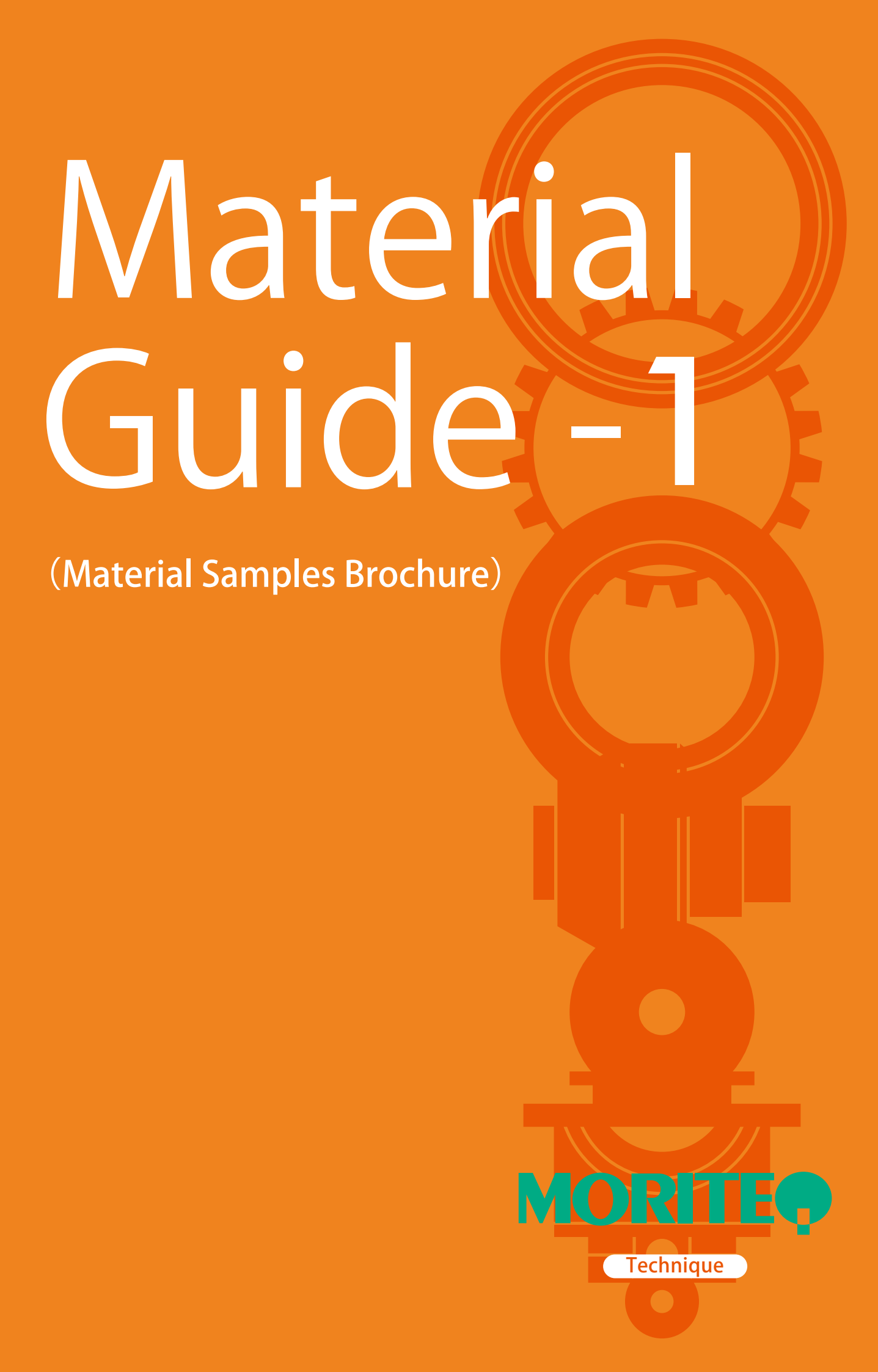


# Material Guide -1



(Material Samples Brochure)

**MORITEQ**

Technique



[www.moriteq.co.jp](http://www.moriteq.co.jp)



## Rubber is amazing; Rubber is versatile; Rubber is infinite

Nowadays, rubber has come to be identified and called an elastic material that is rich with stretching properties.

First, there is natural rubber which is made by latex in tree sap. Then, there is synthetic rubber which has been artificially synthesized.

Research and development on both of these has advanced depending on the needs of society as well as people' s lives, and a surprisingly high level of performance has been achieved.

High-performance rubber is a material in which the strength, elasticity, heat resistance, cold resistance and abrasion resistance has been further improved, with the feature of having an elastic body.

At Moriteq, we have a complete range of different materials required by our customers; from basic rubber to high performance rubber, as well as sponge, Teflon, cork and felt. We can respond to your demands with a diverse inventory and stable supply system.

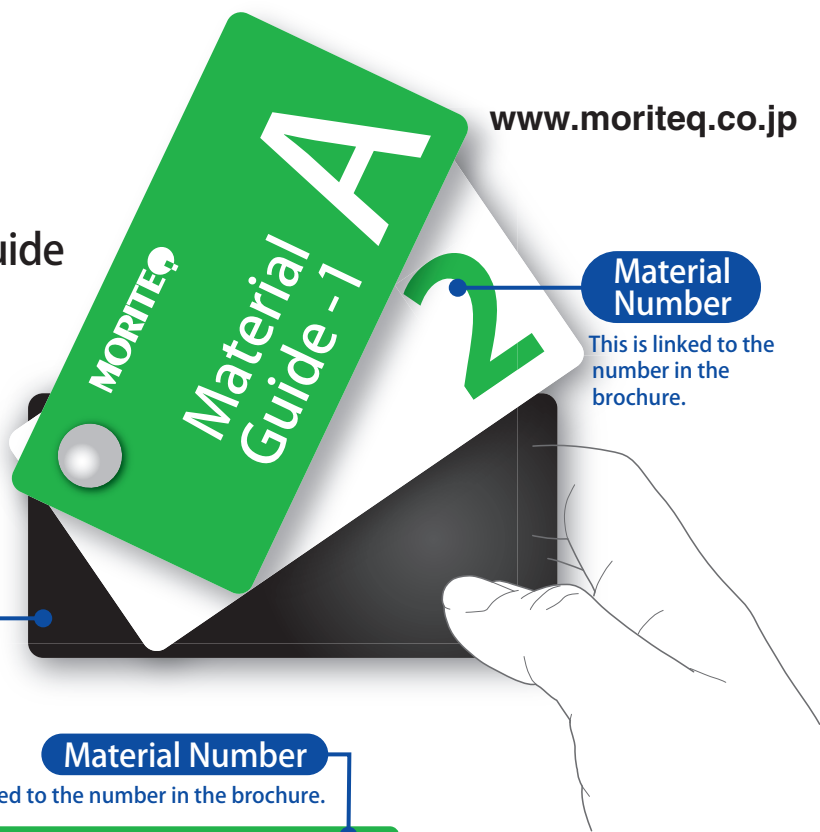
**\*Please feel free to contact us; even about materials that are not listed in this Material Guide.**



## Before Using the Materials Guide

Please read, in order to make the best use of this Materials Guide.

### 【Each material and specification】



#### Actual Material

Please check the hardness and texture of the material by touching this sheet.

#### Material Name

Soft Black Rubber (NR)

#### Hardness

Hardness: A50° (±5°) Thickness: 1.60

The figure in the parenthesis ( ) lists the hardness tolerance.

#### Features

Features: \*Inexpensive as a rubber material

The basic features of the materials are described with symbols.

#### Physical Properties Data

Application Examples

Seals, rubber mats, industrial cushioning

Processing Difficulty:

| Cutting | Cutting and Grinding | Bonding |
|---------|----------------------|---------|
| ○       | △                    | ◎       |

Physical Properties Data

TB (tensile strength) Mpa (kg f/cm<sup>2</sup>): 8.3 (85)

EB (Elongation at break): 570%

CS The figures in parenthesis ( ) are

the test conditions: 30 (70°C [158°F] × 22h)

The physical properties data of each type of rubber are described. The content of the data varies depending on the material.

TB: Based on JIS K 6251

EB: Based on JIS K 6251

CS: Based on JIS K 6262

TR: Based on JIS K 6262

Others that are based on ASTM D638 are listed separately. However, the data values are the experiment values of each manufacturer and are not guaranteed values.

#### Thickness

It is possible to prepare the material to a thickness within the range listed.

\*Please feel free to inquire even about thicknesses that are not listed here.

#### Processing Difficulty

The processing difficulty of the material is described in three levels:

◎ ○ △

◎ Processing: Good

○ Processing: Average

△ Processing: A little difficult

— Discussions necessary

\*The processing difficulty level is only a guide and also depends on the shape and dimensions.

### 【Features Symbols】



Abrasion resistance



Heat resistance



Insulation resistance



Impact resilience



Elasticity



Ozone resistance



Flame retardant



Gasoline resistance



Elongation



Chemical resistance



Rebound resilience



Heat insulation resistance



Weather resistance



Water resistance



Cold resistance



Oil resistance



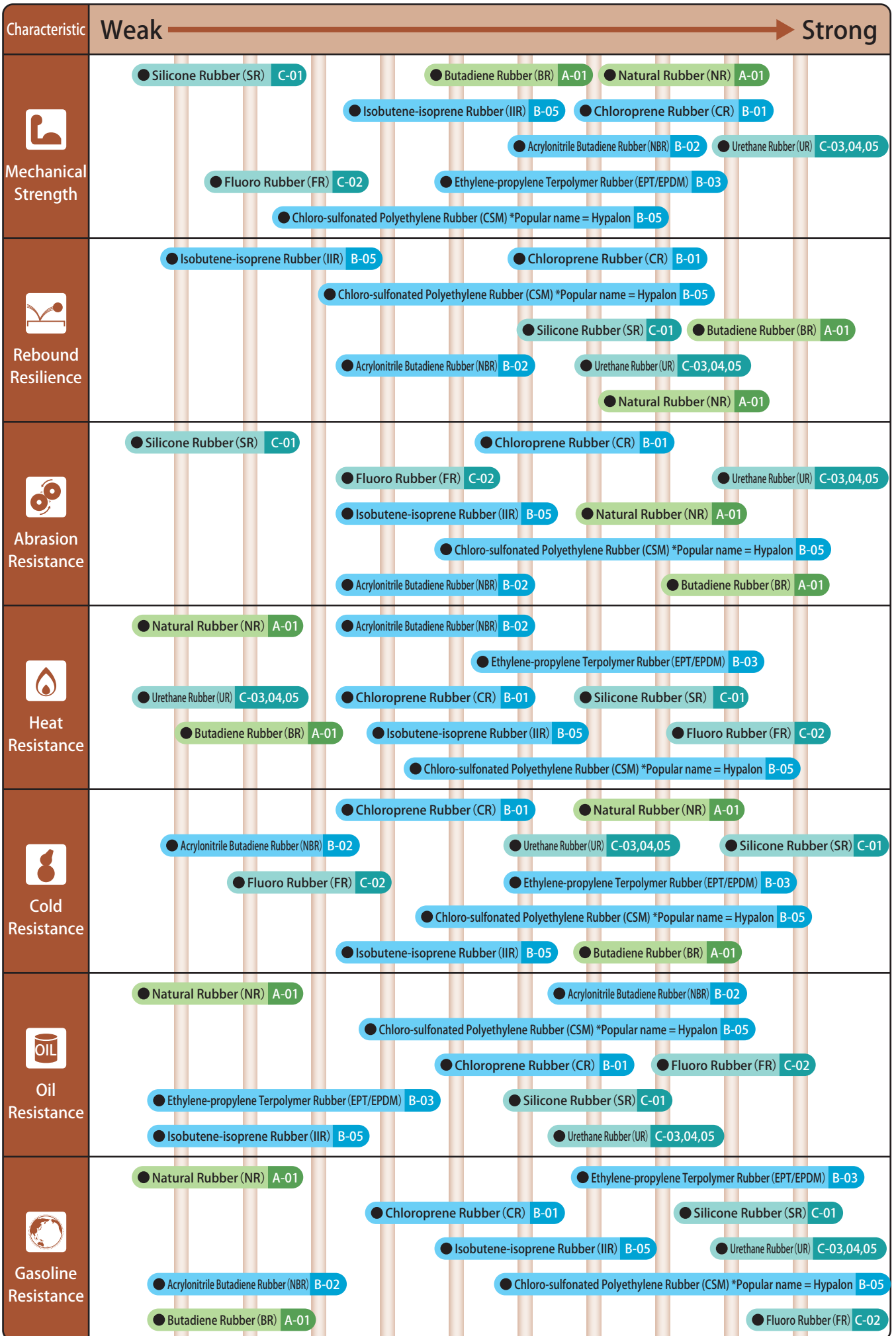
RoHS compliant




Foodstuff compatible  
Ministry of Health and Welfare Notification No. 201 (formerly No. 85)

\*The data for each material may vary somewhat depending on the manufacturer.

\*Due to aging, it is especially light-colored materials that may fade.



\*The levels of the characteristics are a guide only. Please feel free to contact us for more details on characteristics and other information.

|    | Application   | Recommended Material   |  |   |                                     |                                     |                             |   |
|----|---|--|--|---|-------------------------------------|-------------------------------------|-----------------------------|---|
| 1  | General industry<br>Seals, rubber mats and cushioning   | ● Natural Rubber (NR) A-01   | ● Chloroprene Rubber (CR) B-01               | ● Acrylonitrile Butadiene Rubber (NBR) B-02 | ● Urethane Rubber (UR) C-03,04,05   |                                     |                             |   |
| 2  | Rubber bands  | ● Various Thin Rubbers A-02  |  |   |                                     |                                     |                             |   |
| 3  | Bridge collapse prevention<br>buffers   | ● Chloroprene Rubber (CR) 55° B-01   |  |   |                                     |                                     |                             |   |
| 4  | Cushioning materials and<br>sealing materials   | ● Various Sponges B-04   | ● Urethane Rubber (UR) C-03,04,05            |   |                                     |                                     |                             |   |
| 5  | Medical care, foodstuffs<br>and electrical equipment  | ● Silicone Rubber (SR) C-01  |  |   |                                     |                                     |                             |   |
| 5  | Semiconductors  | ● Fluoro Rubber (FR) C-02  | ● Fluorine Sponge C-02                       |   |                                     |                                     |                             |   |
| 5  | Heat resistant seals  | ● Silicone Rubber (SR) C-01  | ● Fluoro Rubber (FR) C-02                    |   |                                     |                                     |                             |   |
| 6  | Flame retardant<br>(UL94V-0 / UL94HF-1<br>compatible products)  | ● ULCR B-02  | ● CR Sponge B-04                             |   |                                     |                                     |                             |   |
| 6  | Heat insulation materials<br>and heat resistant<br>cushioning materials   | ● Silicone Sponge C-02   |  |   |                                     |                                     |                             |   |
| 7  | Rollers   | ● Urethane Rubber (UR) C-03,04,05  |  |   |                                     |                                     |                             |   |
| 8  | Floor mats and anti-skid<br>devices   | ● B-YAMA Rubber B-03   | ● Vinyl Pyramat E-01                         | ● Vinyl B-YAMA E-02                         | ● Santoprene E-01                   |                                     |                             |   |
| 9  | Desk mats and curtains  | ● Various Conductive Rubbers D-01  | ● Various Colors Soft Vinyl Chloride E-01    |   |                                     |                                     |                             |   |
| 10 | Conduction and static<br>electricity prevention   | ● Various Conductive Rubbers D-01  |  |   |                                     |                                     |                             |   |
| 10 | Soundproofing and<br>non-slip effects   | ● Smooth Vinyl and Pyramat E-01  |  |   |                                     |                                     |                             |   |
| 11 | Shocks and vibrations<br>(vibration prevention and<br>control)  | ● Hanenite F-02  |  |   |                                     |                                     |                             |   |
| 12 | Food Hygiene Law compliant products<br>Ministry of Health and Welfare<br>Notification No. 201 (formerly No. 85) | ● Butyl (IIR) White B-05   | ● Ethylene Propylene (EPT / EPDM) White B-03 | ● Silicone Rubber (SR) Various C-01         | ● Silicone Sponge Various C-02      |                                     |                             | *Varies depending on<br>the manufacturer. |
| 13 | Environmental support<br>sheets (RoHS compliant)  | RoHS Support Sheets  | Cd   | Pb  | Hg                                  | Cr6+                                | PBBs                        | PBDEs                                     |
|    |   | *Described separately<br>with the  symbol in<br>the varieties and<br>features column.<br>(Control values current<br>as of March 2010) | Cadmium and<br>Cadmium<br>Compounds          | Lead and Lead<br>Compounds                  | Mercury and<br>Mercury<br>Compounds | Hexavalent<br>Chromium<br>Compounds | Polybrominated<br>Biphenyls | Polybrominated<br>Diphenyl Ethers         |
|    |   |  | 5ppm   | 100ppm                                      | 100ppm                              | 100ppm                              | 100ppm                      | 100ppm                                    |
|    |   | Below  | Below  | Below                                       | Below                               | Below                               | Below                       |   |

\*Please feel free to contact us about other special applications.

# Processing Examples Using Various Materials

|   |   |  |  |
|---|---|--|--|
|  <p>● Silicone Rubber (SR) Various C-01</p>          |  <p>● Ethylene-propylene Terpolymer Rubber (EPT/EPDM) B-03</p> |  <p>● Acrylonitrile Butadiene Rubber (NBR) B-02</p> |  <p>● Acrylonitrile Butadiene Rubber (NBR) B-02</p> |
|  <p>● Acrylonitrile Butadiene Rubber (NBR) B-02</p>  |  <p>● Silicone Rubber (SR) Various C-01</p>                    |  <p>● Urethane Rubber (UR) C-03,04,05</p>           |  <p>● Natural Rubber (NR) A-01</p>                  |
|  <p>● Urethane Rubber (UR) C-03,04,05</p>           |  <p>● Silicone Rubber (SR) Various C-01</p>                   |  <p>● Urethane Rubber (UR) C-03,04,05</p>          |  <p>● Urethane Rubber (UR) C-03,04,05</p>          |
|  <p>● Silicone Rubber (SR) Various C-01</p>         |  <p>● Urethane Rubber (UR) C-03,04,05</p>                    |  <p>● Silicone Rubber (SR) Various C-01</p>       |  <p>● Chloroprene Rubber (CR) B-01</p>            |
|  <p>● Acrylonitrile Butadiene Rubber (NBR) B-02</p> |  <p>● Chloroprene Rubber (CR) B-01</p>                       |  <p>● Silicone Rubber (SR) Various C-01</p>       |  <p>● Urethane Rubber (UR) C-03,04,05</p>         |

\*The sample shapes are just examples. It is possible to support all shapes and various materials.

\*Please see Technical Report I, II and other processing examples.

# Chemical Resistance of Silicone Rubber

| Chemical                         | Conditions   | Assessment |
|----------------------------------|--------------|------------|
| <b>Acids</b>                     |              |            |
| Hydrochloric acid (35%)          | 25°C [77°F]  | ×          |
| Formic acid                      | 70°C [158°F] | △          |
| Chromic acid (10%)               | 25°C [77°F]  | ×          |
| Nitric acid                      | 25°C [77°F]  | ×          |
| Glacial acetic acid              | 25°C [77°F]  | ×          |
| Sulfuric acid (50%)              | 25°C [77°F]  | ×          |
| <b>Alkalis</b>                   |              |            |
| Ammonia                          | 25°C [77°F]  | ○          |
| Sodium hydroxide                 | 70°C [158°F] | ×          |
| Sodium hypochlorite              | 25°C [77°F]  | △          |
| <b>Other inorganic chemicals</b> |              |            |
| Chlorine                         | 25°C [77°F]  | ×          |
| Bromine                          | 25°C [77°F]  | ×          |
| Water                            | 70°C [158°F] | ○          |
| <b>Ketones and ethers</b>        |              |            |
| Acetone                          | 25°C [77°F]  | ○          |
| Methyl ethyl ketone              | 25°C [77°F]  | △          |
| Methyl ether                     | 25°C [77°F]  | △          |

| Chemical                    | Conditions   | Assessment |
|-----------------------------|--------------|------------|
| <b>Chlorinated solvents</b> |              |            |
| Methylene dichloride        | 25°C [77°F]  | ○          |
| Chloroform                  | 25°C [77°F]  | ×          |
| Carbon tetrachloride        | 25°C [77°F]  | ×          |
| Trichloroethylene           | 25°C [77°F]  | ×          |
| Trichloroethane             | 25°C [77°F]  | ×          |
| <b>Alcohols</b>             |              |            |
| Isopropyl alcohol           | 25°C [77°F]  | ◎          |
| Glycerin                    | 70°C [158°F] | ○          |
| Butyl alcohol               | 25°C [77°F]  | ○          |
| Ethyl alcohol               | 25°C [77°F]  | ○          |
| Methyl alcohol              | 25°C [77°F]  | ◎          |
| <b>Oils and fats</b>        |              |            |
| Ethylene glycol             | 70°C [158°F] | ◎          |
| Silicone oil                | 70°C [158°F] | △          |
| Cottonseed oil              | 70°C [158°F] | ◎          |
| ASTM No.3 oil               | 70°C [158°F] | △          |
| JIS 1 oil                   | 70°C [158°F] | ○          |

| Chemical                      | Conditions   | Assessment |
|-------------------------------|--------------|------------|
| <b>Fuel oils</b>              |              |            |
| Gasoline                      | 25°C [77°F]  | △          |
| Heavy oil                     | 25°C [77°F]  | ○          |
| Diesel oil                    | 70°C [158°F] | ×          |
| <b>Aromatic hydrocarbons</b>  |              |            |
| Benzene                       | 25°C [77°F]  | ×          |
| Toluene                       | 25°C [77°F]  | ×          |
| Xylene                        | 25°C [77°F]  | ×          |
| Phenol (10%)                  | 70°C [158°F] | ◎          |
| <b>Aliphatic hydrocarbons</b> |              |            |
| n-hexane                      | 25°C [77°F]  | ×          |
| Cyclohexane                   | 25°C [77°F]  | ×          |
| Isooctane                     | 25°C [77°F]  | ○          |

◎: Chemicals with almost no impact

○: Chemicals with a slight impact, but which are considered as not interfering in use

△: Chemicals which cannot be recommended because there is an impact to a certain extent

×: Chemicals with a significant affect and which are not suitable for use

In addition, the above-mentioned chemical resistance data denotes the rough chemical resistance behavior from the swelling ratio and other information and so it is not intended to be a guarantee of chemical resistance.

When using, please conduct experiments and similar that have taken into account the requirements, and then use upon confirming this.

# Chemical Resistance of Fluorine Rubber

| Chemical                          | Conditions    | Assessment |
|-----------------------------------|---------------|------------|
| <b>Acids</b>                      |               |            |
| Hydrochloric acid (35%)           | 40°C [104°F]  | ◎          |
| Chromic acid (10%)                | 70°C [158°F]  | ◎          |
| Nitric acid (60%)                 | 25°C [77°F]   | ◎          |
| Glacial acetic acid               | 25°C [77°F]   | ×          |
| Fluorine (50%)                    | 40°C [104°F]  | ○          |
| Sulfuric acid (98%)               | 40°C [104°F]  | ◎          |
| <b>Alkalis</b>                    |               |            |
| Ammonia                           | 40°C [104°F]  | ○          |
| Sodium hydroxide                  | 40°C [104°F]  | *△~○       |
| Sodium hypochlorite               | 40°C [104°F]  | ○          |
| <b>Other inorganic chemicals</b>  |               |            |
| Chlorine                          | 25°C [77°F]   | ○          |
| Bromine                           | 25°C [77°F]   | ○          |
| Water                             | 100°C [212°F] | ◎          |
| <b>Ketones, ethers and amines</b> |               |            |
| Acetone                           | 40°C [104°F]  | ×          |
| Methyl ethyl ketone               | 40°C [104°F]  | ×          |
| Methyl ether                      | 25°C [77°F]   | ×          |
| N-methylpyrrolidone               | 25°C [77°F]   | ×          |

| Chemical                    | Conditions    | Assessment |
|-----------------------------|---------------|------------|
| <b>Chlorinated solvents</b> |               |            |
| Methylene chloride          | 40°C [104°F]  | *×~○       |
| Chloroform                  | 40°C [104°F]  | *△~○       |
| Carbon tetrachloride        | 40°C [104°F]  | ◎          |
| Trichloroethylene           | 40°C [104°F]  | ◎          |
| Trichloroethane             | 40°C [104°F]  | *○~◎       |
| <b>Alcohols</b>             |               |            |
| Isopropyl alcohol           | 25°C [77°F]   | ◎          |
| Glycerin                    | 70°C [158°F]  | ◎          |
| Butyl alcohol               | 40°C [104°F]  | ○          |
| Ethyl alcohol               | 40°C [104°F]  | ○          |
| Methyl alcohol              | 40°C [104°F]  | *△~○       |
| <b>Oils and fats</b>        |               |            |
| Ethylene glycol             | 70°C [158°F]  | ◎          |
| Silicone oil                | 175°C [347°F] | ◎          |
| Cottonseed oil              | 175°C [347°F] | ◎          |
| ASTM No.3 oil               | 175°C [347°F] | ◎          |
| JIS 1 oil                   | 175°C [347°F] | ◎          |

| Chemical                      | Conditions   | Assessment |
|-------------------------------|--------------|------------|
| <b>Fuel oils</b>              |              |            |
| Gasoline                      | 40°C [104°F] | ◎          |
| Kerosene                      | 40°C [104°F] | ◎          |
| Fuel A                        | 40°C [104°F] | ◎          |
| <b>Aromatic hydrocarbons</b>  |              |            |
| Benzene                       | 40°C [104°F] | *△~◎       |
| Toluene                       | 40°C [104°F] | *△~◎       |
| Xylene                        | 40°C [104°F] | *○~◎       |
| Phenol (10%)                  | 70°C [158°F] | ◎          |
| <b>Aliphatic hydrocarbons</b> |              |            |
| n-hexane                      | 25°C [77°F]  | ○          |
| Cyclohexane                   | 25°C [77°F]  | ○          |
| Isooctane                     | 25°C [77°F]  | ○          |

◎: Chemicals with almost no impact

○: Chemicals with a slight impact, but which are considered as not interfering in use

△: Chemicals which cannot be recommended because there is an impact to a certain extent

×: Chemicals with a significant affect and which are not suitable for use

\*: Variations result due to the material grade

In addition, the above-mentioned chemical resistance data denotes the rough chemical resistance behavior from the swelling ratio and other information and so it is not intended to be a guarantee of chemical resistance.

When using, please conduct experiments and similar that have taken into account the requirements, and then use upon confirming this.

# Chemical Resistance of Various Rubber Materials

| Chemical                                 | NR | CR | NBR | EPT (EPDM) | IIR | CSM | UR |
|--|----|----|-----|------------|-----|-----|----|
| Acetaldehyde                             | △  | ×  | ×   | ○          | ◎   | △   | ×  |
| Acetone                                  | ○  | △  | ×   | ○          | ◎   | ○   | ×  |
| Aniline                                  | △  | ×  | ×   | ○          | ○   | △   | ×  |
| Linseed oil (100°C [212°F])              | ×  | ×  | ◎   | △          | ○   | ○   | ○  |
| Sulfurous acid                           | ○  | ○  | ○   | ○          | ○   | ◎   | ×  |
| Hydrochloric acid (10%, RT)              | ×  | △  | ○   | ○          | ◎   | ◎   | △  |
| Concentrated hydrochloric acid (36%, RT) | ×  | △  | ○   | ○          | ◎   | ○   | △  |
| Chlorobenzene                            | ×  | ×  | ×   | ×          | ×   | ×   | ×  |
| Gasoline                                 | ×  | △  | ○   | ×          | ×   | ×   | ○  |
| Hydrogen peroxide (5%, RT)               | ◎  | ○  | ○   | ◎          | ○   | ◎   | —  |
| Formic acid (25%, RT)                    | ◎  | ◎  | ○   | ◎          | ◎   | ◎   | ×  |
| Xylene                                   | ×  | ×  | ×   | ×          | ×   | ×   | △  |
| Chromic acid (10%, 70°C [158°F])         | ×  | ×  | ×   | △          | △   | ○   | ×  |
| Cresol                                   | ×  | △  | △   | ×          | ×   | △   | ×  |
| Acetic acid (10%, RT)                    | ○  | ○  | ○   | ○          | ◎   | ○   | ×  |
| Ethyl acetate                            | ×  | ×  | ×   | ○          | ○   | ×   | ×  |
| Bromine                                  | ×  | ×  | ×   | ×          | △   | ×   | ×  |
| Carbon tetrachloride                     | ×  | ×  | ×   | ×          | △   | ×   | △  |
| Ammonium hydroxide                       | ×  | ○  | ○   | ◎          | ◎   | ◎   | ◎  |
| Calcium hydroxide                        | ◎  | ◎  | ◎   | ◎          | ◎   | ◎   | ◎  |
| Sodium hydroxide (30%, RT)               | ○  | ◎  | ○   | ◎          | ◎   | ○   | ×  |
| Nitric acid (10%, RT)                    | ×  | ○  | △   | ○          | ◎   | ○   | ×  |
| Concentrated nitric acid (60%, RT)       | ×  | ×  | ×   | △          | △   | △   | ×  |
| Fuming nitric acid (RT)                  | ×  | ×  | ×   | ×          | ×   | ×   | ×  |
| Cyclohexane                              | ×  | ×  | ×   | ○          | ○   | △   | ×  |
| Dibutyl phthalate                        | ×  | ×  | ×   | ◎          | ○   | ×   | —  |
| Diethyl ether                            | ×  | △  | ○   | △          | △   | ○   | ◎  |
| Toluene                                  | ×  | ×  | ×   | ×          | ×   | ×   | △  |
| Triethanolamine                          | ○  | ◎  | ○   | ○          | ◎   | ◎   | ×  |
| Hydroquinone                             | ○  | ×  | △   | —          | —   | ×   | —  |
| Butane                                   | ×  | ○  | ◎   | ×          | ×   | ○   | ○  |
| Propane                                  | ×  | ○  | ◎   | ×          | ×   | ○   | △  |
| Benzene (benzol)                         | ×  | ×  | ×   | ×          | ×   | ×   | ×  |
| Methyl alcohol                           | ◎  | ◎  | ◎   | ◎          | ◎   | ◎   | ×  |
| Sulfuric acid (10%, RT)                  | △  | ○  | △   | ○          | ◎   | ◎   | △  |
| Concentrated sulfuric acid (98%, RT)     | ×  | ×  | ×   | △          | ○   | △   | ×  |
| Fuming sulfuric acid (RT)                | ×  | ×  | ×   | ×          | ×   | ×   | ×  |
| Phosphoric acid (75%, RT)                | ○  | ○  | ○   | △          | —   | ◎   | ○  |

◎: Chemicals with almost no impact

○: Chemicals with a slight impact, but which are considered as not interfering in use

△: Chemicals which cannot be recommended because there is an impact to a certain extent

×: Chemicals with a significant affect and which are not suitable for use

In addition, the above-mentioned chemical resistance data denotes the rough chemical resistance behavior from the swelling ratio and other information and so it is not intended to be a guarantee of chemical resistance.

When using, please conduct experiments and similar that have taken into account the requirements, and then use upon confirming this.

\*RT: Room temperature



## Natural Rubber (NR)

Hardness: A65° – 70° (±5°) Thickness: 0.5 – 120(Varies depending on the color)

Colors: Black / Red / White / Green

Features:  \*Inexpensive as a rubber material

Application Examples  
(Black / Red / White / Green)

Seals, rubber mats,  
industrial cushioning

Processing Difficulty (Black):

| Cutting | Cutting and Grinding | Bonding |
|---------|----------------------|---------|
| ◎       | ◎                    | ◎       |

Processing Difficulty (Red / White / Green):

| Cutting | Cutting and Grinding | Bonding |
|---------|----------------------|---------|
| ◎       | ◎                    | ○       |

Physical Properties Data

TB (Tensile strength) Mpa (kg f/cm<sup>2</sup>): (Black) 3.7 (38) / (Red) 7.7 (79) / (White) 6.1 (62) / (Green) 7.6 (78)

EB (Elongation at break): (Black) 300% / (Red) 620% / (White) 580% / (Green) 590%


CS The figures in parenthesis ( ) are the test conditions: (Black) 34 (70°C [158°F] × 22h) / (Red) 29 (70°C [158°F] × 22h) / (White) 36 (70°C [158°F] × 22h) / (Green) 33 (70°C [158°F] × 22h)

Rebound elasticity: (Black) 30%

# 1

## Soft Black Rubber (NR)

Hardness: A50° (±5°) Thickness: 1–60

Features:  \*Inexpensive as a rubber material

Application Examples

Seals, rubber mats,  
industrial cushioning

Processing Difficulty:

| Cutting | Cutting and Grinding | Bonding |
|---------|----------------------|---------|
| ○       | △                    | ◎       |

Physical Properties Data

TB (Tensile strength) Mpa (kg f/cm<sup>2</sup>): 8.3 (85)


EB (Elongation at break): 570%

CS The figures in parenthesis ( ) are the test conditions: 30 (70°C [158°F] × 22h)

# 2

## Cloth Inserted Black Rubber (NB)

Hardness: A65° (±5°) Thickness: 1–15

Features:  \*Cloth insertion reduces elongation

Application Examples

Seals, rubber mats,  
in-pressure gaskets,  
rubber covers

Processing Difficulty:

| Cutting | Cutting and Grinding | Bonding |
|---------|----------------------|---------|
| ◎       | ◎                    | ○       |

Physical Properties Data

\*The rubber is the same as the Natural Rubber (NR) Black

TB (Tensile strength) Mpa (kg f/cm<sup>2</sup>): Teton cloth 32.3


EB (Elongation at break): 11%

CS The figures in parenthesis ( ) are the test conditions: —

# 3

## Abrasion Resistance (BR)

Hardness: A65° (±5°) Thickness: 2–50

Features:  \*Strong abrasion resistance compared to the Regular Sheet

Application Examples

Rubber mats,  
gravel conveyor belts

Processing Difficulty:

| Cutting | Cutting and Grinding | Bonding |
|---------|----------------------|---------|
| ◎       | △                    | ○       |

Physical Properties Data

TB (Tensile strength) Mpa (kg f/cm<sup>2</sup>): 13.9 (142)

EB (Elongation at break): 410%

CS The figures in parenthesis ( ) are

the test conditions: 20 (70°C [158°F] × 22h)

Loss in quantity of abrasion in an Akron abrasion test cc/1000 times: 0.460

Note: Abrasion resistance

# 4

## White Spring Fine Quality 60%

Hardness: A40° (±5°) Thickness: 2–50

Features:  

Application Examples

Hopper lining

Processing Difficulty:

| Cutting | Cutting and Grinding | Bonding |
|---------|----------------------|---------|
| △       | △                    | ○       |

Physical Properties Data

TB (Tensile strength) Mpa (kg f/cm<sup>2</sup>): 15.6 (159)

EB (Elongation at break): 700%

CS The figures in parenthesis ( ) are

the test conditions: 17 (70°C [158°F] × 22h)

# 5

## Thin Rubber 40%

Hardness: A50° (±5°) Thickness: 1–50

Features:  

# 6

Application Examples

Rubber bands, industrial cushioning, vacuum materials

Processing Difficulty:

| Cutting | Cutting and Grinding | Bonding |
|---------|----------------------|---------|
| △       | △                    | ◎       |

Physical Properties Data

TB (Tensile strength) Mpa (kg f/cm<sup>2</sup>): 10.4 (106)

EB (Elongation at break): 630%

CS The figures in parenthesis ( ) are

the test conditions: 20 (70°C [158°F] × 22h)

## Thin Rubber 60%

Hardness: A45° (±5°) Thickness: 1–20

Features:  

# 7

Application Examples

Rubber bands, industrial cushioning, vacuum materials

Processing Difficulty:

| Cutting | Cutting and Grinding | Bonding |
|---------|----------------------|---------|
| △       | △                    | ○       |

Physical Properties Data

TB (Tensile strength) Mpa (kg f/cm<sup>2</sup>): 16.1 (164)

EB (Elongation at break): 730%

CS The figures in parenthesis ( ) are

the test conditions: 23 (70°C [158°F] × 22h)

## Thin Crepe

Hardness: — Thickness: 0.5–0.8

Features:  \*Superior elongation rate

# 8

Application Examples

Rubber bands

Processing Difficulty:

| Cutting | Cutting and Grinding | Bonding |
|---------|----------------------|---------|
| △       | —                    | △       |

Physical Properties Data


TB (Tensile strength) Mpa (kg f/cm<sup>2</sup>): 22.7 (232)

EB (Elongation at break): 840%

CS The figures in parenthesis ( ) are the test conditions: —

## King Sheet

Hardness: A65° (±5°) Thickness: 3

Features:  \*Wire mesh insertion reduces elongation even more than cloth

# 9

Application Examples

Seals, rubber mats

\*Products that need more strength than with cloth

Processing Difficulty:

| Cutting | Cutting and Grinding | Bonding |
|---------|----------------------|---------|
| ○       | —                    | △       |

Physical Properties Data

TB (Tensile strength) Mpa (kg f/cm<sup>2</sup>): 2.3 (24)

EB (Elongation at break): 28%

CS The figures in parenthesis ( ) are the test conditions: —

## Double-sided Grain Texture Rubber Without Cloth

Hardness: A60° (±5°) Thickness: 1.5–3

Features:  \*A special product in which the grain is applied to both sides of the sheet

# 10

Application Examples

Anti-skid devices

Processing Difficulty:

| Cutting | Cutting and Grinding | Bonding |
|---------|----------------------|---------|
| ◎       | —                    | ◎       |

Physical Properties Data

TB (Tensile strength) Mpa (kg f/cm<sup>2</sup>): 3.1 (23)

EB (Elongation at break): 260%

CS The figures in parenthesis ( ) are the test conditions: —

Heat Resistance Aging:

| ΔHs Type A Experiment Value | ΔTB% Experiment Value | ΔEB% Experiment Value | Experiment Conditions |
|-----------------------------|-----------------------|-----------------------|-----------------------|
| + 7                         | + 14                  | - 20                  | 70°C [158°F] × 70h    |

Oil Resistance:

| JIS#1 ΔV% Experiment Value | JIS#3 ΔV% Experiment Conditions | Experiment Conditions |
|----------------------------|---------------------------------|-----------------------|
| —                          | —                               | —                     |

## Chloroprene Rubber (CR)

Hardness: A60° – A65° (±5°) Thickness: 0.3 – 120 (Varies depending on the color) Colors: Black / White / Ash

Features:   

Application Examples  
Seals, outdoor rubber mats

Processing Difficulty (Black):

| Cutting | Cutting and Grinding | Bonding |
|---------|----------------------|---------|
| ◎       | ◎                    | ◎       |

Processing Difficulty (White / Ash):

| Cutting | Cutting and Grinding | Bonding |
|---------|----------------------|---------|
| ◎       | ◎                    | ○       |

Physical Properties Data

TB (Tensile strength) Mpa (kg f/cm<sup>2</sup>): (Black) 8.2 (84) / (White) 7.3 (74) / (Ash) 7.4 (75)

EB (Elongation at break): (Black) 330% / (White) 620% / (Ash) 600%

CS The figures in parenthesis ( ) are

the test conditions: (Black) 15 (70°C [158°F] × 22h) / (White) 23 (70°C [158°F] × 22h) / (Ash) 28 (70°C [158°F] × 22h)

Heat Resistance Aging:

| ΔHs Type A Experiment Value           | ΔTB% Experiment Value                | ΔEB% Experiment Value                 | Experiment Conditions   |
|---------------------------------------|--------------------------------------|---------------------------------------|---|
| (Black) +13 / (White) +13 / (Ash) +13 | (Black) -2 / (White) -11 / (Ash) -11 | (Black) -26 / (White) -20 / (Ash) -20 | (Black) 100°C [212°F] × 70h / (White) 100°C [212°F] × 70h / (Ash) 100°C [212°F] × 70h |

Oil Resistance:

| JIS#1 ΔV% Experiment Value            | JIS#3 ΔV% Experiment Conditions       | Experiment Conditions   |
|---------------------------------------|---------------------------------------|---|
| (Black) +14 / (White) +10 / (Ash) +10 | (Black) +86 / (White) +89 / (Ash) +89 | (Black) 100°C [212°F] × 70h / (White) 100°C [212°F] × 70h / (Ash) 100°C [212°F] × 70h |

# 11

## Chloroprene Rubber (CR) 45°

Hardness: A45° (±5°) Thickness: 1 – 60

Features:   

Application Examples  
Seals, outdoor rubber mats

Processing Difficulty:

| Cutting | Cutting and Grinding | Bonding |
|---------|----------------------|---------|
| ○       | △                    | ◎       |

Physical Properties Data

TB (Tensile strength) Mpa (kg f/cm<sup>2</sup>): 5.5 (56)

EB (Elongation at break): 380%

CS The figures in parenthesis ( ) are the test conditions: 69 (100°C [212°F] × 24h)

Heat Resistance Aging:

| ΔHs Type A Experiment Value | ΔTB% Experiment Value | ΔEB% Experiment Value | Experiment Conditions |
|-----------------------------|-----------------------|-----------------------|-----------------------|
| + 6                         | - 4                   | - 14                  | 100°C [212°F] × 72h   |

Oil Resistance:

| JIS#1 ΔV% Experiment Value | JIS#3 ΔV% Experiment Conditions | Experiment Conditions |
|----------------------------|---------------------------------|-----------------------|
| -                          | -                               | -                     |

# 12

## Chloroprene Rubber (CR) 80°

Hardness: A80° (±5°) Thickness: 1 – 30

Features:   

Application Examples  
Seals, cushioning

Processing Difficulty:

| Cutting | Cutting and Grinding | Bonding |
|---------|----------------------|---------|
| ◎       | ◎                    | ◎       |

Physical Properties Data

TB (Tensile strength) Mpa (kg f/cm<sup>2</sup>): 8.6(88)

EB (Elongation at break): 310%

CS The figures in parenthesis ( ) are the test conditions: 15 (70°C [158°F] × 22h)

Heat Resistance Aging:

| ΔHs Type A Experiment Value | ΔTB% Experiment Value | ΔEB% Experiment Value | Experiment Conditions |
|-----------------------------|-----------------------|-----------------------|-----------------------|
| + 4                         | - 5                   | - 36                  | 100°C [212°F] × 70h   |

Oil Resistance:

| JIS#1 ΔV% Experiment Value | JIS#3 ΔV% Experiment Conditions | Experiment Conditions |
|----------------------------|---------------------------------|-----------------------|
| + 17                       | + 98                            | 100°C [212°F] × 70h   |

# 13

## Chloroprene Rubber (CR) 90°

Hardness: A90° (±5°) Thickness: 1 – 50

Features:   

Application Examples  
Seals, cushioning

Processing Difficulty:

| Cutting | Cutting and Grinding | Bonding |
|---------|----------------------|---------|
| ◎       | ◎                    | ◎       |

Physical Properties Data

TB (Tensile strength) Mpa (kg f/cm<sup>2</sup>): 8.4(86)

EB (Elongation at break): 190%

CS The figures in parenthesis ( ) are the test conditions: 33 (70°C [158°F] × 22h)

Heat Resistance Aging:

| ΔHs Type A Experiment Value | ΔTB% Experiment Value | ΔEB% Experiment Value | Experiment Conditions |
|-----------------------------|-----------------------|-----------------------|-----------------------|
| + 2                         | - 4                   | - 17                  | 100°C [212°F] × 70h   |

Oil Resistance:

| JIS#1 ΔV% Experiment Value | JIS#3 ΔV% Experiment Conditions | Experiment Conditions |
|----------------------------|---------------------------------|-----------------------|
| + 11                       | + 82                            | 100°C [212°F] × 70h   |

# 14

## Chloroprene Rubber (CR) 55°

Hardness: A55° (±5°) Thickness: 50

Features:   

Application Examples  
Bridge collapse prevention buffer rubber

Processing Difficulty:

| Cutting | Cutting and Grinding | Bonding |
|---------|----------------------|---------|
| ◎       | ○                    | ◎       |

Physical Properties Data

TB (Tensile strength) Mpa (kg f/cm<sup>2</sup>): 7.8(80)

EB (Elongation at break): 550%

CS The figures in parenthesis ( ) are the test conditions: 14 (70°C [158°F] × 22h)

Heat Resistance Aging:

| ΔHs Type A Experiment Value | ΔTB% Experiment Value | ΔEB% Experiment Value | Experiment Conditions |
|-----------------------------|-----------------------|-----------------------|-----------------------|
| + 9                         | + 5                   | - 20                  | 70°C [158°F] × 70h    |

Oil Resistance:

| JIS#1 ΔV% Experiment Value | JIS#3 ΔV% Experiment Conditions | Experiment Conditions |
|----------------------------|---------------------------------|-----------------------|
| + 18                       | + 51                            | 100°C [212°F] × 70h   |

# 15

## Cloth Inserted Chloroprene Rubber (CR) 16

Hardness: A65° (±5°) Thickness: 1 – 10

Features:    \*Cloth insertion reduces elongation

Application Examples

Seals, outdoor rubber mats

Processing Difficulty:

| Cutting | Cutting and Grinding | Bonding |
|---------|----------------------|---------|
| ◎       | ◎                    | ○       |

Physical Properties Data

TB (Tensile strength) Mpa (kg f/cm<sup>2</sup>): 5.7(58)

EB (Elongation at break): 11%

CS The figures in parenthesis ( ) are the test conditions: —

## ULCR 17

Hardness: A60° (±5°) Thickness: 1 – 5

Features:     \*UL94V-0 compatible product

Application Examples

Seals, outdoor rubber mats

Processing Difficulty:

| Cutting | Cutting and Grinding | Bonding |
|---------|----------------------|---------|
| ◎       | ◎                    | ◎       |

Physical Properties Data

TB (Tensile strength) Mpa (kg f/cm<sup>2</sup>): 9.0 (92)

EB (Elongation at break): 680%

CS The figures in parenthesis ( ) are the test conditions: —

## Acrylonitrile Butadiene Rubber (NBR) 18

Hardness: A70° (±5°) Thickness: 0.5 – 100

Features:  

Application Examples

Oil-based environment seals, cushioning

Processing Difficulty:

| Cutting | Cutting and Grinding | Bonding |
|---------|----------------------|---------|
| ◎       | ◎                    | ◎       |

Physical Properties Data

TB (Tensile strength) Mpa (kg f/cm<sup>2</sup>): 12.2 (124)

EB (Elongation at break): 550%

CS The figures in parenthesis ( ) are the test conditions: 70 (100°C [212°F] × 70h)

Heat Resistance Aging:

| ΔHs Type A Experiment Value | ΔTB% Experiment Value | ΔEB% Experiment Value | Experiment Conditions |
|-----------------------------|-----------------------|-----------------------|-----------------------|
| - 4                         | - 9                   | - 35                  | 100°C [212°F] × 70h   |

Oil Resistance:

| JIS#1 ΔV% Experiment Value | JIS#3 ΔV% Experiment Conditions | Experiment Conditions |
|----------------------------|---------------------------------|-----------------------|
| + 1                        | + 31                            | 100°C [212°F] × 70h   |

## Acrylonitrile Butadiene Rubber (NBR) 50° 19

Hardness: A50° (±5°) Thickness: 2 – 10

Features:  

Application Examples

Oil-based environment seals, cushioning

Processing Difficulty:

| Cutting | Cutting and Grinding | Bonding |
|---------|----------------------|---------|
| ○       | △                    | ◎       |

Physical Properties Data

TB (Tensile strength) Mpa (kg f/cm<sup>2</sup>): 7.5 (78)

EB (Elongation at break): 570%

CS The figures in parenthesis ( ) are the test conditions: 77 (100°C [212°F] × 70h)

Heat Resistance Aging:

| ΔHs Type A Experiment Value | ΔTB% Experiment Value | ΔEB% Experiment Value | Experiment Conditions |
|-----------------------------|-----------------------|-----------------------|-----------------------|
| + 7                         | + 6                   | - 19                  | 100°C [212°F] × 70h   |

Oil Resistance:

| JIS#1 ΔV% Experiment Value | JIS#3 ΔV% Experiment Conditions | Experiment Conditions |
|----------------------------|---------------------------------|-----------------------|
| - 12                       | + 24                            | 100°C [212°F] × 70h   |

## Acrylonitrile Butadiene Rubber (NBR) 90° 20

Hardness: A90° (±5°) Thickness: 1 – 100

Features:  

Application Examples

Oil-based environment seals, cushioning

Processing Difficulty:

| Cutting | Cutting and Grinding | Bonding |
|---------|----------------------|---------|
| ◎       | ◎                    | ◎       |

Physical Properties Data

TB (Tensile strength) Mpa (kg f/cm<sup>2</sup>): 8.7 (89)

EB (Elongation at break): 320%

CS The figures in parenthesis ( ) are the test conditions: 58 (100°C [212°F] × 70h)

Heat Resistance Aging:

| ΔHs Type A Experiment Value | ΔTB% Experiment Value | ΔEB% Experiment Value | Experiment Conditions |
|-----------------------------|-----------------------|-----------------------|-----------------------|
| + 3                         | + 1                   | - 37                  | 100°C [212°F] × 70h   |

Oil Resistance:

| JIS#1 ΔV% Experiment Value | JIS#3 ΔV% Experiment Conditions | Experiment Conditions |
|----------------------------|---------------------------------|-----------------------|
| - 5                        | + 20                            | 100°C [212°F] × 70h   |

## Acrylonitrile Butadiene Rubber (NBR) White 21

Hardness: A65° (±5°) Thickness: 1 – 50

Features:  

Application Examples

Oil-based environment seals, cushioning

Processing Difficulty:

| Cutting | Cutting and Grinding | Bonding |
|---------|----------------------|---------|
| ◎       | ◎                    | ○       |

Physical Properties Data

TB (Tensile strength) Mpa (kg f/cm<sup>2</sup>): 8.5 (87)

EB (Elongation at break): 600%

CS The figures in parenthesis ( ) are the test conditions: 25 (70°C [158°F] × 22h)

Heat Resistance Aging:

| ΔHs Type A Experiment Value | ΔTB% Experiment Value | ΔEB% Experiment Value | Experiment Conditions |
|-----------------------------|-----------------------|-----------------------|-----------------------|
| + 2                         | - 15                  | - 25                  | 70°C [158°F] × 70h    |

Oil Resistance:

| JIS#1 ΔV% Experiment Value | JIS#3 ΔV% Experiment Conditions | Experiment Conditions |
|----------------------------|---------------------------------|-----------------------|
| + 5                        | + 38                            | 100°C [212°F] × 70h   |

## Cloth Inserted Acrylonitrile Butadiene Rubber (NBR)

Hardness: A70° ( $\pm 5^\circ$ ) Thickness: 1 – 15

Features:  \*Cloth insertion reduces elongation

# 22

Application Examples  
Oil-based environment seals, cushioning

Processing Difficulty:

| Cutting | Cutting and Grinding | Bonding |
|---------|----------------------|---------|
| ◎       | ◎                    | ◎       |

Physical Properties Data

TB (Tensile strength) Mpa (kg f/cm<sup>2</sup>): 5.7(58)

EB (Elongation at break): 11%

CS The figures in parenthesis ( ) are the test conditions: —

## For Gasoline Resistance (NBR)

Hardness: A70° ( $\pm 5^\circ$ ) Thickness: 1 – 3

Features:  

# 23

Application Examples  
Oil-based environment seals, cushioning

Processing Difficulty:

| Cutting | Cutting and Grinding | Bonding |
|---------|----------------------|---------|
| ◎       | ◎                    | ○       |

Physical Properties Data

TB (Tensile strength) Mpa (kg f/cm<sup>2</sup>): 15.6 (159)

EB (Elongation at break): 360%

CS The figures in parenthesis ( ) are the test conditions: 22 (100°C [212°F] × 24h)

Heat Resistance Aging:

| Δ Hs Type A Experiment Value | Δ TB% Experiment Value | Δ EB% Experiment Value | Experiment Conditions |
|------------------------------|------------------------|------------------------|-----------------------|
| + 11                         | - 8                    | - 41                   | 100°C [212°F] × 72h   |

Oil Resistance:

| JIS#1 ΔV% Experiment Value | JIS#3 ΔV% Experiment Conditions | Experiment Conditions |
|----------------------------|---------------------------------|-----------------------|
| —                          | -4                              | 100°C [212°F] × 72h   |

## Ethylene-propylene Terpolymer Rubber (EPT / EPDM)

Hardness: A60° – A65° ( $\pm 5^\circ$ ) Thickness: 1 – 50 (Varies depending on the color) Colors: Black / White / Ash

Features:    

# 24

Application Examples

(Black / Ash) Seals and gaskets for marine and outdoor environments  
(White) Foodstuff compatible Ministry of Health and Welfare Notification No. 201 (formerly No. 85)

Processing Difficulty (Black):

| Cutting | Cutting and Grinding | Bonding |
|---------|----------------------|---------|
| ◎       | ○                    | ○       |

Physical Properties Data

TB (Tensile strength) Mpa (kg f/cm<sup>2</sup>): (Black) 12.8 (131) / (White) 9.2 (94) / (Ash) 8.6 (91)

EB (Elongation at break): (Black) 490% / (White) 570% / (Ash) 650%

CS The figures in parenthesis ( ) are the test conditions: (Black) 10 (70°C [158°F] × 22h) / (White) 42 (70°C [158°F] × 22h) / (Ash) 20 (70°C [158°F] × 22h)

Heat Resistance Aging:

| Δ Hs Type A Experiment Value       | Δ TB% Experiment Value               | Δ EB% Experiment Value                | Experiment Conditions   |
|------------------------------------|--------------------------------------|---------------------------------------|---|
| (Black) +4 / (White) +6 / (Ash) +5 | (Black) +10 / (White) -17 / (Ash) -5 | (Black) -19 / (White) -25 / (Ash) -19 | (Black) 100°C [212°F] × 70h / (White) 100°C [212°F] × 70h / (Ash) 100°C [212°F] × 70h |

## B-YAMA Rubber

Hardness: A70° – A75° ( $\pm 5^\circ$ ) Thickness: 3 – 5 (Varies depending on the color) Colors: Black / Ash / Green

Features:  

# 25

Application Examples  
Floor mats, anti-skid devices

Processing Difficulty (Black):

| Cutting | Cutting and Grinding | Bonding |
|---------|----------------------|---------|
| ◎       | △                    | ○       |

Physical Properties Data

TB (Tensile strength) Mpa (kg f/cm<sup>2</sup>): (Black) 5.8 (59) / (Ash) 4.9 (50) / (Green) 4.9 (50)

EB (Elongation at break): (Black) 250% / (Ash) 400% / (Green) 400%

CS The figures in parenthesis ( ) are the test conditions: (Black) — / (Ash) — / (Green) —

## CR Sponge

Hardness: Asker C25° (±5°)

Thickness: 1 – 40

Features:



\*UL94HF-1 compatible product

# 26

Application Examples

Cushioning materials, sealing materials

Processing Difficulty:

| Cutting | Cutting and Grinding | Bonding |
|---------|----------------------|---------|
| ○       | ○                    | ◎       |

Physical Properties Data

TB (Tensile strength) Mpa (kg f/cm<sup>2</sup>): 0.59 (6)

EB (Elongation at break): 190%

CS The figures in parenthesis ( ) are the test conditions: 15.3 (ASTM D 1056)

## CR Sponge White

Hardness: Asker C23° (±5°)

Thickness: 1 – 30

Features:



# 27

Application Examples

Cushioning materials, sealing materials

Processing Difficulty:

| Cutting | Cutting and Grinding | Bonding |
|---------|----------------------|---------|
| ○       | ○                    | ◎       |

Physical Properties Data

TB (Tensile strength) Mpa (kg f/cm<sup>2</sup>): 1.07 (11)

EB (Elongation at break): 180%

CS The figures in parenthesis ( ) are the test conditions: 78 (70°C [158°F] × 22h)

## Soft CR Sponge

Hardness: Asker C10° (±5°)

Thickness: 1 – 30

Features:



\*UL94HF-1 compatible product

# 28

Application Examples

Cushioning materials, sealing materials

Processing Difficulty:

| Cutting | Cutting and Grinding | Bonding |
|---------|----------------------|---------|
| △       | △                    | ◎       |

Physical Properties Data

TB (Tensile strength) Mpa (kg f/cm<sup>2</sup>): 0.49 (5)

EB (Elongation at break): 230%

CS The figures in parenthesis ( ) are the test conditions: 22.5 (ASTM D 1056)

## NBR Sponge

Hardness: Asker C15° (±5°)

Thickness: 1 – 30

Features:



# 29

Application Examples

Cushioning materials, sealing materials

Processing Difficulty:

| Cutting | Cutting and Grinding | Bonding |
|---------|----------------------|---------|
| ○       | ○                    | ◎       |

Physical Properties Data

TB (Tensile strength) Mpa (kg f/cm<sup>2</sup>): 0.59 (6)

EB (Elongation at break): 240%

CS The figures in parenthesis ( ) are the test conditions: 26.4 (ASTM D 1056)

## EPT Sponge

Hardness: Asker C20° (±5°)

Thickness: 1 – 30

Features:



# 30

Application Examples

Cushioning materials, sealing materials

Processing Difficulty:

| Cutting | Cutting and Grinding | Bonding |
|---------|----------------------|---------|
| ○       | ○                    | ◎       |

Physical Properties Data

TB (Tensile strength) Mpa (kg f/cm<sup>2</sup>): 0.88 (9)

EB (Elongation at break): 210%

CS The figures in parenthesis ( ) are the test conditions: 21.4 (ASTM D 1056)

## Chloro-sulfonated Polyethylene Rubber (CSM) \*Popular name = Hypalon

# 31

Hardness: A70° ( $\pm 5^\circ$ ) Thickness: 1 – 10

Features:   

Application Examples

Chemical resistant (acid resistant) seals

Processing Difficulty (Black):

| Cutting | Cutting and Grinding | Bonding |
|---------|----------------------|---------|
| ◎       | △                    | △       |

Physical Properties Data

TB (Tensile strength) Mpa (kg f/cm<sup>2</sup>): 11 (112)

EB (Elongation at break): 290%

CS The figures in parenthesis ( ) are the test conditions: 77 (100°C [212°F] × 22h)

## Isobutene-isoprene Rubber (IIR)

# 32

Hardness: A65° ( $\pm 5^\circ$ ) Thickness: 1 – 25

Features:   

Application Examples

Gas pipes, acid resistant seals

Processing Difficulty:

| Cutting | Cutting and Grinding | Bonding |
|---------|----------------------|---------|
| ◎       | △                    | △       |

Physical Properties Data

TB (Tensile strength) Mpa (kg f/cm<sup>2</sup>): 7.5 (77)

EB (Elongation at break): 380%

CS The figures in parenthesis ( ) are

the test conditions: 40 (100°C [212°F] × 22h)

## Isobutene-isoprene Rubber (IIR) White

# 33

Hardness: A65° ( $\pm 5^\circ$ ) Thickness: 1 – 3

Features:    

Application Examples

Gas pipes, acid resistant seals

Processing Difficulty:

| Cutting | Cutting and Grinding | Bonding |
|---------|----------------------|---------|
| ◎       | △                    | △       |

Physical Properties Data

TB (Tensile strength) Mpa (kg f/cm<sup>2</sup>): 9.1 (93)

EB (Elongation at break): 630%

CS The figures in parenthesis ( ) are the test conditions: —

Note: Heat resistance and chemical resistance

## Silicone Rubber (SR) 50°

Hardness: A50° (±5°) Thickness: 0.3 – 60

Features:   

# 34

Application Examples  
Medical care, foodstuffs  
and electrical equipment,  
heat resistant seals

Processing Difficulty:

| Cutting | Cutting and Grinding | Bonding |
|---------|----------------------|---------|
| ◎       | △                    | ○       |

Physical Properties Data

TB (Tensile strength) Mpa (kg f/cm<sup>2</sup>): 8.8 (90)

EB (Elongation at break): 330%

CS The figures in parenthesis ( ) are

the test conditions: 16 (180°C [356°F] × 22h)

**Note:** Heat resistance and chemical resistance  
Available for use in a wide temperature  
range of -60 – 200°C

## Silicone Rubber (SR) 60°

Hardness: A60° (±5°) Thickness: 1 – 5

Features:   

# 35

Application Examples  
Medical care, foodstuffs  
and electrical equipment,  
heat resistant seals

Processing Difficulty:

| Cutting | Cutting and Grinding | Bonding |
|---------|----------------------|---------|
| ◎       | △                    | ○       |

Physical Properties Data

TB (Tensile strength) Mpa (kg f/cm<sup>2</sup>): 6.9 (70)

EB (Elongation at break): 230%

CS The figures in parenthesis ( ) are

the test conditions: 13 (180°C [356°F] × 22h)

**Note:** Heat resistance and chemical resistance  
Available for use in a wide temperature  
range of -60 – 200°C

## Silicone Rubber (SR) 70°

Hardness: A70° (±5°) Thickness: 0.5 – 60

Features:   

# 36

Application Examples  
Medical care, foodstuffs  
and electrical equipment,  
heat resistant seals

Processing Difficulty:

| Cutting | Cutting and Grinding | Bonding |
|---------|----------------------|---------|
| ◎       | ○                    | ○       |

Physical Properties Data

TB (Tensile strength) Mpa (kg f/cm<sup>2</sup>): 7.4 (75)

EB (Elongation at break): 300%

CS The figures in parenthesis ( ) are

the test conditions: 13 (180°C [356°F] × 22h)

**Note:** Heat resistance and chemical resistance  
Available for use in a wide temperature  
range of -60 – 200°C

## Silicone Rubber (SR) 40°

Hardness: A40° (±5°) Thickness: 10

Features:   

# 37

Application Examples  
Medical care, foodstuffs  
and electrical equipment,  
heat resistant seals

Processing Difficulty:

| Cutting | Cutting and Grinding | Bonding |
|---------|----------------------|---------|
| △       | △                    | ○       |

Physical Properties Data

TB (Tensile strength) Mpa (kg f/cm<sup>2</sup>): 7.7 (79)

EB (Elongation at break): 430%

CS The figures in parenthesis ( ) are

the test conditions: 18 (180°C [356°F] × 22h)

**Note:** Heat resistance and chemical resistance  
Available for use in a wide temperature  
range of -60 – 200°C

## Red Silicone Rubber (SR) 50°

Hardness: A50° (±5°) Thickness: 0.5 – 30

Features:   

# 38

Application Examples  
Medical care, foodstuffs  
and electrical equipment,  
heat resistant seals

Processing Difficulty:

| Cutting | Cutting and Grinding | Bonding |
|---------|----------------------|---------|
| ◎       | △                    | ○       |

Physical Properties Data

TB (Tensile strength) Mpa (kg f/cm<sup>2</sup>): 9.3 (95)

EB (Elongation at break): 350%

CS The figures in parenthesis ( ) are

the test conditions: 17 (180°C [356°F] × 22h)

**Note:** Heat resistance and chemical resistance  
Available for use in a wide temperature  
range of -60 – 200°C

## Tear Resistant Silicone Rubber

Hardness: A43° (±5°) Thickness: 1 – 5

Features:    \*Resistant to tearing

# 39

Application Examples  
Electronic equipment  
components,  
food chutes

Processing Difficulty:

| Cutting | Cutting and Grinding | Bonding |
|---------|----------------------|---------|
| ◎       | △                    | ○       |

Physical Properties Data

TB (Tensile strength) Mpa (kg f/cm<sup>2</sup>): 10.2 (104)

EB (Elongation at break): 670%

CS The figures in parenthesis ( ) are the test conditions: —

**Note:** Heat resistance and chemical resistance



## Silicone Rubber Sponge

Hardness: E35° (+10° - 5°)

Thickness: 2 - 20

Features:



Application Examples

Heat insulating materials, heat resistant cushioning materials

Processing Difficulty:

| Cutting | Cutting and Grinding | Bonding |
|---------|----------------------|---------|
| ○       | △                    | ○       |

Physical Properties Data

TB (Tensile strength) Mpa (kg f/cm<sup>2</sup>): 2.1 (21)

EB (Elongation at break): 300%

CS The figures in parenthesis ( ) are

the test conditions: 19 (150°C [302°F] × 24h)

**Note:** Heat resistance and chemical resistance  
Available for use in a wide temperature range of -60 - 200°C

# 40

## White Silicone Rubber Sponge

Hardness: E35° (+10° - 5°)

Thickness: 3 - 5

Features:



Application Examples

Heat insulating materials, heat resistant cushioning materials

Processing Difficulty:

| Cutting | Cutting and Grinding | Bonding |
|---------|----------------------|---------|
| ○       | △                    | ○       |

Physical Properties Data

TB (Tensile strength) Mpa (kg f/cm<sup>2</sup>): 2.1 (21)

EB (Elongation at break): 300%

CS The figures in parenthesis ( ) are

the test conditions: 19 (150°C [302°F] × 24h)

**Note:** Heat resistance and chemical resistance  
Available for use in a wide temperature range of -60 - 200°C

# 41

## Silicone Rubber Sponge 15°

Hardness: E15° (±5°) Thickness: 2 - 30

Features:



Application Examples

Heat insulating materials, heat resistant cushioning materials

Processing Difficulty:

| Cutting | Cutting and Grinding | Bonding |
|---------|----------------------|---------|
| △       | -                    | ○       |

Physical Properties Data

TB (Tensile strength) Mpa (kg f/cm<sup>2</sup>): 1 (10.2)

EB (Elongation at break): 250%

CS The figures in parenthesis ( ) are

the test conditions: 8 (150°C [302°F] × 24h)

**Note:** Heat resistance and chemical resistance  
Available for use in a wide temperature range of -60 - 200°C

# 42

## Fluoro Rubber (FR)

Hardness: A80° (±5°) Thickness: 0.5 - 50

Features:



Application Examples

Corrosion resistant and chemical resistant seals, semiconductor-related products

Processing Difficulty:

| Cutting | Cutting and Grinding | Bonding |
|---------|----------------------|---------|
| ◎       | ◎                    | ○       |

Physical Properties Data

TB (Tensile strength) Mpa (kg f/cm<sup>2</sup>): 12.5 (128)

EB (Elongation at break): 330%

CS The figures in parenthesis ( ) are

the test conditions: 20 (150°C [302°F] × 70h)

**Note:** Heat resistance and chemical resistance  
Heat resistance aging is superior to Silicone

# 43

## Fluorine Sponge

Hardness: E35° (±10°) Thickness: 2 - 10

Features:



Application Examples

Heat-resistant cushions, semiconductor-related products

Processing Difficulty:

| Cutting | Cutting and Grinding | Bonding |
|---------|----------------------|---------|
| ○       | △                    | ○       |

Physical Properties Data

TB (Tensile strength) Mpa (kg f/cm<sup>2</sup>): 2.77 (28.3)

EB (Elongation at break): 210%

CS The figures in parenthesis ( ) are

the test conditions: 88 (150°C [302°F] × 70h)

**Note:** Heat resistance and chemical resistance

# 44

## Aflas

Hardness: A80° (±5°) Thickness: 3

Features:



\*Moisture resistance

Application Examples

Heat-resistant polluted environment and steam pipe seals

Processing Difficulty:

| Cutting | Cutting and Grinding | Bonding |
|---------|----------------------|---------|
| ◎       | ◎                    | ○       |

Physical Properties Data

TB (Tensile strength) Mpa (kg f/cm<sup>2</sup>): 17.6 (180)

EB (Elongation at break): 210%

CS The figures in parenthesis ( ) are

the test conditions: 27 (150°C [302°F] × 22h)

**Note:** Heat resistance and chemical resistance

# 45

## Ether-based Urethane Rubber (UR) 90° 46

Hardness: A90° (±5°) Thickness: 1 – 100

Features:  

Application Examples  
Seals, cushioning, sealing materials, rollers

Processing Difficulty:

| Cutting | Cutting and Grinding | Bonding |
|---------|----------------------|---------|
| ◎       | ◎                    | ○       |

Physical Properties Data

TB (Tensile strength) Mpa (kg f/cm<sup>2</sup>): 35.1 (358)

EB (Elongation at break): 430%

CS The figures in parenthesis ( ) are

the test conditions: 30 (70°C [158°F] × 24h)

Loss in quantity of abrasion in an Akron abrasion test cc/1000 times: 0.05

Rebound elasticity: 37%

## Ether-based Urethane Rubber (UR) 90° 47

Hardness: A90° (±5°) Thickness: 1 – 100

Features:  

Application Examples  
Seals, cushioning, sealing materials, rollers

Processing Difficulty:

| Cutting | Cutting and Grinding | Bonding |
|---------|----------------------|---------|
| ◎       | ◎                    | ◎       |

Physical Properties Data

TB (Tensile strength) Mpa (kg f/cm<sup>2</sup>): 52.1 (532)

EB (Elongation at break): 430%

CS The figures in parenthesis ( ) are

the test conditions: 27 (70°C [158°F] × 24h)

Loss in quantity of abrasion in an Akron abrasion test cc/1000 times: 0.034

Rebound elasticity: 34%

## Ester-based Urethane Rubber (UR) 70° 48

Hardness: A70° (±5°) Thickness: 1 – 50

Features:  

Application Examples  
Seals, cushioning, sealing materials, rollers

Processing Difficulty:

| Cutting | Cutting and Grinding | Bonding |
|---------|----------------------|---------|
| ◎       | ○                    | ◎       |

Physical Properties Data

TB (Tensile strength) Mpa (kg f/cm<sup>2</sup>): 27.7 (283)

EB (Elongation at break): 630%

CS The figures in parenthesis ( ) are

the test conditions: 28 (70°C [158°F] × 24h)

Loss in quantity of abrasion in an Akron abrasion test cc/1000 times: 0.055

Rebound elasticity: 50%

## Ester-based Urethane Rubber (UR) 60° 49

Hardness: A60° (±5°) Thickness: 1 – 50

Features:  

Application Examples  
Seals, cushioning, sealing materials, rollers

Processing Difficulty:

| Cutting | Cutting and Grinding | Bonding |
|---------|----------------------|---------|
| ○       | △                    | ◎       |

Physical Properties Data

TB (Tensile strength) Mpa (kg f/cm<sup>2</sup>): 23.7 (242)

EB (Elongation at break): 740%

CS The figures in parenthesis ( ) are

the test conditions: 37 (70°C [158°F] × 24h)

Loss in quantity of abrasion in an Akron abrasion test cc/1000 times: 0.057

Rebound elasticity: 40%

## Ester-based Urethane Rubber (UR) 50° 50

Hardness: A50° (±5°) Thickness: 1 – 50

Features:  

Application Examples  
Seals, cushioning, sealing materials, rollers

Processing Difficulty:

| Cutting | Cutting and Grinding | Bonding |
|---------|----------------------|---------|
| ○       | △                    | ◎       |

Physical Properties Data

TB (Tensile strength) Mpa (kg f/cm<sup>2</sup>): 26.6 (271)

EB (Elongation at break): 610%

CS The figures in parenthesis ( ) are

the test conditions: 3 (70°C [158°F] × 24h)

Loss in quantity of abrasion in an Akron abrasion test cc/1000 times: 0.057

Rebound elasticity: 50%

## Thermoplastic Urethane Rubber Sheet 51

Hardness: A90° (±5°) Thickness: 0.3 – 0.5

Features:   \*Load bearing capacity

Application Examples  
Seals, cushioning, sealing materials, rollers

Processing Difficulty:

Only cutting is possible because the thickness is thin at 0.3T – 0.5T Bonding is performed with lap joints

Physical Properties Data

TB (Tensile strength) Mpa (kg f/cm<sup>2</sup>): 45 (459)

EB (Elongation at break): 680%

CS The figures in parenthesis ( ) are

the test conditions: 3 (70°C [158°F] × 22h)

Loss in quantity of abrasion in an Akron abrasion test cc/1000 times: 0.02

Rebound elasticity: 52%

## Urethane Rubber 98°

Hardness: A98° (±5°)

Thickness: Various sheets, round poles and pipes

Features:   \*Ether-based

# 52

Application Examples

Seals, cushioning, sealing materials, rollers

Processing Difficulty:

| Cutting | Cutting and Grinding | Bonding |
|---------|----------------------|---------|
| ◎       | ◎                    | ○       |

Physical Properties Data

TB (Tensile strength) Mpa (kg f/cm<sup>2</sup>): 50.8 (518)

EB (Elongation at break): 320%

CS The figures in parenthesis ( ) are the test conditions: —

## Urethane Rubber 95°

Hardness: A95° (±5°)

Thickness: Various sheets, round poles and pipes

Features:   \*Ether-based

# 53

Application Examples

Seals, cushioning, sealing materials, rollers

Processing Difficulty:

| Cutting | Cutting and Grinding | Bonding |
|---------|----------------------|---------|
| ◎       | ◎                    | ○       |

Physical Properties Data

TB (Tensile strength) Mpa (kg f/cm<sup>2</sup>): 43.4 (443)

EB (Elongation at break): 460%

CS The figures in parenthesis ( ) are the test conditions: —

## Urethane Rubber 90°

Hardness: A90° (±5°)

Thickness: Various sheets, round poles and pipes

Features:   \*Ether-based

# 54

Application Examples

Seals, cushioning, sealing materials, rollers

Processing Difficulty:

| Cutting | Cutting and Grinding | Bonding |
|---------|----------------------|---------|
| ◎       | ◎                    | ○       |

Physical Properties Data

TB (Tensile strength) Mpa (kg f/cm<sup>2</sup>): 11.5 (117)

EB (Elongation at break): 730%

CS The figures in parenthesis ( ) are the test conditions: —

## Urethane Rubber 80°

Hardness: A80° (±5°)

Thickness: Various sheets, round poles and pipes

Features:   \*Ether-based

# 55

Application Examples

Seals, cushioning, sealing materials, rollers

Processing Difficulty:

| Cutting | Cutting and Grinding | Bonding |
|---------|----------------------|---------|
| ◎       | ◎                    | ○       |

Physical Properties Data

TB (Tensile strength) Mpa (kg f/cm<sup>2</sup>): 45.9 (468)

EB (Elongation at break): 490%

CS The figures in parenthesis ( ) are the test conditions: —

## Urethane Rubber 70°

Hardness: A70° (±5°)

Thickness: Various sheets, round poles and pipes

Features:   \*Ether-based

# 56

Application Examples

Seals, cushioning, sealing materials, rollers

Processing Difficulty:

| Cutting | Cutting and Grinding | Bonding |
|---------|----------------------|---------|
| ◎       | ○                    | ○       |

Physical Properties Data

TB (Tensile strength) Mpa (kg f/cm<sup>2</sup>): 15.2 (155)

EB (Elongation at break): 910%

CS The figures in parenthesis ( ) are the test conditions: —

## Urethane Rubber 60°

Hardness: A60° (±5°)

Thickness: Various sheets, round poles and pipes

Features:   \*Ether-based

# 57

Application Examples

Seals, cushioning, sealing materials, rollers

Processing Difficulty:

| Cutting | Cutting and Grinding | Bonding |
|---------|----------------------|---------|
| ○       | △                    | ○       |

Physical Properties Data

TB (Tensile strength) Mpa (kg f/cm<sup>2</sup>): 43.3 (442)

EB (Elongation at break): 610%

CS The figures in parenthesis ( ) are the test conditions: —

## Urethane Rubber 50°

Hardness: A50° (±5°)

Thickness: Various sheets, round poles and pipes

Features:   \*Ether-based

# 58

Application Examples

Seals, cushioning, sealing materials, rollers

Processing Difficulty:

| Cutting | Cutting and Grinding | Bonding |
|---------|----------------------|---------|
| ○       | △                    | ○       |

Physical Properties Data

TB (Tensile strength) Mpa (kg f/cm<sup>2</sup>): 27.4 (279)

EB (Elongation at break): 570%

CS The figures in parenthesis ( ) are the test conditions: —

## Urethane Rubber 40°

Hardness: A40° (±5°)

Thickness: Various sheets, round poles and pipes

Features:   \*Ether-based

# 59

Application Examples

Seals, cushioning, sealing materials, rollers

Processing Difficulty:

| Cutting | Cutting and Grinding | Bonding |
|---------|----------------------|---------|
| △       | △                    | ○       |

Physical Properties Data

TB (Tensile strength) Mpa (kg f/cm<sup>2</sup>): 23.2 (237)

EB (Elongation at break): 640%

CS The figures in parenthesis ( ) are the test conditions: —

## Urethane Rubber 30°

Hardness: A30° (±5°)

Thickness: Various sheets, round poles and pipes

Features:   \*Ether-based

# 60

Application Examples

Seals, cushioning, sealing materials, rollers

Processing Difficulty:

| Cutting | Cutting and Grinding | Bonding |
|---------|----------------------|---------|
| △       | △                    | ○       |

Physical Properties Data

TB (Tensile strength) Mpa (kg f/cm<sup>2</sup>): 4.1 (42)

EB (Elongation at break): 680%

CS The figures in parenthesis ( ) are the test conditions: —

## REP-2 Type / 5 Type

\*The attached sample is the 5 (102Ω) Type  
Hardness: A65° – A70° (±5°) Thickness: 1 – 3

# 61

Features:  \*Conductivity and static electricity protection

Application Examples

Floor mats, desk mats and curtains

Processing Difficulty:

| Cutting | Cutting and Grinding | Bonding |
|---------|----------------------|---------|
| ◎       | △                    | △       |

Physical Properties Data

TB (Tensile strength) Mpa (kg f/cm<sup>2</sup>): 15.4 (157) / 13.1 (134)

EB (Elongation at break): 450% / 350%

CS The figures in parenthesis ( ) are the test conditions: 0.9 × 10<sup>2</sup>Ω / 2.0 × 10<sup>5</sup>Ω

Heat Resistance Aging:

| Δ Hs Type A Experiment Value | Δ TB% Experiment Value | Δ EB% Experiment Value | Experiment Conditions |
|------------------------------|------------------------|------------------------|-----------------------|
| + 1 / + 1                    | + 8 / + 8              | - 10 / - 10            | 70°C [158°F] × 72h    |

Oil Resistance:

| JIS#1 ΔV% Experiment Value | JIS#3 ΔV% Experiment Conditions | Experiment Conditions |
|----------------------------|---------------------------------|-----------------------|
| - / -                      | - / -                           | -                     |

## CEP-2 Type / 5 Type

\*The attached sample is the 5 (102Ω) Type  
Hardness: A65° – A70° (±5°) Thickness: 1 – 3

# 62

Features:  \*Conductivity and static electricity protection

Application Examples

Floor mats, desk mats and curtains

Processing Difficulty:

| Cutting | Cutting and Grinding | Bonding |
|---------|----------------------|---------|
| ◎       | △                    | △       |

Physical Properties Data

TB (Tensile strength) Mpa (kg f/cm<sup>2</sup>): 12.7 (130) / 10.2 (104)

EB (Elongation at break): 450% / 380%

CS The figures in parenthesis ( ) are the test conditions: 1.2 × 10<sup>2</sup>Ω / 2.0 × 10<sup>5</sup>Ω

Heat Resistance Aging:

| Δ Hs Type A Experiment Value | Δ TB% Experiment Value | Δ EB% Experiment Value | Experiment Conditions |
|------------------------------|------------------------|------------------------|-----------------------|
| + 11 / + 11                  | + 15 / + 15            | - 25 / - 25            | 100°C [212°F] × 72h   |

Oil Resistance:

| JIS#1 ΔV% Experiment Value | JIS#3 ΔV% Experiment Conditions | Experiment Conditions |
|----------------------------|---------------------------------|-----------------------|
| + 13 / + 15                | + 95 / + 100                    | 100°C [212°F] × 72h   |

## NEP-5

Hardness: A70° (±5°) Thickness: 3

# 63

Features:  \*Conductivity and static electricity protection

Application Examples

Floor mats, desk mats and curtains

Processing Difficulty:

| Cutting | Cutting and Grinding | Bonding |
|---------|----------------------|---------|
| ◎       | △                    | △       |

Physical Properties Data

TB (Tensile strength) Mpa (kg f/cm<sup>2</sup>): 8.8 (90)

EB (Elongation at break): 250%

CS The figures in parenthesis ( ) are the test conditions: 2.0 × 10<sup>5</sup>Ω

Heat Resistance Aging:

| Δ Hs Type A Experiment Value | Δ TB% Experiment Value | Δ EB% Experiment Value | Experiment Conditions |
|------------------------------|------------------------|------------------------|-----------------------|
| + 9                          | + 5                    | - 35                   | 100°C [212°F] × 72h   |

Oil Resistance:

| JIS#1 ΔV% Experiment Value | JIS#3 ΔV% Experiment Conditions | Experiment Conditions |
|----------------------------|---------------------------------|-----------------------|
| - 5                        | + 20                            | 100°C [212°F] × 72h   |

## EC-8

Hardness: A70° (±5°) Thickness: 1 – 2

# 64

Features:  \*Conductivity and static electricity protection

Application Examples

Floor mats, desk mats and curtains

Processing Difficulty:

| Cutting | Cutting and Grinding | Bonding |
|---------|----------------------|---------|
| ◎       | △                    | △       |

Physical Properties Data

TB (Tensile strength) Mpa (kg f/cm<sup>2</sup>): 11.1 (113)

EB (Elongation at break): 670%

CS The figures in parenthesis ( ) are the test conditions: 7.9 × 10<sup>8</sup>Ω

Heat Resistance Aging:

| Δ Hs Type A Experiment Value | Δ TB% Experiment Value | Δ EB% Experiment Value | Experiment Conditions |
|------------------------------|------------------------|------------------------|-----------------------|
| -                            | -                      | -                      | -                     |


Oil Resistance:

| JIS#1 ΔV% Experiment Value | JIS#3 ΔV% Experiment Conditions | Experiment Conditions |
|----------------------------|---------------------------------|-----------------------|
| + 1                        | + 35                            | -                     |

## ECC-8

Hardness: A70° (±5°) Thickness: 2

# 65

Features:  \*Conductivity and static electricity protection

Application Examples

Floor mats, desk mats and curtains

Processing Difficulty:

| Cutting | Cutting and Grinding | Bonding |
|---------|----------------------|---------|
| ◎       | △                    | △       |

Physical Properties Data

TB (Tensile strength) Mpa (kg f/cm<sup>2</sup>): 9.6 (98)

EB (Elongation at break): 460%

CS The figures in parenthesis ( ) are the test conditions: 7.9 × 10<sup>8</sup>Ω

Heat Resistance Aging:

| Δ Hs Type A Experiment Value | Δ TB% Experiment Value | Δ EB% Experiment Value | Experiment Conditions |
|------------------------------|------------------------|------------------------|-----------------------|
| -                            | -                      | -                      | -                     |

Oil Resistance:


| JIS#1 ΔV% Experiment Value | JIS#3 ΔV% Experiment Conditions | Experiment Conditions |
|----------------------------|---------------------------------|-----------------------|
| + 1                        | + 35                            | -                     |

## Conductive CR Sponge (C-4255)

Hardness: Asker C15° (±5°)

# 66

Thickness: 1 – 30

Features:  \*Conductivity and static electricity protection

Application Examples

Anti-static cushioning materials

Processing Difficulty:

| Cutting | Cutting and Grinding | Bonding |
|---------|----------------------|---------|
| △       | △                    | ◎       |

Physical Properties Data

TB (Tensile strength) Mpa (kg f/cm<sup>2</sup>): 0.49 (5)

EB (Elongation at break): 150%

CS The figures in parenthesis ( ) are the test conditions: 30 (ASTM D 1056)

## Soft Vinyl Chloride

Hardness: around A80° (±5°) Thickness: 0.3 – 5 (Varies depending on the color)

Colors: Transparent / Gray / Milk / Black

Features:  

Application Examples  
Desk mats, curtains

Processing Difficulty (Black):

| Cutting | Cutting and Grinding | Bonding |
|---------|----------------------|---------|
| ◎       | —                    | △       |

Physical Properties Data

TB (Tensile strength) Mpa (kg f/cm<sup>2</sup>): (Transparent) 22 (224) / (Gray) 18 (184) / (Milk) 18 (184) / (Black) 18 (184)

EB (Elongation at break): (Transparent) 380% / (Gray) 410% / (Milk) 410% / (Black) 410%

CS The figures in parenthesis ( ) are the test conditions: (Transparent) — / (Gray) — / (Milk) — / (Black) —

Note: Physical properties value of a thickness at 1t

# 67

## Santoprene Black

Hardness: A65° (±5°)

Thickness: 1 – 5

Features:  \* Elastomer with abrasivity

Application Examples  
Floor mats

Processing Difficulty:

| Cutting | Cutting and Grinding | Bonding |
|---------|----------------------|---------|
| ◎       | △                    | ○       |

Physical Properties Data

TB (Tensile strength) Mpa (kg f/cm<sup>2</sup>): 16.5 (168)

EB (Elongation at break): 480%

CS The figures in parenthesis ( ) are the test conditions: —

# 68

## Flat Vinyl Mat Green

Hardness: — (—)

Thickness: 1.2 – 2

Features: 

Application Examples  
Soundproofing and non-slip effects, floor mats, desk mats

Processing Difficulty:

| Cutting | Cutting and Grinding | Bonding |
|---------|----------------------|---------|
| ◎       | △                    | ○       |

Physical Properties Data

TB (Tensile strength) Mpa (kg f/cm<sup>2</sup>): 2.3 (23)

EB (Elongation at break): 240%

CS The figures in parenthesis ( ) are the test conditions: —

# 69

## Vinyl Pyramat

Hardness: — (—) Thickness: 1.4 – 2 (Varies depending on the color)

Colors: Green / Black / White

Features: 

Application Examples  
Soundproofing and non-slip effects

Processing Difficulty (Black):

| Cutting | Cutting and Grinding | Bonding |
|---------|----------------------|---------|
| ◎       | △                    | ○       |

Physical Properties Data

TB (Tensile strength) Mpa (kg f/cm<sup>2</sup>): (Green) 1.2 (12) / (Black) 1.2 (12) / (White) 1.2 (12)

EB (Elongation at break): (Green) 159% / (Black) 159% / (White) 159%

CS The figures in parenthesis ( ) are the test conditions: (Green) — / (Black) — / (White) —

# 70

## Vinyl B-YAMA Green

Hardness: — (—) Thickness: 1.8

Features:



# 71

Application Examples

Floor mats,  
anti-skid devices

Processing Difficulty:

| Cutting | Cutting and Grinding | Bonding |
|---------|----------------------|---------|
| ◎       | △                    | ○       |

Physical Properties Data

TB (Tensile strength) Mpa (kg f/cm<sup>2</sup>): 1.3 (13)

EB (Elongation at break): 210%

CS The figures in parenthesis ( ) are the test conditions: —



## PTFE (Tetrafluoride)

Hardness: D50° – 55° (D80° – 90°)

Thickness: 0.1 – 5

Features:    

# 72

Application Examples  
Machine components  
and electrical  
insulation materials

Processing Difficulty:

| Cutting | Cutting and Grinding | Bonding |
|---------|----------------------|---------|
| ○       | ○                    | —       |

Physical Properties Data

TB (Tensile strength) Mpa (kg f/cm<sup>2</sup>): 20 – 35 (204 – 357) ASTM D 638

EB (Elongation at break): 200 – 400% ASTM D 638

CS The figures in parenthesis ( ) are the test conditions: —

## Soft Polyethylene

Hardness: — (—)

Thickness: 0.3 – 3

Features:   

# 73

Application Examples  
Containers,  
receptacles, film

Processing Difficulty:

| Cutting | Cutting and Grinding | Bonding |
|---------|----------------------|---------|
| ○       | —                    | —       |

Physical Properties Data

TB (Tensile strength) Mpa (kg f/cm<sup>2</sup>): 9.5 (97)

EB (Elongation at break): 550%

CS The figures in parenthesis ( ) are the test conditions: —

## Cork Rubber

Hardness: A70° (±5°) Thickness: 1 – 10

Features:  \*Lightweight/compressibility

# 74

Application Examples  
Wooden flooring,  
heat insulating materials

Processing Difficulty:

| Cutting | Cutting and Grinding | Bonding |
|---------|----------------------|---------|
| ○       | ○                    | ○       |

Physical Properties Data

TB (Tensile strength) Mpa (kg f/cm<sup>2</sup>): 1.9 (19.4)

EB (Elongation at break): —

CS The figures in parenthesis ( ) are the test conditions: —

Oil Resistance:

| JIS#1 ΔV% Experiment Value | JIS#3 ΔV% Experiment Conditions | Experiment Conditions |
|----------------------------|---------------------------------|-----------------------|
| + 7.6                      | + 39.8                          | ASTM                  |

## Magnet Rubber (Isotropic / Brown)

Hardness: — (—) Thickness: 1 – 3

Features:  \*High magnetism/mechanical strength  
\*Other colors are also available

# 75

Application Examples  
Whiteboard film,  
magnetic iron powder  
sheets, suction sheets

Processing Difficulty:

| Cutting | Cutting and Grinding | Bonding |
|---------|----------------------|---------|
| △       | —                    | △       |

Physical Properties Data

TB (Tensile strength) Mpa (kg f/cm<sup>2</sup>): 11.2 (114)


EB (Elongation at break): 470%

CS The figures in parenthesis ( ) are the test conditions: —

Note: The TB and EB vary with the width and length

## Felt

Hardness: — (—) Thickness: 2 – 10

Features:  \*Electrical insulation/permeability/  
water-holding capacity

# 76

Application Examples  
Public works materials,  
soundproofing, heat  
insulation/cool storage,  
coupler cushioning

Processing Difficulty:

| Cutting | Cutting and Grinding | Bonding |
|---------|----------------------|---------|
| △       | —                    | △       |

Physical Properties Data

TB (Tensile strength) Mpa (kg f/cm<sup>2</sup>): —

EB (Elongation at break): —

CS The figures in parenthesis ( ) are the test conditions: —

Note: No data on characteristic classifications



## Hanenite® GP35L

Hardness: A32° (±5°) Thickness: 0.5 – 30

Features:  

# 77

Application Examples

Vibration and shock absorption materials in various devices

Processing Difficulty:

| Cutting | Cutting and Grinding | Bonding |
|---------|----------------------|---------|
| △       | △                    | ○       |

Physical Properties Data

TB (Tensile strength) Mpa (kg f/cm<sup>2</sup>): 10.3 (105)

EB (Elongation at break): 840%

CS The figures in parenthesis ( ) are

the test conditions: 17 (70°C [158°F] ×22h)

Rebound elasticity: 2%

## Hanenite® GP60L

Hardness: A57° (±5°) Thickness: 0.5 – 30

Features:  

# 78

Application Examples

Vibration and shock absorption materials in various devices

Processing Difficulty:

| Cutting | Cutting and Grinding | Bonding |
|---------|----------------------|---------|
| △       | △                    | ○       |

Physical Properties Data

TB (Tensile strength) Mpa (kg f/cm<sup>2</sup>): 8.3 (85)

EB (Elongation at break): 810%

CS The figures in parenthesis ( ) are

the test conditions: 16 (70°C [158°F] ×22h)

Rebound elasticity: 2%

## Hanenite® Sponge

Hardness: Asker C55° (±5°)

Thickness: 1.5 – 12

Features:  

# 79

Application Examples

Vibration and shock absorption materials in various devices

Processing Difficulty:

| Cutting | Cutting and Grinding | Bonding |
|---------|----------------------|---------|
| △       | △                    | ○       |

Physical Properties Data

TB (Tensile strength) Mpa (kg f/cm<sup>2</sup>): 0.9 (9)

EB (Elongation at break): 480

CS The figures in parenthesis ( ) are

the test conditions: 62 (70°C [158°F] ×22h)

Rebound elasticity: 10%



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