Rubber Fab
a Garlock Hygienic Technologies company

26 Brookfield Drive • Sparta, NJ 07871
Tel: 973-579-2959 • Toll Free: 866-442-2959
Fax: 973-579-7275 • www.rubberfab.com

Certificate of Compliance

CUSTOMER:	
PURCHASE ORDER:	
ITEM NUMBER:	
ITEM DESCRIPTION:	
PRODUCT NAME:	
MATERIAL:	BUNA
LOT NUMBER:	
DOM:	
HEAT NUMBER:	

Compliance:

Rubber Fab, a Garlock Hygienic Technologies company certifies that the material from which we manufacture the above mentioned parts has passed:

EC1895/2005
3A 18-03 Class III
21 FDA177.2600
REACH/RoHS

Physical Properties:

Physical Properties	Test Method	Results
Hardness, (Shore A)	D2240	68 +- 5
Tensile Strength, (PSI)	D412-98a	1.39
Elongation, (%)	D412-98a	527
Temperature Range (°C)	-34°C to +93°C	
Specific Gravity (g/cm³)	D792	1.4
Compression Set (%)	D395-97 Method B	84.8%
Color	Black	
Shelf Life	10 Years	

The preceding Physical Properties data gives the typical properties of the mentioned material. It is intended to be used as a guide at your discretion and risk.

Certified by:

Date: L. Levai Quality Assurance

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Declaration of Compliance

Subject: Rubber Fab, Black BUNA Material

To whom it may concern,

we hereby confirm that the material from which our Black BUNA sanitary gaskets are manufactured is in compliance with and meets the requirements of the following regulations governing polymer materials for food contact applications.

- Title 21 CFR 177.2600 Rubber articles intended for repeated use
- REACH & RoHS
- 3-A 18-03 Class III Certified
- USDA Sanitary Standards
- ASME-BPE Standards

It is the end-users responsibility to evaluate and verify the suitability of the equipment and its components for the intended purpose and service conditions. Should you require additional information please feel free to contact Rubber Fab at your convenience.

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Compliance Statement

Material: Black BUNA

Subject: FDA 21CFR177.2600 Compliance

Dear Business Partner,

We hereby confirm that our Black BUNA material is in full compliance with the requirements of:

1. FDA Code of Federal Regulations Title 21, Section 177.2600 for rubber articles intended for repeated use.

In addition to the ingredients being acceptable for food contact applications, the permitted degree of release or extraction of the authorized ingredients from the polymer/elastomer is also specified. The extraction is carried out using specified test conditions and media such as water, ethanol and hexane as displayed in the table below.

Method	Test duration [h]	Max. permissible extraction amount [mg/sq.in.]
21CFR177.2600 (first extraction)	7	20
21CFR177.2600 (second extraction)	2	1

As per 21CFR177.2600 our Black BUNA material is generally recognized as safe (GRAS) and may be safely used as articles or components of articles intended to come in contact with food.

Part of CFR 21 Section 177.2600:

e) Rubber articles intended for repeated use in contact with aqueous food shall meet the following specifications: The food-contact surface of the rubber article in the finished form in which it is to contact food, when extracted with distilled water at reflux temperature, shall yield total extractives not to exceed 20 milligrams per square inch during the first 7 hours of extraction, nor to exceed 1 milligram per square inch during the succeeding 2 hours of extraction.

f) Rubber articles intended for repeated use in contact with fatty foods shall meet the following specifications: The food-contact surface of the rubber article in the finished form in which it is to contact food, when extracted with n -hexane at reflux temperature, shall yield total extractives not to exceed 175 milligrams per square inch during the first 7 hours of extraction, nor to exceed 4 milligrams per square inch during the succeeding 2 hours of extraction.

g) In accordance with good manufacturing practice finished rubber articles intended for repeated use in contact with food shall be thoroughly cleansed prior to their first use in contact with food.

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Compliance Statement

Material: Black BUNA

Subject: 3-A 18-03 Class IV Compliance

Dear Business Partner,

We hereby confirm that our Black BUNA material is in full compliance with the requirements of:

2. 3-A Sanitary Standards 18-03 for Multiple-Use Rubber and Rubber-Like Materials Used as Product Contact Surfaces in Dairy Equipment

The 3-A Sanitary Testing Procedures subject the specimens to accelerated use, simulating tests to determine the cleanability for use in dairy equipment. The specimens exhibited either no appreciable weight gain or weight gains less than the allowable limit.

Classification and Testing:

Class IV: Shall mean rubber materials suitable for temperature of exposure to product up to 100°F (38°C), and temperature of exposure to chemical solution used in cleaning and bactericidal treatment up to 180°F (82°C).

Testing:
Phosphoric Acid: For testing Class III and Class IV rubber and rubber-like materials: 1.0% orthophosphoric acid (10.00g acid/L of solution) is prepared by volumetrically diluting 7.00 ml of 85.0% orthophosphoric acid (Sp. Gr. 1.69) or 8.5 mL of 75.0% orthophosphoric acid (Sp. Gr. 1.58) to 1 L with distilled water.

Alkaline Cleaner Test Solution: For all classes of rubber and rubber-like materials: 1.0% sodium hydroxide (caustic) is prepared by dissolving 1.92g sodium tripolyphospphate, 10.20g sodium hydroxide, 0.36g trisodium phosphate, 0.26g anionic-type detergent (Aerosol O.T.R) to 1 L with distilled water.

Chlorine Sanitizer Test Solution: For all classes of rubber and rubber-like materials: Sodium hypochlorite solution - 200 ppm available chlorine - prepared daily. Dilute a 4.0 to 6.0% sodium hyopchlorite solution with distilled water in a volumetric flask to yield 200 ppm of available chlorine. Approximate dilution of sodium hypochlorite per liter with water to yield 200 ppm available chlorine percentage active chlorine.

4.0% 5.0 mL
5.0% 4.0 mL
6.0% 3.4 mL

Adjust pH of solution to 8.0 ± 0.5 with sodium bicarbonate.

Following Test Procedures are carried out:

1) Sample preparation - see ASTM D471, 8. "Test Specimens - Change in Mass or Volume" for preparation of test samples.
2) Submerge test specimens completely in loosely closed test tubes, see ASTM D471, 7. "Nonvolatile Liquids".
3) "Procedure for Change in Mass", see ASTM D471, 9
4) "Procedure for Change in Volume - Water Displacement Method for Water Insoluble Liquids and Mixed Liquids", see ASTM D471, 10.
5) Visual changes in the rubber material's product surface finish shall be examined by comparing test samples to a control.

For Acceptable Results and more information please see 3-A® Sanitary Standards for Multiple-Use Rubber and Rubber-Like Materials Used as Product Contact Surfaces in Dairy Equipment, Number 18-03 Standard Information (Appendix Section D4.6)

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Compliance Statement

Material: Black BUNA

Subject: RoHS II 2011/65/EU and Amendment (EU) 2015/863; REACH "Substances of Very High Concern List 2018"

Dear Customer,

Rubber Fab, a Garlock Hygienic Technologies company, hereby confirms that to the best of our knowledge, with appropriate due diligence, Black BUNA Gaskets comply with the RoHS II Directive 2011/65/EU and Its Amendment (EU) 2015/86 and are free from Asbestos and Polychlorinated Biphenyls (PCB's).

RoHS Annex II specifies maximum levels for the following restricted materials:

- Lead (Pb): < 1000 ppm
- Mercury (Hg): < 1000 ppm
- Cadmium (Cd): < 100 ppm
- Hexavalent Chromium: (Cr VI) < 1000 ppm
- Polybrominated Biphenyls (PBB): < 1000 ppm
- Polybrominated Diphenyl Ethers (PBDE): < 1000 ppm
- Bis(2-Ethylhexyl) phthalate (DEHP): < 1000 ppm
- Benzyl butyl phthalate (BBP): < 1000 ppm
- Dibutyl phthalate (DBP): < 1000 ppm
- Diisobutyl phthalate (DIBP): < 1000 ppm

Additionally, Rubber Fab confirms that our Black BUNA gaskets complies with REACH SVHC List 2018.

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STORAGE PROCEDURES AND SHELF LIFE

ELASTOMERIC & PTFE AND FEP GASKETS, O-RINGS & HOSES

The shelf life of elastomeric, PTFE and FEP gaskets, O-Rings, tubing and hoses is dependent on many factors pertaining to their storage conditions. Products stored in their original packaging in a dry, cool environment away from direct sun light and artificial light should remain in optimal condition for 10 years. We do, however, recommend visual inspection of gaskets for discoloration, hardening and deformation and the hydro testing of pressure rated hoses after three years.

TEMPERATURE:	In order to avoid certain forms of deterioration that may occur at higher temperatures, storage temperatures should be below 77F (25 C). The effects of low temperatures are not permanently damaging, but articles may stiffen more than usual.
HUMIDITY:	Store in a dry environment to avoid condensation.
LIGHT:	Gaskets & hoses should be protected from light, especially direct sunlight and strong artificial light with high ultraviolet content.
OXYGEN AND OZONE:	Whenever possible, gaskets and hoses should be protected from circulating air, ozone is very abrasive toward rubber, storage rooms should not contain any equipment capable of generating ozone such as mercury lamps, electric motors and any other equipment that produces electrical sparks and discharge.
DEFORMATION:	Whenever possible, gaskets and hoses should be stored in a relaxed condition free from tension, compression or other deformation.
CONTACT WITH LIQUID OR SEMI-SOLID MATERIALS:	Rubber should not come in contact with liquids or semi-solid materials, especially solvents, oils and greases at any time during storage.
ROTATION OF STOCKS:	Gaskets and hoses should remain in stores for as short of a period as possible. Therefore, articles should be issued from stores in strict rotation.