

| 合金特性一覧 Physical and mechanical properties |             |  |                    |                       |   |                           |                                     |      |       |
|---|-------------|--|--------------------|-----------------------|---|---------------------------|-------------------------------------|------|-------|
| 分類<br>Class                               | 材種<br>Grade | WC 粒径<br>grain size<br>[ $\mu\text{m}$ ] | ISO 分類<br>Code ISO | 硬さ<br>Hardness<br>HRA | 抗折力<br>Transverse<br>rupture<br>strength<br>[GPa] | 比重<br>Specific<br>gravity | 成分<br>Chemical composition<br>[wt%] |      |       |
|   |             |  |                    |                       |   |                           | WC                                  | Co   | Other |
| 超微粒<br>ultrafine                          | NU08        | 0.3                                      | K05                | 93.8                  | 4.3   | 14.6                      | Bal.                                | 8.0  | 0.3   |
|   | NF08        | 0.5                                      | K05-K10            | 93.2                  | 4.5   | 14.5                      | Bal.                                | 8.0  | 0.3   |
|   | TF9K        | 0.5                                      | K05-K15            | 93.0                  | 3.8   | 14.5                      | Bal.                                | 9.0  | 0.5   |
|   | NF10        | 0.5                                      | K10-K30            | 92.5                  | 4.6   | 14.3                      | Bal.                                | 10.0 | 0.3   |
| 微粒<br>submicron                           | TUZ5T       | 0.6                                      | K05-K10            | 93.0                  | 3.2   | 15.0                      | Bal.                                | 5.0  | 0.5   |
|   | TUZ8        | 0.6                                      | K10-K20            | 92.0                  | 4.2   | 14.3                      | Bal.                                | 10.0 | —     |
|   | TUZ20K      | 0.6                                      | K15-K40            | 91.2                  | 3.9   | 14.1                      | Bal.                                | 13.0 | 0.5   |
|   | NF15        | 0.8                                      | K20-K40            | 91.5                  | 4.3   | 14.4                      | Bal.                                | 10.0 | —     |
| 中粒<br>fine·<br>midium                     | TK8         | 0.8 ~ 2.0                                | K10                | 92.0                  | 3.3   | 14.9                      | Bal.                                | 5.5  | 0.66  |
|   | TG2         | 1.5 ~ 3.5                                | K20                | 90.8                  | 3.5   | 14.8                      | Bal.                                | 7.0  | —     |
|   | TG5         | 1.5 ~ 3.5                                | K40                | 88.0                  | 3.6   | 14.2                      | Bal.                                | 12.5 | —     |

※ 1. 抗折力は丸棒 $\phi 6$ にて測定した値。

| 用途別の推奨材種 Recommended grades by Application |                    |               |                |                            |                   |             |                 |                  |                 |         |           |                 |               |          |
|--|--------------------|---------------|----------------|----------------------------|-------------------|-------------|-----------------|------------------|-----------------|---------|-----------|-----------------|---------------|----------|
|  | 用途 Application     |               |                |                            | 被削材 Work Material |             |                 |                  |                 |         |           |                 |               |          |
|  | エンドミル<br>End Mills | ドリル<br>Drills | リーマ<br>Reamers | 超硬<br>パンチ<br>素材<br>Punches | 軟鋼                | 一般鋼         | 高硬度材            | ステンレス鋼           | チタン合金           | インコネル   | 鋳鉄        | アルミ合金           | 銅合金           | グラファイト   |
|  |                    |               |                |                            | Mild Steels       | Mild Steels | Hardened Steels | Stainless Steels | Titanium Alloys | Inconel | Cast Iron | Aluminum Alloys | Copper Alloys | Graphite |
| NU08                                       | ◎                  |               |                |                            |                   | ○           | ◎               |                  |                 |         |           |                 |               |          |
| NF08                                       | ◎                  |               |                |                            | ○                 | ◎           | ◎               |                  |                 |         |           |                 |               |          |
| TF9K                                       | ◎                  | ○             | ○              |                            |                   |             | ○               | ○                | ○               | ○       |           |                 | ◎             |          |
| NF10                                       | ○                  | ◎             |                |                            | ◎                 | ◎           | ○               | ◎                | ○               | ○       | ○         |                 |               |          |
| TUZ5T                                      |                    |               | ◎              |                            |                   |             |                 | ○                |                 |         |           | ○               |               | ◎        |
| TUZ8                                       | ◎                  | ◎             | ○              |                            | ◎                 | ◎           | ○               | ◎                | ○               | ○       | ○         |                 |               |          |
| TUZ20K                                     | ◎                  | ◎             |                | ○                          | ○                 | ○           |                 |                  |                 |         | ◎         |                 |               |          |
| NF15                                       | ◎                  | ◎             |                |                            | ◎                 | ◎           |                 | ○                | ◎               | ◎       | ◎         | ○               | ◎             |          |
| TK8  |                    |               | ○              |                            |                   | ○           |                 |                  |                 |         | ◎         | ◎               | ◎             |          |
| TG2  | ○                  | ○             |                | ○                          | ○                 |             |                 |                  |                 |         | ○         |                 |               |          |
| TG5  |                    |               |                | ◎                          | ○                 |             |                 |                  |                 |         |           | ○               | ○             |          |

※ユーザー様の適用歴調査によるもので、適用品目と刃型仕様に大きく左右されます。