

MATERIAL SAFETY DATA SHEET

PRODUCT NAME : 'O' RINGS (NITRILE) & RUBBER VACUUM TUBING

1. Product and Company Identification

Product name: Nitrile 'O' ring/nitrile rubber cord/rubber vacuum tubing
Synonyms: None
Item Numbers: 'O' rings: H021-05-XXX*, H021-21-XXX*, H021-24-XXX*
* XXX-size dependent - see Edwards catalog for details
Rubber cord: H021-01-008, H021-01-009, H021-01-015
Rubber vacuum tubing: C066-00-025, H021-00-002, H021-00-003, H021-00-004, H021-00-05, H021-00-006

European Contact Details

Edwards, Manor Royal, Crawley
West Sussex, RH10 9LW, England
E-mail: info@edwardsvacuum.com

General enquiries

UK : +44 (0)1293 528844
France : +(33) 1 47 98 24 01
Germany : +(49) 6420-82-410
Italy : +(39) 0248-4471

US Contact Details

Edwards, Three Highwood Drive, Suite 3-10E,
Highwood Office Park, Tewksbury, MA 01876

General enquiries

+(1) 978-658-5410
Toll Free: 1-800-848-9800

24 h Emergency telephone number:

Chemtrec: 1-800-424-9300

2. Hazards Identification

EMERGENCY OVERVIEW

These products when properly handled according to good working and hygienic practices are not dangerous to human health and the environment.

Degradation by chemicals, ageing, heat or fire may produce a toxic and/or corrosive residue depending on the circumstances of degradation and other materials involved.

The combustion products of nitrile must be considered toxic.

For short and long term exposure effects see Section 11 Toxicological data.

Eye Effects: None under normal conditions of use.
Skin Effects: May cause dermatitis irritation of sensitive skin.
Ingestion/Oral Effects: None under normal conditions of use.
Inhalation Effects: None under normal conditions of use. Inhalation of fumes released at high temperature can be irritating to the lungs and fatal.

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE: None known.

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NFPA Hazard codes		HMIS Hazard codes		Rating System
Health	1	Health	0	0 = No Hazard
Flammability	0	Flammability	0	1 = Slight Hazard
Instability	0	Reactivity	0	2 = Moderate Hazard
				3 = Serious Hazard
				4 = Severe Hazard

3. Composition/Information on Ingredients

Ingredient	% Weight	CAS No	Hazard class*	Risk phrase*
Acrylonitrile butadiene copolymer with curatives, additives, fillers, oils and anti-degradants added to obtain specific material properties	Percentage composition not available	Not allocated	Not applicable	Not applicable

*Hazard class & Risk phrase. These columns are only completed for ingredients which are classified as hazardous under EU Directive No 1272/2008 (as amended) and are present in sufficient concentration to make the overall substance hazardous. In all other situations, the column will be completed as "Not applicable".

4. First Aid Measures

- Eyes:** No effects requiring first aid are expected during normal use. However, if small particles enter the eye, flush with sterile water for at least 10 minutes. If irritation persists seek medical attention.
- Skin:** No effects requiring first aid are expected during normal use. After contact with skin, wash with soap and water.
- Ingestion/Oral:** No effects requiring first aid are expected during normal use. If ingested, do not induce vomiting. If conscious, drink copious amounts of water.
- Inhalation:** No effects requiring first aid are expected during normal use. If exposed to fumes received from decomposition products*, remove the patient to fresh air. If breathing problems occur, a qualified individual should administer oxygen or artificial respiration as indicated. Seek immediate medical attention.
- Other Information:** * In all cases of exposure to thermally degraded product, when hydrogen cyanide may be a decomposition product, seek immediate medical advice.

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5. Fire Fighting Measures

Extinguishing Media: Dry chemicals, sand, water, carbon dioxide, alcohol-resistant foam.

Fire and Explosion Hazard: Once ignited, nitrile will continue to burn with the evolution of dense smoke. Hazardous decomposition products resulting from overheating or combustion: carbon monoxide, carbon dioxide, oxides of nitrogen, hydrogen cyanide and small amounts of aliphatic and aromatic hydrocarbons.

Special Protective Equipment for Fire Fighters: Inhalation of fumes must be avoided. Fire fighters should wear a self-contained breathing apparatus (SCBA) which meets appropriate standards operated in positive pressure mode, and full turnout gear. Wear adequate skin protection to protect from thermal combustion products.

For Flammability Properties - see Section 9.

6. Accidental Release Measures

No material specific actions are required. Collect the spilled items, and re-use or dispose (see Section 13).

7. Handling and Storage

Handling: Observe the technical standards (TRGS) for the handling of vulcanizates (see Section 11).

Storage: Store in cool well ventilated space away from direct sunlight and sources of ignition. Store in original packaging showing code numbers and date of manufacture. Store in accordance with DIN 7716 or DIN 9088.

8. Exposure Controls/Personal Protection

Exposure Limits:

Ingredient	ACGIH - TLV -	OSHA - PEL	Occupational Exposure Limits EH40 (UK)
Acrylonitrile butadiene copolymer with curatives, additives, fillers, oils and anti-degradants added to obtain specific material properties	No data available	No data available	Rubber fumes - maximum exposure - 0.6 mg/m ³ (8h TWA)

Toxic decomposition products should be independently monitored.

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Personal Protection:

Engineering Measures:	None required under conditions of normal use.
Respiratory Protection:	None required under conditions of normal use.
Hand/Skin Protection:	Wear suitable protective gloves.
Eye/Face Protection:	None required under conditions of normal use. Wear safety glasses when cutting/machining tubing.
Hygiene Measures:	Practice good workplace hygiene. Do not eat or smoke when handling. Wash hands after handling and before eating.
Other/General Protection:	None.

9. Physical and Chemical Properties

Appearance and Odour	Black rubber. Mild aromatic odour	Boiling point	No data available	°C/°F
pH (as supplied)	No data available	Freezing Point	No data available	°C/°F
Solubility in Water	Insoluble	Auto Ignition	> 200 / 392	°C/°F
Volatile Content by Volume	No data available	Flash Point	> 200 / 392	°C/°F
Specific Gravity	1.00 - 1.65g/cm ³			
Vapour Pressure (mbar)	No data available	Vapour Pressure (Torr)	No data available	

10. Stability and Reactivity

Stability:	Stable.
Material/Conditions to Avoid:	Temperatures higher than 250 °C /482 °F.
Hazardous Decomposition:	Carbon monoxide, carbon dioxide, oxides of nitrogen, hydrogen cyanide and small amounts of aliphatic and aromatic hydrocarbons.
Hazardous Polymerisation:	Will not occur.

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11. Toxicological Information

For a comprehensive description for the various toxicological (health) effects which may arise if the user comes into contact with the substance or preparation refer to Section 2 Hazards Identification.

The formation of N-Nitrosamines (a vulcanizate) is possible during manufacture, due to the presence of nitric oxides in the environment. Therefore for storage and handling, the corresponding technical standards for hazardous substances (TRGS) are to be observed, such as TRGS 102, TRGS 552 and TRGS 900/905.

Animal data:

LD50 value: No data available.

LC50 value: No data available.

Carcinogenicity:

No known carcinogenic hazardous effects.

12. Ecological Information

The ecological effects of the product have not been established. The product is not expected to be substantially biodegradable. The material contains no chlorofluorocarbons (CFCs).

Water Hazard Class (WGK) 0, generally not hazardous for water (self-classification).

13. Disposal Considerations

The material must be properly contained. Dispose of at approved landfill sites, or by high temperature incineration, using licensed contractors. Disposal must be in accordance with local authority and national regulations.

Disposal code: EAK 160119.

Contaminated packages or empty containers to be re-utilised or disposed of through standard waste-management processes.

14. Transport Information

This product is not classified as dangerous under transport regulations.

PARAMETER	EUROPEAN	CANADIAN TDG	UNITED STATES DOT
Proper Shipping Name	Not applicable	Not applicable	Not applicable
Hazard Class	Not applicable	Not applicable	Not applicable
Identification Number	Not applicable	Not applicable	Not applicable
Shipping Label	Not applicable	Not applicable	Not applicable

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15. Regulatory Information

European Regulatory Information

This product has been classified in accordance with EU Regulation No 1272/2008 (as amended) on the Classification, Labelling and Packaging of Substances and Mixtures.

Classified as dangerous to supply: No.

Risk Phrases: Not applicable.

Safety Phrases: Not applicable.

Symbols: None.

United States Regulatory Information

Product is a manufactured article not subject to TSCA listing.

SARA TITLE III - SECTION 313 SUPPLIER NOTIFICATION:

This product constitutes an "article" and, as such is exempt from SARA 313 reporting requirements (40 CFR Part 372.38, Paragraph B).

California Proposition 65: Release of ingredients contained in this product to the environment is not anticipated.

Canadian Regulatory Information

WHMIS Classification: Product is a manufactured article not subject to WHMIS regulations.

Product is a manufactured item not subject to DSL listing.

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16. Other Information

This MSDS is compiled in accordance with ANSI Z400.1 and Regulation (EC) No 1907/2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH).

Sources of information for this data sheet:

- Trelleborg Sealing Solutions 'NBR' Safety Data Sheet EG 93/112-NORM. Revision: 24.03.2004. Version: 2.0.

Glossary:

ACGIH - American Conference of Governmental Industrial Hygienists; **ANSI** - American National Standards Institute; **Canadian TDG** - Canadian Transportation of Dangerous Goods; **CAS** - Chemical Abstracts Service; **Chemtrec** - Chemical Transportation Emergency Center (US); **DIN** - German National Standard; **DSL** - Domestic Substances List; **EH40 (UK)** - HSE Guidance Note EH40 Occupational exposure limits; **HMIS** - Hazardous Material Information Service; **LC** - Lethal Concentration; **LD** - Lethal Dose; **NFPA** - National Fire Protection Association; **OSHA** - Occupational Safety and Health Administration, US department of Labour; **PEL** - Permissible exposure limit; **SARA (Title III)** - Superfund Amendments and Reauthorization Act, Section 313; **SCBA** - Self-Contained Breathing Apparatus; **TLV** - threshold limit value; **TRGS** - Technical Standards for Hazardous Substances; **TSCA** - Toxic Substances Control Act Public Law 94-469; **TWA** - Time-Weighted Average; **US DOT** - US Department of Transportation; **WGK** - Water Hazard Class; **WHMIS** - Workplace Hazardous Materials Information System.

Revisions:

Oct 2010 - Data Sheet updated to reflect the latest supplier safety information.

Although the information and recommendations in this data sheet are to the best of our knowledge correct, it is recommended that you make your own determination of the material's suitability for your purpose before you use it. The information contained in this data sheet has been reproduced from the manufacturers data; the accuracy of this information is the responsibility of the manufacturer. Edwards accept no responsibility for damage of any nature resulting from the use of, or the reliance upon, this data sheet.