

## Shin-Etsu Silicone Rubber Compounds

### Performance Test Results

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#### Contents

|  |    |
|--|----|
| <b>1</b> Silicone rubber                                   |    |
| General properties .....                                   | 2  |
| Other properties .....                                     | 5  |
| <b>2</b> Fluorosilicone rubber .....                       | 6  |
| <b>3</b> SEP rubber .....                                  | 7  |
| <b>4</b> Curing agents                                     |    |
| Types .....  | 8  |
| Suitability by application .....                           | 8  |
| Standard addition quantity .....                           | 9  |
| <b>5</b> Standard conditions for compression molding ..... | 10 |
| <b>6</b> Primers .....                                     | 10 |
| <b>7</b> Coloring agents .....                             | 10 |
| <b>8</b> Application examples by industry .....            | 11 |

## 1. Silicone rubber: general properties

| Classification                           |                              | For general purpose     |          |          |               |          |          |                         |           |               |      |
|--|------------------------------|-------------------------|----------|----------|---------------|----------|----------|-------------------------|-----------|---------------|------|
| Grade                                    |                              | KE-931-U                | KE-941-U | KE-951-U | KE-961-U      | KE-971-U | KE-981-U | KE-961T-U               | KE-971T-U | X-30-3491-U   |      |
| Appearance                               |                              | Milky white translucent |          |          | Grayish white |          |          | Milky white translucent |           | Grayish white |      |
| Density 23°C                             | g/cm <sup>3</sup>            | 1.07                    | 1.11     | 1.14     | 1.22          | 1.30     | 1.42     | 1.17                    | 1.20      | 1.29          |      |
| Williams plasticity (10 min after remix) |                              | 160                     | 190      | 240      | 280           | 360      | 420      | 280                     | 340       | 290           |      |
| Curing agent                             | Curing agent name            | C-8                     | C-8      | C-8      | C-8           | C-8      | C-8      | C-8A                    | C-8       | C-8A          |      |
|  | Standard addition quantity*1 | 2.0                     | 2.0      | 2.0      | 2.0           | 2.0      | 2.0      | 0.5                     | 2.0       | 0.3           |      |
| Linear shrinkage*2                       |                              | %                       | 4.0      | 3.9      | 3.9           | 3.4      | 3.0      | 2.7                     | 3.6       | 3.4           | —    |
| Physical strength                        | Hardness Durometer A         | 31                      | 43       | 52       | 63            | 71       | 84       | 62                      | 71        | 69            |      |
|  | Tensile strength             | MPa                     | 4.7      | 6.5      | 8.2           | 7.3      | 7.5      | 8.8                     | 9.7       | 8.8           | 7.0  |
|  | Elongation at break          | %                       | 480      | 365      | 325           | 320      | 220      | 100                     | 310       | 260           | 170  |
|  | Tear strength crescent piece | kN/m                    | 15*3     | 15*3     | 23*3          | 20*3     | 20*3     | 8                       | 25*3      | 25*3          | 7    |
| Compression set 180°C/22 h               |                              |                         | 15       | 11*4     | 11*4          | 11*4     | 9*4      | 12*4                    | —         | 11            | 12*4 |
| Dielectric breakdown strength            | kV                           | Normal state            | —        | 23       | 24            | 25       | 25       | 24                      | —         | —             | —    |
|  |                              | Submerged               | —        | 21       | 20            | 25       | 24       | 23                      | —         | —             | —    |
| Volume resistivity                       | TΩ·m                         | Normal state            | —        | 30       | 8             | 6        | 3        | 4                       | —         | —             | —    |
|  |                              | Submerged               | —        | 40       | 5             | 4        | 3        | 3                       | —         | —             | —    |

(Not specified values)

| Classification                           |                              | Non post curing |               |            |            |            | For thick section molding |               |          |          |     |
|--|------------------------------|-----------------|---------------|------------|------------|------------|---------------------------|---------------|----------|----------|-----|
| Grade                                    |                              | KE-742-U*5      | KE-752-U*5    | KE-762-U*5 | KE-772-U*5 | KE-782-U*5 | KE-850-U                  | KE-870-U      | KE-880-U | KE-890-U |     |
| Appearance                               |                              | Light yellow    | Grayish white |            |            |            | Milky white translucent   | Grayish white |          |          |     |
| Density 23°C                             | g/cm <sup>3</sup>            | 1.10            | 1.30          | 1.36       | 1.40       | 1.43       | 1.16                      | 1.35          | 1.45     | 1.55     |     |
| Williams plasticity (10 min after remix) |                              | 180             | 200           | 240        | 270        | 330        | 220                       | 350           | 450      | 550      |     |
| Curing agent                             | Curing agent name            | C-4             | C-4           | C-4        | C-4        | C-4        | C-4                       | C-4           | C-4      | C-8      |     |
|  | Standard addition quantity*1 | 4.0             | 2.8           | 2.7        | 2.7        | 2.7        | 4.0                       | 4.0           | 4.0      | 1.5      |     |
| Linear shrinkage*2                       |                              | %               | 3.6           | 3.0        | 2.7        | 2.6        | 2.5                       | 3.9           | 2.9      | 2.7      | —   |
| Physical strength                        | Hardness Durometer A         | 45              | 53            | 60         | 71         | 79         | 56                        | 72            | 80       | 87       |     |
|  | Tensile strength             | MPa             | 4.4           | 6.0        | 6.7        | 7.5        | 8.5                       | 7.6           | 8.3      | 8.5      | 6.0 |
|  | Elongation at break          | %               | 300           | 250        | 250        | 200        | 160                       | 300           | 140      | 100      | 80  |
|  | Tear strength crescent piece | kN/m            | 8             | 9          | 11         | 13         | 14                        | 9             | 11       | 7        | —   |
| Compression set 180°C/22 h               |                              |                 | 12            | 12         | 12         | 16         | 18                        | 9*4           | 5        | 7*4      | 18  |
| Dielectric breakdown strength            | kV                           | Normal state    | 26            | 29         | 26         | 26         | 29                        | 23            | 23       | 25       | —   |
|  |                              | Submerged       | 27            | 30         | 25         | 26         | 29                        | 23            | 23       | 25       | —   |
| Volume resistivity                       | TΩ·m                         | Normal state    | 100           | 20         | 10         | 100        | 20                        | 10            | 5        | 2        | —   |
|  |                              | Submerged       | 90            | 10         | 10         | 70         | 10                        | 8             | 3        | 2        | —   |

Measurement: in accordance with JIS K 6249 Test pieces: 165°C/10 min (press cure), 200°C/4 h (post cure)

(Not specified values)

\*1 Standard addition quantity is the quantity of curing agent added to 100 parts compound.

\*2 Linear shrinkage values differ according to the curing agent used.

\*3 Angle piece

\*4 Measured values at 150°C/22 h.

\*5 The data below linear shrinkage is based on measurements on a product by compression molding at 170°C/10 min (with no post cure).

[Unit conversion] tensile strength: 10 kgf/cm<sup>2</sup> = 0.98 MPa; tear strength: 1 kgf/cm = 0.98 kN/m; volume resistivity: 10<sup>14</sup> Ω·cm = 1 TΩ·cm.

| Classification                           |                              | For general extrusion molding |            |            |            |            |          |          |             |             |         | For tubing                   |      |      |      |      |     |
|--|------------------------------|-------------------------------|------------|------------|------------|------------|----------|----------|-------------|-------------|---------|------------------------------|------|------|------|------|-----|
| Grade                                    |                              | KE-541-U*3                    | KE-551-U*3 | KE-561-U*3 | KE-571-U*3 | KE-581-U*3 | KE-153-U | KE-174-U | KE-1551-U*3 | KE-1571-U*3 |         |                              |      |      |      |      |     |
| Appearance                               |                              | Milky white translucent       |            |            |            |            |          |          |             |             |         | Milky white translucent      |      |      |      |      |     |
| Density 23°C                             |                              | g/cm <sup>3</sup>             |            | 1.10       | 1.14       | 1.17       | 1.22     | 1.24     | 1.16        | 1.21        | 1.16    | 1.19                         |      |      |      |      |     |
| Williams plasticity (10 min after remix) |                              | 150                           | 200        | 250        | 360        | 430        | 255      | 370      | 270         | 315         |         |                              |      |      |      |      |     |
| Curing agent                             | Curing agent name            | C-23                          | C-25A/B    | C-23       | C-25A/B    | C-23       | C-25A/B  | C-23     | C-25A/B     | C-23        | C-25A/B | C-153A/R-153A/<br>CAT-PL-2*4 |      | C-23 | C-23 |      |     |
|  | Standard addition quantity*1 | 1.0                           | 0.5/2.0    | 1.0        | 0.5/2.0    | 1.0        | 0.5/2.0  | 1.0      | 0.5/2.0     | 1.3         | 0.5/2.0 |                              |      | 0.8  | 0.7  |      |     |
| Linear shrinkage*2                       |                              | %                             |            | —          | —          | —          | —        | —        | —           | —           | —       | —                            | 3.3  | —    |      |      |     |
| Physical strength                        | Hardness Durometer A         | 40                            | 40         | 50         | 50         | 63         | 62       | 70       | 68          | 79          | 77      | 53                           | 71   | 56   | 74   |      |     |
|  | Tensile strength             | MPa                           |            | 8.0        | 8.2        | 10.5       | 9.8      | 11.5     | 11.5        | 11.0        | 11.0    | 10.5                         | 10.5 | 10.0 | 8.1  | 10.5 | 9.5 |
|  | Elongation at break          | %                             |            | 550        | 690        | 530        | 590      | 450      | 470         | 430         | 450     | 310                          | 430  | 650  | 520  | 530  | 370 |
|  | Tear strength crescent piece | kN/m                          |            | 10         | 22         | 13         | 26       | 15       | 24          | 19          | 26      | 13                           | 23   | 36   | 37   | 16   | 23  |
| Compression set 180°C/22 h               |                              | 12*5                          | 9*6        | 8*5        | 9*6        | 11*5       | 9*6      | 13*5     | 9*6         | 14*5        | 9*6     | —                            | —    | —    | 35*6 |      |     |
| Dielectric breakdown strength            | kV                           | Normal state                  |            | —          | —          | 26         | —        | 25       | —           | 26          | —       | 29                           | —    | 26   | 28   | 28   | 25  |
|  | Submerged                    | —                             | —          | 24         | —          | —          | —        | —        | 27          | —           | 27      | —                            | 25   | 28   | 26   | —    |     |
| Volume resistivity                       | TΩ·m                         | Normal state                  |            | —          | —          | 10         | —        | 1        | —           | 600         | —       | 50                           | —    | 900  | 650  | 600  | 600 |
|  | Submerged                    | —                             | —          | 5          | —          | —          | —        | —        | 700         | —           | 20      | —                            | 700  | 370  | 600  | —    |     |

(Not specified values)

| Classification                           |                              | High strength     |          |          | Low hardness, high elongation |             |                 | Flame resistant |            |           |             |      |
|--|------------------------------|-------------------|----------|----------|-------------------------------|-------------|-----------------|-----------------|------------|-----------|-------------|------|
| Grade                                    |                              | KE-555-U          | KE-575-U | KE-520-U | KE-530B-2-U                   | KE-540B-2-U | KE-5620W-U      | KE-5620BL-U     | KE-5612G-U | KE-5634-U |             |      |
| Appearance                               |                              | Light yellow      |          |          | Milky white translucent       |             |                 | White           | Black      | Charcoal  | Translucent |      |
| Density 23°C                             |                              | g/cm <sup>3</sup> |          | 1.17     | 1.21                          | 1.06        | 1.13            | 1.13            | 1.40       | 1.38      | 1.47        | 1.20 |
| Williams plasticity (10 min after remix) |                              | 310               | 320      | 145      | 170                           | 175         | 240             | 230             | 310        | 330       |             |      |
| Curing agent                             | Curing agent name            | C-8               | C-8      | C-8      | X-93-1538                     | C-15        | X-93-1609*7/C-3 |                 | C-3        | C-25A/B   |             |      |
|  | Standard addition quantity*1 | 2.0               | 2.0      | 2.0      | 0.6                           | 1.5         | 0.1/1.3         |                 | 1.3        | 1.0/2.0   |             |      |
| Linear shrinkage*2                       |                              | %                 |          | 4.0      | 4.0                           | 4.5         | 3.8             | 4.1             | 3.1        | 3.2       | 2.7         | 3.4  |
| Physical strength                        | Hardness Durometer A         | 53                | 70       | 23       | 35                            | 39          | 59              | 57              | 59         | 70        |             |      |
|  | Tensile strength             | MPa               |          | 11.0     | 9.4                           | 5.0         | 9.7             | 9.7             | 6.5        | 7.0       | 7.2         | 7.7  |
|  | Elongation at break          | %                 |          | 650      | 550                           | 770         | 880             | 700             | 410        | 430       | 310         | 370  |
|  | Tear strength crescent piece | kN/m              |          | 35       | 41                            | 10          | 34              | 17              | 12         | 11        | 12          | 14   |
| Compression set 180°C/22 h               |                              | 32                | 18       | 22       | 20*6                          | 9*6         | 21              | 27              | 15         | 20        |             |      |
| Dielectric breakdown strength            | kV                           | Normal state      |          | 27       | 27                            | —           | —               | —               | 27         | 28        | 29          | 29   |
|  | Submerged                    | 22                | 24       | —        | —                             | —           | 29              | 28              | —          | —         |             |      |
| Volume resistivity                       | TΩ·m                         | Normal state      |          | 100      | 200                           | —           | —               | —               | 50         | 80        | 110         | 300  |
|  | Submerged                    | 80                | 100      | —        | —                             | —           | 30              | 10              | 10         | —         |             |      |

Measurement: in accordance with JIS K 6249 Test pieces: 165°C/10 min (press cure), 200°C/4 h (post cure)

(Not specified values)

\*1 Standard addition quantity is the quantity of curing agent added to 100 parts compound.

\*2 Linear shrinkage values differ according to the curing agent used.

\*3 Test pieces: 120°C/10 min (press cure), 200°C/4 h (post cure)

\*4 For addition quantities, refer to Standard Addition Quantity of curing agents on p. 9.

\*5 Measured values at 100°C/22 h

\*6 Measured values at 150°C/22 h

\*7 X-93-1609 is a flame retardant.

[Unit conversion] tensile strength: 10 kgf/cm<sup>2</sup> = 0.98 MPa; tear strength: 1 kgf/cm = 0.98 kN/m; volume resistivity: 10<sup>14</sup> Ω·cm = 1 TΩ·cm.

## Silicone rubber: General properties (cont.)

| Classification                           |                              | Heat resistant |            | Hermetic heat resistance | Steam resistant |           |           | Electrically conductive |           |                 | For heat conductive |
|--|------------------------------|----------------|------------|--------------------------|-----------------|-----------|-----------|-------------------------|-----------|-----------------|---------------------|
| Grade                                    |                              | KE-552-U*3     | KE-582-U*4 | KE-552B-U*5              | KE-7511-U       | KE-7611-U | KE-7711-U | KE-3601SB-U             | KE-3711-U | KE-3801M-U      | KE-6801-U*3         |
| Appearance                               |                              | Light brown    |            | Light yellow             | Light yellow    |           |           | Black                   |           |                 | Dark blue           |
| Density 23°C                             | g/cm <sup>3</sup>            | 1.16           | 1.25       | 1.17                     | 1.14            | 1.15      | 1.21      | 1.17                    | 1.14      | 1.20            | 1.90                |
| Williams plasticity (10 min after remix) |                              | 270            | 470        | 280                      | 220             | 220       | 230       | 450                     | 480       | 630             | 500                 |
| Curing agent                             | Curing agent name            | C-23           | C-23       | C-23                     | C-15            | C-8A      | C-8A      | C-8A                    | C-8A      | HC-101/CAT-PL-2 | C-23                |
|  | Standard addition quantity*1 | 1.0            | 1.0        | 1.0                      | 1.3             | 0.6       | 0.6       | 1.0                     | 1.0       | 2.7/0.1         | 0.8                 |
| Linear shrinkage*2                       |                              | %              | 2.7        | 3.3                      | 2.4             | 3.8       | 3.9       | 3.9                     | 4.2       | —               | —                   |
| Physical strength                        | Hardness Durometer A         | 52             | 80         | 52                       | 55              | 61        | 72        | 62                      | 66        | 73              | 85                  |
|  | Tensile strength             | MPa            | 10.0       | 7.0                      | 9.8             | 9.5       | 9.1       | 8.8                     | 7.0       | 6.5             | 5.3                 |
|  | Elongation at break          | %              | 550        | 250                      | 550             | 410       | 330       | 300                     | 290       | 170             | 190                 |
|  | Tear strength crescent piece | kN/m           | 15         | 20                       | 14              | 12        | 11        | 15                      | 10        | —               | 15*6                |
| Compression set 180°C/22 h               |                              | %              | 18*7       | 23                       | 24*7            | 9         | 9         | 10                      | —         | 12              | 18*7                |
| Dielectric breakdown strength            | kV                           | Normal state   | 27         | 25                       | 28              | —         | —         | —                       | —         | —               | 26                  |
|  |                              | Submerged      | 26         | 24                       | 23              | —         | —         | —                       | —         | —               | 25                  |
| Volume resistivity                       | TΩ·m                         | Normal state   | 900        | 900                      | 500             | —         | —         | —                       | 0.05*8    | 0.05*8          | 0.03*8              |
|  |                              | Submerged      | 800        | 600                      | 50              | —         | —         | —                       | —         | —               | 2                   |

(Not specified values)

| Classification                           |                              | For industrial rollers |               | For rubber rollers |           | Voltage resistant |          | For oil bleed |           |          | For super low temperature |
|--|------------------------------|------------------------|---------------|--------------------|-----------|-------------------|----------|---------------|-----------|----------|---------------------------|
| Grade                                    |                              | KE-765-U               | KE-785-U      | KE-7008-U          | KE-7005-U | KE-655-U          | KE-675-U | KE-503-U      | KE-5042-U | KE-505-U | KE-136Y-U*2               |
| Appearance                               |                              | Light yellow           | Grayish white | Light yellow       |           | Grayish white     |          | White         |           |          | Grayish white             |
| Density 23°C                             | g/cm <sup>3</sup>            | 1.17                   | 1.58          | 1.30               | 1.09      | 1.22              | 1.29     | 1.10          | 1.14      | 1.19     | 1.16                      |
| Williams plasticity (10 min after remix) |                              | 270                    | 370           | 135                | 150       | 300               | 310      | 170           | 185       | 210      | 220                       |
| Curing agent                             | Curing agent name            | C-8                    | C-8           | C-3                | C-3       | C-8A              | C-8A     | C-8           | C-8       | C-8      | C-23                      |
|  | Standard addition quantity*1 | 2.0                    | 1.5           | 3.0                | 3.0       | 0.7               | 0.7      | 2.0           | 2.0       | 2.0      | 0.7                       |
| Linear shrinkage*2                       |                              | %                      | 3.7           | 2.4                | —         | —                 | 3.8      | 3.1           | 4.0       | 3.6      | 3.4                       |
| Physical strength                        | Hardness Durometer A         | 63                     | 83            | 29                 | 47        | 60                | 70       | 32            | 43        | 48       | 52                        |
|  | Tensile strength             | MPa                    | 10.0          | 8.5                | 3.8       | 5.2               | 10.5     | 8.5           | 6.5       | 7.4      | 7.3                       |
|  | Elongation at break          | %                      | 340           | 110                | 450       | 240               | 400      | 300           | 650       | 500      | 330                       |
|  | Tear strength crescent piece | kN/m                   | —             | —                  | 5         | 6                 | 28       | 23*6          | 18        | 22       | 19                        |
| Compression set 180°C/22 h               |                              | %                      | 8             | 11                 | 13        | 6                 | 15*7     | 10*7          | 15        | 10       | 17*9                      |
| Dielectric breakdown strength            | kV                           | Normal state           | 27            | 26                 | —         | —                 | 28       | 28            | 24        | 25       | 23                        |
|  |                              | Submerged              | 25            | 26                 | —         | —                 | —        | —             | —         | —        | 27                        |
| Volume resistivity                       | TΩ·m                         | Normal state           | 10            | 10                 | —         | —                 | 50       | 10            | 50        | 50       | 8                         |
|  |                              | Submerged              | 10            | 10                 | —         | —                 | —        | —             | —         | —        | 90                        |

Measurement: in accordance with JIS K 6249 Test piece: 165°C/10 min (press cure), 200°C/4 h (post cure)

(Not specified values)

\*1 Standard addition quantity is the quantity of curing agent added to 100 parts compound.

\*2 Linear shrinkage values differ according to the curing agent used.

\*3 Test pieces: 120°C/10 min (press cure), 200°C/4 h (post cure)

\*4 Test pieces: 120°C/10 min (press cure), 150°C/1 h + 250°C/24 h (post cure)

\*5 Test pieces: 120°C/10 min (press cure), 150°C/1 h (post cure)

\*6 Angle piece \*7 Measured values at 150°C/22 h \*8 Ω·m \*9 Measured values at 150°C/70 h \*10 Measured values at 105°C/70 h

[Unit conversion] tensile strength: 10 kgf/cm<sup>2</sup> = 0.98 MPa; tear strength: 1 kgf/cm = 0.98 kN/m; volume resistivity: 10<sup>14</sup> Ω·cm = 1 TΩ·cm.

## Silicone rubber: other properties

| Classification                  |                                   |                       | For general purpose |          |          |          |          |           |             |
|---------------------------------|-----------------------------------|-----------------------|---------------------|----------|----------|----------|----------|-----------|-------------|
| Grade                           |                                   |                       | KE-941-U            | KE-951-U | KE-961-U | KE-971-U | KE-981-U | KE-971T-U | X-30-3491-U |
| Heat resistance                 | Rate of change (RC) at 220°C/96 h | Hardness Point        | -4                  | -1       | -1       | +3       | 0        | —         | —           |
|                                 |                                   | Tensile strength %    | -20                 | -10      | -10      | +2       | -5       | —         | —           |
|                                 |                                   | Elongation at break % | -8                  | -22      | -30      | -35      | -13      | —         | —           |
| Oil resistance                  | RC at 150°C/72 h<br>IRM 903 Oil   | Hardness Point        | —                   | -15      | -15      | -15      | —        | -19       | —           |
|                                 |                                   | Tensile strength %    | —                   | -25      | -15      | -15      | —        | -6        | —           |
|                                 |                                   | Elongation at break % | —                   | -30      | -20      | -10      | —        | -16       | —           |
|                                 |                                   | Volume change %       | —                   | +30      | +30      | +26      | —        | +28       | —           |
|                                 | RC at 175°C/70 h<br>ASTM Oil No.1 | Hardness Point        | —                   | —        | —        | -3       | —        | —         | -6          |
|                                 |                                   | Tensile strength %    | —                   | —        | —        | +14      | —        | —         | -4          |
|                                 |                                   | Elongation at break % | —                   | —        | —        | -20      | —        | —         | +10         |
|                                 | Volume change %                   | —                     | —                   | —        | +6       | —        | —        | +9        |             |
| Flame resistance                |                                   | UL94                  | HB                  | HB       | HB       | HB       | HB       | HB        | —           |
| Low temperature characteristics |                                   | T10 Gehman test °C    | —                   | -46      | —        | -47      | —        | —         | —           |

(Not specified values)

| Classification  |                                   |                       | For general extrusion molding |            |            | Voltage resistant |          | For oil bleed |           |          |
|-----------------|-----------------------------------|-----------------------|-------------------------------|------------|------------|-------------------|----------|---------------|-----------|----------|
| Grade           |                                   |                       | KE-551-U*5                    | KE-561-U*5 | KE-571-U*5 | KE-655-U          | KE-675-U | KE-503-U      | KE-5042-U | KE-505-U |
| Heat resistance | Rate of change (RC) at 220°C/96 h | Hardness Point        | +4                            | +6         | +8         | +5*1              | +2*1     | 0*2           | +3*2      | -4*2     |
|                 |                                   | Tensile strength %    | -19                           | -27        | -28        | -25*1             | -4*1     | -5            | -12*2     | -10*2    |
|                 |                                   | Elongation at break % | -40                           | -41        | -56        | -30*1             | -27*1    | -15           | -23*2     | +8*2     |
| Oil resistance  | RC at 150°C/72 h<br>IRM 903 Oil   | Hardness Point        | —                             | —          | —          | -20               | -20      | -10           | —         | —        |
|                 |                                   | Tensile strength %    | —                             | —          | —          | -40               | -15      | -45           | —         | —        |
|                 |                                   | Elongation at break % | —                             | —          | —          | -40               | -15      | -50           | —         | —        |
|                 |                                   | Volume change %       | —                             | —          | —          | +55               | +40      | +55           | —         | —        |

(Not specified values)

| Classification   |                                   |                       | Flame resistant |             |            |           | Heat resistant |            | Hermetic heat resistance |
|------------------|-----------------------------------|-----------------------|-----------------|-------------|------------|-----------|----------------|------------|--------------------------|
| Grade            |                                   |                       | KE-5620W-U      | KE-5620BL-U | KE-5612G-U | KE-5634-U | KE-552-U*3     | KE-582-U*3 | KE-552B-U*3              |
| Heat resistance  | Rate of change (RC) at 220°C/96 h | Hardness Point        | +4              | +3          | +2         | —         | +15*4          | +8*4       | +5                       |
|                  |                                   | Tensile strength %    | +10             | +13         | -30        | —         | -48*4          | -35        | -10                      |
|                  |                                   | Elongation at break % | -28             | -28         | -20        | —         | -59*4          | -60        | -30                      |
| Flame resistance |                                   | UL94                  | V-0             | V-0         | V-0        | V-1       | —              | —          | —                        |

Measurement: in accordance with JIS K 6249 Test pieces: 165°C/10 min (press cure), 200°C/4 h (post cure)

(Not specified values)

| Classification  |                                   |                       | Non post curing |            |            |            |            | Steam resistant |           |           |
|-----------------|-----------------------------------|-----------------------|-----------------|------------|------------|------------|------------|-----------------|-----------|-----------|
| Grade           |                                   |                       | KE-742-U*6      | KE-752-U*6 | KE-762-U*6 | KE-772-U*6 | KE-782-U*6 | KE-7511-U       | KE-7611-U | KE-7711-U |
| Heat resistance | Rate of change (RC) at 220°C/96 h | Hardness Point        | +2              | +2         | +3         | +4         | —          | +2*2            | +3        | +2*2      |
|                 |                                   | Tensile strength %    | +5              | 0          | -20        | -5         | -10        | -15             | -10       | -8*2      |
|                 |                                   | Elongation at break % | -10             | -10        | -15        | -15        | -15        | -10             | -15       | -11*2     |

Measurement: in accordance with JIS K 6249 Test pieces: 165°C/10 min (press cure), 200°C/4 h (post cure)

(Not specified values)

\*1 Measured values at 200°C/72 h \*2 Measured values at 230°C/72 h \*3 Test pieces: 120°C/10 min (press cure), 200°C/4 h (post cure)

\*4 Measured values at 300°C/72 h \*5 Relevant data is for addition cure (C-25A/B=0.5/2.0)

\*6 Data for the product in question was measured based on a pressure-cure product cured at 170°C/10 min (with no post cure).

## Fluorosilicone rubber

Fluorosilicone rubber is highly resistant to high and low temperatures and solvents, and has excellent workability. In IRM 903, a standard oil, there is less than 5% swelling (150°C/70 h). Fluorosilicone rubber also has excellent resistance to silicone fluid. Shin-Etsu's fluorosilicone rubber products include the FE-201-U Series for general molding (hardness: 25-80), and the FE-301-U Series of high strength rubbers (hardness: 40-80). We also produce FE-451-U, a copolymer

type that exhibits oil resistance midway between that of dimethyl silicone rubber and fluorosilicone rubber. This copolymer material has oil resistance while also having superior cold resistance, and maintains a greater degree of rubber elasticity at low temperatures than typical silicone rubbers.

Applications : Rubber parts including diaphragms, check valves, and connectors, specifically in applications requiring oil and solvent resistance.

### General properties

| Grade                            |  | FE-251-U                             | FE-261-U     | FE-271-U      | FE-351-U           | FE-361-U     | FE-451-U*2   |
|----------------------------------|--|--------------------------------------|--------------|---------------|--------------------|--------------|--------------|
| Appearance                       |  | Light yellow                         | Light yellow | Grayish white | Light yellow       | Light yellow | Light yellow |
| Density 23°C g/cm <sup>3</sup>   |  | 1.41                                 | 1.42         | 1.50          | 1.44               | 1.46         | 1.23         |
| Prescribed curing agent          | Curing agent name                      | C-8A                                 | C-8A         | C-8A          | C-8A               | C-8A         | C-8A         |
|                                  | Standard addition quantity             | 0.8                                  | 0.8          | 0.8           | 0.8                | 0.8          | 0.8          |
| Normal state data                | Hardness Durometer A                   | 54                                   | 63           | 73            | 49                 | 62           | 50           |
|                                  | Elongation at break %                  | 430                                  | 400          | 300           | 520                | 520          | 300          |
|                                  | Tensile strength MPa                   | 9.8                                  | 9.8          | 9.0           | 13.3               | 12.7         | 6.4          |
|                                  | 100% modulus MPa                       | 1.9                                  | 2.7          | 5.3           | 0.98               | 1.2          | 1.8          |
|                                  | 200% modulus MPa                       | 4.4                                  | 5.8          | 6.6           | 2.5                | 2.7          | 3.7          |
|                                  | Tear strength Crescent kN/m            | 15                                   | 16           | 16            | 38                 | 45           | 10           |
|                                  | Linear shrinkage %                     | 3.5                                  | 3.5          | 3.3           | 3.3                | 3.2          | 3.8          |
|                                  | Rebound resiliency %                   | 43                                   | 43           | 34            | 24                 | 21           | 74           |
|                                  | Compression set*1 %                    | 8                                    | 8            | 9             | 17                 | 14           | 6            |
| Heat resistance 200°C/72 h       | Hardness (points change)               | +2                                   | +3           | +3            | +5                 | +5           | +2           |
|                                  | Elongation at break (rate of change) % | -7                                   | -5           | -16           | ±0                 | -2           | -7           |
|                                  | Tear strength (rate of change) %       | -16                                  | -12          | -17           | -7                 | -8           | -7           |
| IRM 903 oil immersion 150°C/70 h | Hardness (points change)               | -5                                   | -5           | -5            | ±0                 | ±0           | -11          |
|                                  | Elongation at break (rate of change) % | -15                                  | -5           | -10           | ±0                 | +1           | -18          |
|                                  | Tensile strength (rate of change) %    | -20                                  | -10          | -10           | -2                 | ±0           | -19          |
|                                  | Volume change %                        | +4                                   | +4           | +4            | +3                 | +3           | +14          |
| Fuel C 25°C/72 h                 | Hardness (points change)               | -9                                   | -9           | -10           | -12                | -15          | —            |
|                                  | Elongation at break (rate of change) % | -44                                  | -45          | -23           | -33                | -14          | —            |
|                                  | Tensile strength (rate of change) %    | -48                                  | -40          | -17           | -46                | -27          | —            |
|                                  | Volume change %                        | +24                                  | +23          | +21           | +23                | +22          | +140         |
| Remarks                          |  | For fuel diaphragms and check valves |              |               | High tear strength |              | Copolymer    |

Measurement: based on JIS K 6249 Test pieces: 165°C/10 min (press cure), 200°C/4 h (post cure)

(Not specified values)

\*1 Measured values at 180°C/22 h \*2 FE-451-U is produced in response to orders received.

## SEP Rubber (silicone-modified EPDM)

SEP rubber is produced by modifying ethylene propylene rubber (EPDM) with silicone. This improves EPDM's properties of heat resistance and weather resistance, and low temperature characteristics. These performance characteristics lie between those of EPDM and silicone rubber, but SEP rubber has the additional favorable properties of chlorine resistance and sponge foaming characteristics. In high temperature conditions over 100°C, SEP rubber has higher mechanical strength, in particular tear strength, than EPDM, and is comparable to high-strength

silicone rubber. In terms of resistance to steam, hot water, acids and alkalis, SEP rubber is more durable than silicone rubbers. SEP rubbers are available in several grades: general grade (SEP-1711-U, SEP-1411-U), heat-resistant grade (SEP-1721-U, SEP-1421-U, SEP-855B-U), extrusion grade (SEP-1731-U), flame-resistant grade (SEP-363-U), and solar grade (SEP-1631-U).

Applications : Rubber parts for high-temperature applications requiring high strength, including plug boots and anode caps.

### General properties

| Grade                          |                             | SEP-1711-U*2                                | SEP-1721-U*3                                | SEP-1731-U                     | SEP-855B-U                                  | SEP-363-U                       | SEP-1631-U                        |
|--------------------------------|-----------------------------|---|---|--------------------------------|---|---------------------------------|-----------------------------------|
| Appearance                     |                             | Yellow                                      | Light yellow                                | Gray                           | Light yellow                                | Black                           | Light yellow                      |
| Density 23°C g/cm <sup>3</sup> |                             | 1.11  | 1.15  | 1.21                           | 1.15  | 1.40                            | 1.02                              |
| Prescribed curing agent        | Curing agent name           | C-11  | C-11  | C-12/SEP-BM                    | C-11  | C-11                            | C-11                              |
|                                | Standard addition quantity  | 2.0   | 2.0   | 4.0/0.2                        | 2.0   | 1.5                             | 2.0                               |
| Mooney viscosity ML 1+4 100°C  |                             | 75  | 66  | 50                             | 55  | 50                              | 42                                |
| Normal state data              | Hardness Durometer A        | 70  | 72  | 70                             | 56  | 70                              | 68                                |
|                                | Elongation at break %       | 600   | 550   | 600                            | 750   | 400                             | 800                               |
|                                | Tensile strength MPa        | 17.0  | 11.0  | 14.0                           | 13.0  | 4.8                             | 15.3                              |
|                                | Tear strength Crescent kN/m | 35  | 30  | 30                             | 31*4  | 25                              | 36                                |
|                                | Rebound resiliency %        | 50  | 50  | 51                             | 60  | 50                              | 49                                |
|                                | Compression set*1 %         | 40  | 45  | 28                             | 45  | 28                              | 40                                |
|                                | Linear shrinkage %          | 2.5   | 2.7   | —                              | —   | —                               | —                                 |
| Flame resistance               | —                           | —   | —   | —                              | 1.6mm<br>UL94 V-0                           | —                               |                                   |
| Remarks                        |                             | For general molding<br>Sulfur cure possible | For general molding<br>Heat-resistant grade | For extrusion<br>General grade | For general molding<br>Heat-resistant grade | Flame resistant<br>Halogen-free | Solar grade<br>Extrusion possible |

Measurement: based on JIS K 6249 Test pieces: 170°C/10 min (press cure), 150°C/2 h (post cure)

(Not specified values)

\*1 Measured values at 150°C/22 h \*2 SEP-1711-U is available in a hardness 40 variation, SEP-1411-U.

\*3 SEP-1721-U is available in a hardness 40 variation, SEP-1421-U. \*4 Angle

● We also offer a range of trial products in grades other than those listed above.

## Curing agents

Shin-Etsu's silicone rubber compounds typically do not include a curing agent. These are called "U-types," and expressed such as KE-951-U. With U-type products, choose a

suitable curing agent (from C-1A to C-25A/B) in accordance with the curing method. We also offer curing agents other than those listed here. Please contact Shin-Etsu for details.

### Types

|                     | Applications  | Appearance   | Main vulcanizing ingredient  |
|---------------------|---|--|--|
| C-1A                | General molding, thin sections                          | White paste  | Benzoyl peroxide<br>Approx. 50% content  |
| C-3                 | General molding,<br>steam curing, flame resistant       | White putty  | Dicumyl peroxide<br>Approx. 20% content  |
| C-4                 | General molding   | Light gray paste   | Ditertiary butyl peroxide<br>Approx. 20% content   |
| C-8<br>C-8A<br>C-8B | General molding,<br>thick sections                      | Light gray paste (C-8)<br>Translucent paste (C-8A, C-8B) | 2.5 dimethyl-2.5 bis (tertiarybutylperoxy) hexane<br>Approx. 25% content (C-8), approx. 80% content (C-8A), approx. 40% content (C-8B) |
| C-10                | Vulcanization of addition-cure<br>high-strength rubbers | Brown paste  | Contains metallic salt   |
| C-15                | General molding,<br>for transparent products            | Translucent paste  | 2.5 dimethyl-2.5 bis (tertiarybutylperoxy) hexane<br>Approx. 12.5% content   |
| C-16                | General molding,<br>for transparent products            | Transparent liquid                                       | Tertiarybutylcumylperoxide<br>Approx. 50% content  |
| C-23                | Hot Air Vulcanization (HAV)                             | White paste  | Paramethylbenzoilperoxide<br>Approx. 50% content   |
| C-25A/B             | Vulcanization of<br>addition-cure rubbers               | Transparent paste (C-25A)<br>Translucent paste (C-25B)   | Contains metal complex (C-25A)<br>Contains cross-linker (C-25B)  |

### Suitability by application

| Grade               | Application   |                |         |                          |                     | Curing method |    |      |         |
|---------------------|---------------|----------------|---------|--------------------------|---------------------|---------------|----|------|---------|
|                     | Thin sections | Thick sections | Sponge* | Carbon compound products | Low compression set | HAV           | CV | Mold | Coating |
| C-1A                | ●             |                | ●       |                          |                     |               | ●  | ●    | ●       |
| C-3                 |               | ●              | ●       | ●                        | ●                   |               | ●  | ●    |         |
| C-4                 |               | ●              |         |                          | ●                   |               |    | ●    |         |
| C-8<br>C-8A<br>C-8B | ●             | ●              |         | ●                        | ●                   |               | ●  | ●    |         |
| C-10                |               | ●              | ●       | ●                        | ●                   | ●             |    | ●    |         |
| C-15                | ●             | ●              |         | ●                        | ●                   |               |    | ●    |         |
| C-16                | ●             | ●              |         |                          | ●                   |               | ●  | ●    |         |
| C-23                |               |                | ●       |                          |                     | ●             | ●  | ●    | ●       |
| C-25A/B             |               | ●              | ●       | ●                        | ●                   | ●             |    | ●    |         |

\* Use sponge curing agents as a combination of C-1A with C-3, or C-23 with C-3.

Standard addition quantity

| Grade       | C-1A*1                               | C-3 | C-4*2 | C-8*3 | C-8A | C-23*1 |      |     |     |     |     |     |     |
|-------------|--------------------------------------|-----|-------|-------|------|--------|------|-----|-----|-----|-----|-----|-----|
| KE-931-U    | 0.75                                 | 3.2 | 4.0   | 2.0   | 0.5  | 1.8*   |      |     |     |     |     |     |     |
| KE-941-U    |                                      |     |       |       |      | 1.5*   |      |     |     |     |     |     |     |
| KE-951-U    |                                      |     |       |       |      | 1.4*   |      |     |     |     |     |     |     |
| KE-961-U    | 0.6                                  | 2.3 | 3.5   |       | 0.4  | 1.3*   |      |     |     |     |     |     |     |
| KE-971-U    | 0.55                                 | 1.9 | 3.0   |       |      | 1.2*   |      |     |     |     |     |     |     |
| KE-981-U    | 0.5                                  | 1.6 |       |       |      | 1.5    |      |     |     |     |     |     |     |
| KE-961T-U   | 0.65                                 | 2.5 | 4.0   |       | 0.5  | 1.4    |      |     |     |     |     |     |     |
| KE-971T-U   | 0.6                                  | 2.3 | 3.5   |       |      | 1.4    |      |     |     |     |     |     |     |
| X-30-3491-U |                                      |     |       |       |      | 0.3    | 1.7* |     |     |     |     |     |     |
| KE-742-U    | 0.85                                 | 3.5 | 4.0   | 2.0   | 0.5  | 1.5*   |      |     |     |     |     |     |     |
| KE-752-U    | 0.8                                  | 3.2 | 2.8   |       |      | 1.3*   |      |     |     |     |     |     |     |
| KE-762-U    | 0.7                                  | 2.8 | 2.7   |       |      | 0.4    | 1.2* |     |     |     |     |     |     |
| KE-772-U    | 0.6                                  | 2.6 |       | 1.5   | 1.4* |        |      |     |     |     |     |     |     |
| KE-782-U    |                                      |     |       |       | 1.5  |        | 1.4* |     |     |     |     |     |     |
| KE-850-U    | 0.75                                 | 2.8 | 4.0   | 2.0   | 0.5  | 1.2*   |      |     |     |     |     |     |     |
| KE-870-U    | 0.65                                 | 1.9 |       |       |      | 1.1    |      |     |     |     |     |     |     |
| KE-880-U    | 0.6                                  | 1.6 |       |       |      | 0.6    |      |     |     |     |     |     |     |
| KE-890-U    | —                                    | 3.0 | 4.0   | 2.0   | 0.6  | —      |      |     |     |     |     |     |     |
| KE-541-U    | 0.8                                  | 3.0 |       |       |      | 4.0    | 2.0  | 0.6 | 1.0 |     |     |     |     |
| KE-551-U    |                                      |     |       |       |      |        |      |     | 1.3 |     |     |     |     |
| KE-561-U    | 0.7                                  |     |       |       |      |        |      |     | 3.0 | 4.0 | 2.0 | 0.6 | 1.3 |
| KE-571-U    | 0.6                                  |     |       |       |      |        |      |     |     |     |     |     | 1.3 |
| KE-581-U    |                                      |     |       |       |      |        |      |     |     |     |     |     | 1.3 |
| KE-153-U    | C-153A/R-153A/CAT-PL-2=2.5/0.25/0.03 |     |       |       |      |        |      |     |     |     |     |     |     |
| KE-174-U    | C-153A/R-153A/CAT-PL-2=2.5/0.25/0.03 |     |       |       |      |        |      |     |     |     |     |     |     |
| KE-1551-U   | 0.8                                  | 3.2 | 4.0   | 2.0   | 0.5  | 1.3    |      |     |     |     |     |     |     |
| KE-1571-U   | 0.7                                  | 2.0 | 3.0   |       | 0.4  | 1.2    |      |     |     |     |     |     |     |
| KE-555-U    | 0.8                                  | 2.5 | —     | 2.0   | 0.5  | 1.3    |      |     |     |     |     |     |     |
| KE-575-U    |                                      |     |       |       | 0.4  | 1.3    |      |     |     |     |     |     |     |

| Grade       | C-1A*1          | C-3 | C-4*2 | C-8*3 | C-8A | C-23*1 |
|-------------|-----------------|-----|-------|-------|------|--------|
| KE-520-U    | 0.8             | 3.5 | 4.0   | 2.0   | 0.5  | 1.8*   |
| KE-530B-2-U | 0.7             | 3.4 |       |       |      | 1.5*   |
| KE-540B-U   | 0.8             | 3.2 |       |       |      | 1.3    |
| KE-5620W-U  | —               | 1.3 | —     | —     | —    | —      |
| KE-5620BL-U | —               |     | —     | —     | —    | —      |
| KE-5612G-U  | 1.0             |     | 1.5   | 1.5   | 0.5  | 0.5*   |
| KE-5634-U   | C-25A/B=1.0/2.0 |     |       |       |      |        |
| KE-552-U    | 0.8             | 3.4 | 4.0   | 2.0   | 0.5  | 1.3    |
| KE-582-U    |                 | 2.5 | 3.0   |       | 0.4  | 1.2    |
| KE-552B-U   |                 | 3.4 | 4.0   |       | 0.5  | 1.0    |
| KE-7511-U   | —               | —   | 3.0   | —     | 0.6  | —      |
| KE-7611-U   |                 |     | —     |       |      |        |
| KE-7711-U   |                 |     | —     |       |      |        |
| KE-3601SB-U | —               | 5.0 | 5.0   | 4.0   | 1.0  | —      |
| KE-3711-U   |                 | —   | —     | —     |      |        |
| KE-3801M-U  |                 | —   | —     | —     |      |        |
| KE-6801-U   | 0.5             | 2.0 | 3.0   | 2.0   | 0.4  | 0.8*   |
| KE-765-U    | 0.7             | 2.8 | 3.0   | 2.0   | 0.5  | 1.3*   |
| KE-785-U    | 0.6             | 2.6 |       | 1.5   | 0.4  | 1.2*   |
| KE-7008-U   | —               | 3.0 | —     | 2.0   | 0.6  | —      |
| KE-7005-U   |                 |     |       |       |      |        |
| KE-655-U    | —               | 3.0 | 4.0   | 2.0   | 0.7  | —      |
| KE-675-U    |                 |     |       |       |      |        |
| KE-503-U    | —               | 3.0 | 4.0   | 2.0   | 0.6  | —      |
| KE-5042-U   |                 |     |       |       |      |        |
| KE-505-U    |                 |     |       |       |      |        |
| KE-136Y-U   | 0.75            | 3.0 | —     | 2.0   | 0.5  | 0.7    |

Standard addition quantity is the quantity of curing agent added to 100 parts compound.

★ Note: Please contact Shin-Etsu separately for information regarding Hot Air Vulcanization (HAV).

\*1 In summer (June-September), add curing agents at 0.2-0.4 parts greater than the standard addition quantity;  
in winter (December-March), add at 0.1-0.3 parts less than the standard addition quantity.

\*2 C-4 is volatile, so the rubber compound should be used soon after mixing.

\*3 C-8 has qualities nearly identical to C-4, but has the advantage of lower volatility than C-4.

## Standard conditions for compression molding

| Grade                                | Thickness of molded item (mm) |     | Less than 1 | 1 - 5   | 5 - 10  | 10 - 25 | 25 - 50  |
|--------------------------------------|-------------------------------|-----|-------------|---------|---------|---------|----------|
|                                      | Press conditions              |     |             |         |         |         |          |
| C-1A* <sup>1</sup><br>C-23           | Temperature                   | °C  | 120 - 125   |         |         |         |          |
|                                      | Time                          | min | 10          | 10 - 15 | 15 - 30 | 30 - 60 | 60 - 120 |
|                                      | Pressure                      | MPa | 2.9 - 4.9   |         |         |         |          |
| C-3                                  | Temperature                   | °C  | 155 - 160   |         |         |         |          |
|                                      | Time                          | min | 10          | 10 - 15 | 15 - 30 | 30 - 60 | 60 - 120 |
|                                      | Pressure                      | MPa | 2.9 - 4.9   |         |         |         |          |
| C-4 C-15<br>C-8 C-16<br>C-8A<br>C-8B | Temperature                   | °C  | 165 - 170   |         |         |         |          |
|                                      | Time                          | min | 10          | 10 - 15 | 15 - 30 | 30 - 60 | 60 - 120 |
|                                      | Pressure                      | MPa | 2.9 - 5.9   |         |         |         |          |
| C-10<br>C-25A/B* <sup>2</sup>        | Temperature                   | °C  | 150 - 170   |         |         |         |          |
|                                      | Time                          | min | 10 - 20     |         |         | 20 - 60 | 60 - 120 |
|                                      | Pressure                      | MPa | 2.9 - 5.9   |         |         |         |          |

\*1 Curing may be uneven in molded items thicker than 5 mm. Shin-Etsu recommends C-3, C-8, or C-8A for molding items over 5 mm thick.

\*2 Molding possible at temperatures as low as 120°C-150°C.

## Primers

By applying the primer in advance, better adhesion will be obtained.

| Grade          | Features               | Appearance                | Ingredient (%) | Solvent             | Drying conditions                                | Adherend         |
|----------------|------------------------|---------------------------|----------------|---------------------|--|------------------|
| Primers No.4   | For general molding    | Colorless and transparent | 20             | n-Heptane           | 23°C / 15 - 20 min                               | Metal<br>Plastic |
| Primers No.18B | Heat and oil resistant | Reddish brown             | 25             | Toluene<br>n-Hexane | 23°C / 15 - 20 min<br>→100 - 150°C / 10 - 20 min | Metal            |

● We offer other primers in addition to those listed above. Contact our Sales Department for details.

## Coloring agents

| Grade       | Color         | Coloring ingredient (%) (ingredient name) |
|-------------|---------------|---|
| KE-Color BR | Reddish brown | 50 (iron oxide)                           |
| KE-Color W  | White         | 50 (titanium oxide)                       |
| KE-Color MB | Blue          | 50 (lapis)                                |
| KE-Color BL | Black         | 50 (iron oxide, carbon)                   |
| KE-Color SB | Sky blue      | 50 (cobalt blue)                          |
| X-93-941    | Yellow        | 50 (titanium oxide, organic pigment)      |
| X-93-942    | Red           | 50 (organic pigment)                      |

## Application examples by industry

| Industry         | Application examples   | Desired properties   | Typical grade                   |
|------------------|--|--|---------------------------------|
| Home appliances  | anode caps, wedges   | electrical insulation, heat resistance, flame resistance   | KE-5612G-U                      |
|                  | defrosters   | heat resistance, cold resistance, electrical insulation  | KE-552B-U/KE-136Y-U<br>KE-582-U |
|                  | hot airbrushes   | heat resistance, weather resistance, color tone  | KE-941-U/KE-951-U               |
|                  | microwave oven window gaskets<br>microwave oven turnbelts  | heat resistance, low compression set   | KE-951-U                        |
| Electric wiring  | lead wires of motors and electric appliances<br>heater wires of rice cookers<br>defroster wires of refrigerators<br>ignition wires | electrical insulation, heat resistance, cold resistance,<br>thermal conductivity, extrusion workability,<br>flame resistance, high pressure-resistance | KE-552B-U<br>KE-5620W-U         |
| Office equipment | keypads of mobile communications devices, etc.   | electrical conductivity (some)*1, electrical insulation,<br>flex fatigue resistance, low temperature-dependence  | KE-951-U<br>KE-3711-U           |
|                  | EMI gaskets  | electrical conductivity, flame resistance, thermal conductivity  | KE-3801M-U/KE-3711-U            |
|                  | photocopy machine (PPC) rollers  | heat resistance, releasability, low compression set  | KE-870-U                        |
|                  | FAX platen rollers   |  | KE-7008-U                       |
|                  | printer platen rollers   |  | KE-971-U                        |
| Machinery        | low-frequency therapy equipment  | electrical conductivity  | KE-7005-U/KE-7008-U             |
|                  | lost wax casting   | heat resistance, workability, releasability  | (KE-661-U)*2                    |
|                  | solar hoses  | chlorine water resistance, weather resistance  | KE-655-U/KE-675-U<br>SEP-1631-U |
|                  | hot stamp rollers  | heat resistance, low compression set   | KE-765-U/KE-785-U               |
|                  | vibration-damping rubbers  | low rebound resilience   | (KE-5560-U)*2                   |
| Automotive       | diaphragms, o-rings  | oil resistance, heat resistance, cold resistance, flex fatigue resistance  | FE-251-U/FE-271-U               |
|                  | plug boots   | oil resistance, heat resistance  | KE-675-U/KE-655-U               |
|                  | waterproof connectors  | heat resistance, oil bleed, oil resistance   | KE-503-U/KE-505-U               |
|                  | radiator hoses   | low compression set, hot water resistance  | SEP-1731-U                      |
|                  | turbocharger hoses<br>intercooler hoses  | heat resistance, oil resistance, flex fatigue resistance   | KE-675-U/KE-552B-U<br>KE-655-U  |
| Food             | pressure cooker gaskets<br>rice cooker and electric kettle gaskets<br>electronic rice cooker gaskets                               | steam resistance, safety, chlorine water resistance,<br>low compression set  | *2                              |
|                  | milkers  | transparency, high strength, safety, pleasant texture against the skin, high-class   |                                 |
|                  | baby nipples   | transparency, safety   |                                 |
|                  | lunch box gaskets  | safety, low compression set  |                                 |
| Leisure          | swimming goggles, snorkel mouthpieces,<br>goggle bands   | transparency, high strength, high-class,<br>safety, pleasant texture against the skin  | KE-153-U                        |

\*1 Electrically conductive products such as KE-3711-U

\*2 For information about these products, please contact one of the Sales Departments listed on the back cover.

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