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MATERIAL SAFETY DATA SHEET

CHLOROBUTYL RUBBER (CIIR)

MATERIAL AND COMPANY INFORMATION

Trade name	Chloro Butyl Rubber
Chemical name (IUPAC)	Polymer of 2-methylprop-1-en with 2-methylbutid-1,3-iene chlorinated

COMPOSITION OF PRODUCT

Chemical characterization	Chloro Butyl Rubber
Molecular formula	$((C_4H_8)_m (C_5H_8Cl)_n)_x$
Structural formula	$\left[\begin{array}{c} [CH_2=C(CH_3)_2]_m \\ [CH_2=C-CH=CH_2 Cl]_n \end{array} \right]_x$ CH ₃
Physical state	Solid substance
Color	Light yellow
Odor	None
Identification number CAS - Nº	None

HAZARDOUS EFFECT

Impact on human health	Moderately hazardous substance. Poisoning by getting inside the human organism is unlikely
Eye contact	For open systems, where eye contact most likely, particles may injure eyes and cause mechanical irritation.
Skin contact	Not dangerous under normal industrial usage Contact with hot product could result in thermal burns.
Hygienic requirements	Hazard class – 4 Assignment of hygienic requirements is not required due to its physiochemical properties and low toxicity.

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FIRST AID

Inhalation	Under normal industrial usage the product is not dangerous. In case of fire the the victim suffered suffocation should be taken to fresh air.In case of asphexia an artificial “ mouth to mouth” respiration should be performed. Call a physician if necessary.
Skin contact	When contacting with hot product wash skin with plenty of cold water.Apply clean gauze bandage or cotton bandage.Consult a physician if necessary.
Eye contact	This is a hard inert product.If it gets into the eye (during rubber fragmentation) it should be removed by some clean object. Consult a physician if necessary.
Ingestion	If rubber crumbs are ingested, rinse the mouth with water and drink a glass of water.

FIRE AND EXPLOSION SAFETY MEASURES

Fire-explosion hazard	Explosion-proof product.Combustible product.
Fire- extinguishing means	Water, foam, dry powder, CO2
Inhibitory fire- extinguishing means	Not established
Thermal decomposition products	Carbon oxides

MEASURES FOR REMOVAL ACCIDENTALLY SPILLED AND SCATTERED PRODUCT

The product is solid and has no flow properties.Collect the product and put it in appropriate containers for disposal or reuse.

STORAGE AND HANDLING PROCEDURE

No special safety measures or means are required for finished product. Production areas should be equipped with induced and forced draft ventilation.

Storage	The product is stored in a closed area far from fire sources, direct sunshine and atmospheric precipitation. The temperature inside the building should not exceed 30°C. Storage with oxidizers, acids and alkalies shall not be allowed.
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**SAFETY PRECAUTIONS**

When using this product working area should be equipped with combined plenum-exhaust ventilation and fire- extinguishing means.

Personal safety measurement and means

Hand protection	Rubber gloves,if the product is hot- thermalproof gloves
Eye protection	Not required
Respiratory organs protection	At normal working conditions personal safety means are not required, at emergency situation – filter gas mask, Model A, BKF
Protective clothing	Overalls, type 3 (GOST 12.4. 103) shall be in accordance with typical branch standards

PHYSICAL AND CHEMICAL PROPERTIES

Product property	
Aggregative state	Solid
Color	Light yellow
Odor	None
Fire risk and other properties	
Molecular weight	$[[56]m + [103,5]n]x$
Density at 20 °C	0,9 g/m ³
Chemical reactivity	Oxidized if an antioxidant is not present
Solubility	Not soluble in water. Good solubility in fat series hydrocarbons, more difficult – in aromatic hydrocarbons
Flash point in open crucible	230 °C
Ignition temperature	270 °C
Selfignition temperature	412 °C



STABILITY AND CHEMICAL ACTIVITY

Stability	Highly stable
Thermal decomposition products	CO, chlorhydrogen (in small amount)

TOXICITY

Toxicity	DL ₅₀ >5000 mg/kg, rats
Acute toxicity	CL ₅₀ – not attainable
Cumulative	Weak
Clinical picture of acute intoxication	Acute intoxication cases are not described
Dermal – resorption action	None
Sensibilizing effect	Not examined
Embryotropic action	Not examined
Gonadotropic action	Not examined
Teratogenic action	Not examined
Mutagenic action	Not examined
Cancerogenic action	Not examined

ENVIRONMENTAL EFFECT

Biological dissimulation	Data not available
MAC in water	0,25 mg/dm ³
Environmental	Transformed
Transformation products	Data are not available



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DISPOSAL OF WASTES

Unused product wastes shall be incinerated in special areas in accordance with local codes..

TRANSPORTATION REGULATIONS

Transportation of the product shall be accomplished by any kind of transport inside the covered transport facility. Hazard class 9.

Special marking:

S-designation:

S 15

Keep out of reach of heat sources

