	1 – 2 %

Data reference: Licensor's Data

Section 4 – FIRST AID MEASURES

4.1 General advice: No special measures required.

IMMEDIATE MEDICAL ATTENTION IS REQUIRED AFTER INHALATION OR AFTER SWALLOWING.

Spontaneous penetration of Brominated Butyl Rubber into human organism is impossible.

Thermal destruction may occur at high temperatures producing isobutylene and isoprene. Brominated 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.

4.2 Inhalation

Remove the person from the exposed area to fresh air immediately. Seek medical advice immediately if adverse symptoms will appear.

4.3 Skin contact

Wash with plenty of soap and water. Get medical attention if symptoms occur. Get medical attention if thermal burns occur. Wash clothing before reuse. Clean shoes thoroughly before reuse.

4.4 Eye contact

Remove contact lenses if used and irrigate exposed eyes with large amount water for at least 15 minutes. Keep eyelids open with the finger. Seek medical advice.

4.5 Swallowing

If swallowed wash mouth with water provided person is conscious. Do not induce vomiting. If vomiting occurs, lean patient forward or place on the left side (head-down position, if possible) to maintain an open airway and prevent aspiration. Seek medical advice immediately.

Specific and immediate treatment means to be available at the workplace: Eye wash fountain.

Section 5 – FIRE FIGHTING MEASURES

5.1 Suitable extinguishing media:

Water in the form of spray is the best media to extinguish. However, foam or dry chemical can also be used.

5.2 Extinguishing media to be avoided:

Not Applicable

5.3 Caution about specific danger in case of fire and fire-fighting procedures:

When burning, it emits carbon monoxide, carbon dioxide, hydrogen bromide and irritant fumes. Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.

5.4 Special protective equipment for fire-fighters:

Wear self-contained breathing apparatus and full protective fire-resistant clothing.

Section 6 –ACCIDENTAL RELEASE MEASURES

6.1 Person-related safety precautions:

Use personal protective equipment. Remove all sources of ignition. Avoid breathing vapors, mist, or gas. Avoid skin and eye contact. Use appropriate safety equipment. See section 8 for information on personal protective equipment.

6.2 Precautions for protection of the environment:

Keep fines away from drains. Do not release into the environment.

6.3 Recommended methods for cleaning and disposal:

Collect mechanically. Avoid generating dusty conditions and provide ventilation. All equipment must be grounded. Reuse if possible or dispose off as required by national and local regulations.

Section 7 – HANDLING AND STORAGE

7.1 Information for safe handling:

Observe fire safety rules. Use antistatic and intrinsically safe equipment. 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 Information for storage:

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.

7.3 Information for specific use:

Not Applicable.

Section 8 – EXPOSURE CONTROL & PERSONAL PROTECTION

8.1 Occupational Exposure Limits:

None listed.

8.2 Occupational exposure controls:

Traces of monomers and others volatile substances may be given off during processing, particularly at unusually high processing temperatures.

Work rooms must be provided with adequate ventilation and exhaust equipment to collect fines and gas/vapour that may be emitted during the conversion.

Equipment to provide adequate and personal protection:

Respiratory protection:

In normal conditions nose masks should be available to be used when requested.

Eye protection:

Use safety goggles.

Hand protection:

Chemical substances resistant gloves.

Body protection: Standard work clothes.

Hygiene Measures: No smoking, eating or drinking in the workplace.

Wash hands thoroughly before eating, drinking.

8.3 Environmental exposure controls:

Proceed in accordance with valid air and water legislative regulations.

Engineering measures: Provide adequate ventilation in the area

Section 9 – PHYSICAL AND CHEMICAL PROPERTIES

Appearance: Physical state at 23°C	Elastic solid
: Form	Bales
: Colour	White to yellow
Odour	Peculiar
Density	0.92-0.93 g/cm ³
Bulk Density	Not Applicable
Softening temperature	Not Applicable
Auto flammability (°C)	>210
Solubility in water	Insoluble

DATA REFERENCE: Licensor's data

Section 10 –CHEMICAL STABILITY AND REACTIVITY INFORMATION

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

10.1 Conditions to avoid: Avoid high temperatures, naked flames, sparks, long-term exposure to direct sunlight, contact with incompatible materials.

10.2 Possibility of hazardous reactions: No dangerous reactions known.

10.3 Material to avoid: Avoid the contact with oxidizing substances.

AIR AND WATER REACTIONS: Not Applicable

REACTIVE GROUPS: Not Applicable

10.4 Hazardous decomposition products: Hazardous substances of thermal destruction: carbon oxides, hydrogen bromide.

Section 11 –TOXICOLOGICAL INFORMATION

Specific information on the preparation is not available in the literature. Residual monomers are present in the product at trace level, hindered in the elastomer matrix and therefore not available in normal conditions.

11.1 Dangerous effects from exposure to the preparation:

The possible fines may cause irritation to the eyes and/or respiratory organs.

Product has no local irritating effect on the gastrointestinal tract when inhaled, conjunctiva, skin-resorptive and sensitizing effect.

Data Reference: Licensor's data

11.2 Repeated dose toxicity: Not Available

11.3 Sensitisation : Not Available

11.4 CMR effects (carcinogenicity, mutagenicity, toxicity for reproduction): no evidence of these effects has been reported for the preparation.

11.5 Toxicokinetics, metabolism, distribution: Not Applicable

Section 12 –ECOLOGICAL INFORMATION

12.1 Ecotoxicity data: No further relevant information available.

12.2 Aquatic Toxicity: No further relevant information available.

12.3 Persistence and degradability: The product is poorly biodegradable.

12.4 Bio accumulative potential: NA

12.5 Mobility in Soil: NA.

12.6 Results of PBT and vPvB assessment Persistence and Degradation: Not applicable.

12.7 Other adverse effects: No further relevant information available.

Environmental Fate: Not applicable

Section 13– DISPOSAL CONSIDERATION

Local Legislation: Disposal should be in accordance with applicable regional, national, and local laws and regulations. This product should not be dumped, spilled, rinsed or washed into sewers or public waterways.

For the handling of the residues the same safety advices given for the preparation are to be applied.

13.1 Recommended disposal methods for the substance / mixture

Appropriate methods of disposal of preparation: Residues should be disposed of as required by national and local regulations.

13.2 Recommendation: Disposal must be made according to local regulations.

13.3 Recommended cleansing agents: Water, if necessary, together with cleansing agents.

13.4 Waste regulation: Follow local regulation.

Section 14– TRANSPORT INFORMATION

International Transport Regulation:

ADR/RID (Road/Rail), IMDG (Sea) and ICAO/IATA (Air) The preparation is not classified as dangerous for the transport according to the following regulations: ADR/RID, IMO, IATA.

14.1

Proper Shipping Name: Not Defined

Hazard Class: Not Defined

UN Number : Not Defined

Emergency Action Code : Not Defined

14.2 Special transport precautionary measures: None

Section 15– REGULATORY INFORMATION

MSDS format on a 16 Section based on guidance provided in:

Indian Regulation:

Manufacture, Storage and Import of Hazardous Chemicals Rule, 1989.
The Factories Act 1948

International Regulations:

European SDS Directive

ANSI MSDS Standard

ISO 11014-1 1994

WHMIS Requirements

United States

Hazard Communication Standard

Canada

Hazardous Products Act and Controlled Products Regulations

Europe

Dangerous Substance and Preparations Directives

Australia

National Model Regulations for the Control of Workplace Hazardous Substances

The Globally Harmonized System of Classification and Labeling of Chemicals endorsed by The UN Economic and Social Council

*RISK PHRASES: R phrases: None
*SAFETY PHRASES: None
*These standard risk and safety phrases for use when interpreting (Material) Safety data Sheets are derived from the European Union Regulation, CHIP Regulations - Chemicals (Hazard Information and Packaging for Supply). They are required to be used in (Material) Safety Data Sheets to identify potential hazards and offer safe handling advice.

Section 16 – OTHER INFORMATION

Training instructions
Personnel handling the product has to be acquainted demonstrably with its hazardous properties, with health and environmental protection principles related to the product and first aid principles.
Tremcard details/Reference: Refer Section 14
Local bodies involved (Applicable only with in India): Local District Authority and Local Crisis Group
Sources of data used to compile the (Material) Safety Data Sheet

Data compilation reference: Licensor's Data

(M)SDS Revision Status:

Date of Revision	Revised Sections	Supersedes
02 nd Nov 2020	None (First Issue)	None

This (M)SDS is issued by Reliance Sibur Elastomers Private Limited

Contact Details: For any enquiry/comment regarding this (Material) Safety Data Sheet, kindly contact the Safety & Operational Risk at HSE.ExcellenceCentre@ril.com

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