

KORLOY NOTICE

“Another Originality” Everyday we pursue Another Originality for the Future

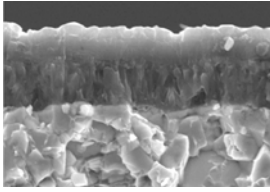
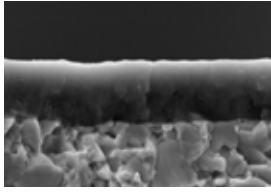
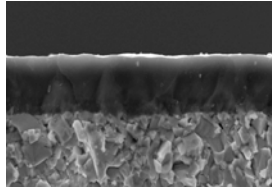
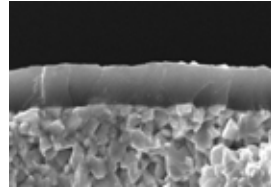




Ultra Coating Series (UNC805 / UNC840 / UPC810 / UPC845)

Purpose

- To promote premium grade for machining of HRSA including Inconel, Hastelloy, Titanium alloy etc.

Detailed information

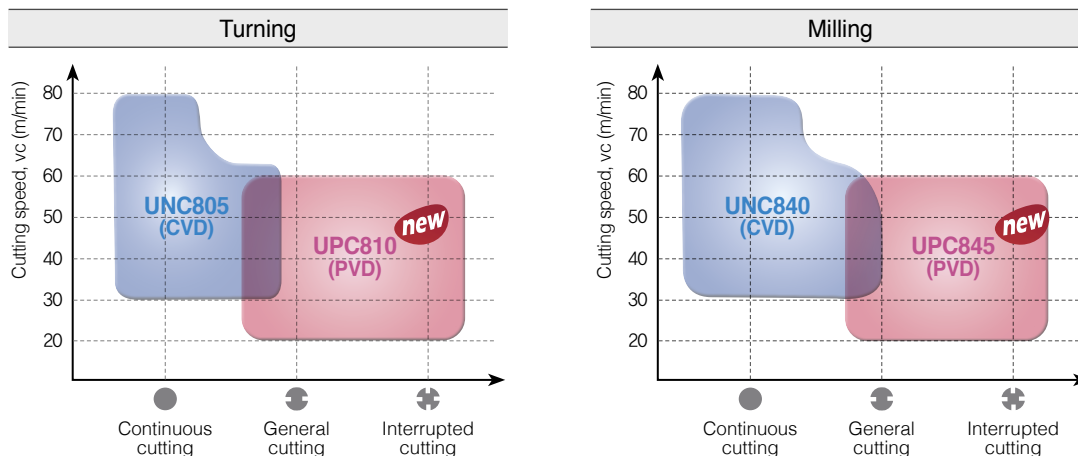
1 Subject Item

| UNC805 (CVD Turning) | UNC840 (CVD Milling) | UPC810 (PVD Turning) new | UPC845 (PVD Milling) new |
|--|--|--|--|
|  |  |  |  |
|  |  |  |  |
| <ul style="list-style-type: none"> - Good performance in high speed machining - For high speed and low feed machining - For forged workpiece - For high hardness (H_RC35 or above) HRSA - For large-sized workpiece (Ø200 or above) | | <ul style="list-style-type: none"> - Good performance in low speed and high feed machining - For high interrupted cutting conditions - For cast and round bar machining - For low hardness (under H_RC35) HRSA - For workpiece (under Ø200) | |

2 Features

- Enhanced substrate in order to minimize thermal crack resistance at high temperature and prevent unexpected tool breakage
- Increased chip removal volume thanks to **Ultra coating** technology with high hardness and lubrication
- Minimized built-up edge due to the optimized cutting edge of the insert

3 Application range



Launch date

- From June 2020

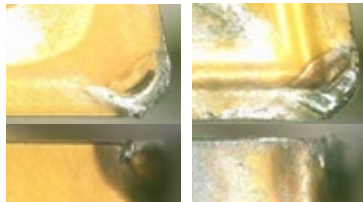
Grade comparison (Turning)

| Grade | KORLOY | SANDVIK | TaeguTec | Kyocera | Kenametal | SECO |
|-------|-----------------------|---------|------------------|---------|-----------|--------|
| S05 | UNC805 | S05F | TT3005 TT05C | CA6515 | KCM15 | TH1500 |
| S10 | UPC810 ^{new} | GC1105 | TT5080 TT3010 | PR1115 | KC5010 | TH1000 |

Application examples (Turning)

UNC805

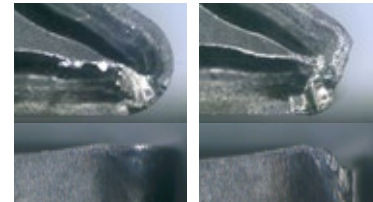
- **Workpiece** 9723 (ISO), Inconel718 (AISI), IN718 (KS)
- **Cutting conditions** vc (m/min) = 60, fn (mm/rev) = 0.15, ap (mm) = 0.4, wet
- **Cutting pass** After 15 minutes of machining, both the rake surface and major cutting edge of insert showed no excessive wear
- **Tools** **Insert** CNMG120408-VP4
Holder PCLNR2525-M12N



[UNC805] [Conventional grade]

UPC810

- **Workpiece** 5832-11 (ISO), Ti-6Al-4V (AISI), Ti-6Al-4V (KS)
- **Cutting conditions** vc (m/min) = 60, fn (mm/rev) = 0.35, ap (mm) = 0.4, wet
- **Cutting pass** After 15 minutes of machining, both the rake surface and major cutting edge of insert showed no excessive wear
- **Tools** **Insert** VBGT160408-MU
Holder SVJVL2525-M16



[UPC810] [Conventional grade]

Recommended cutting conditions (Turning)

| Application | Grade | Chip breaker | Recommended cutting conditions | | | | | | |
|----------------|--------|----------------------------------|--------------------------------|-------------|---------|----------------|-------------|---------|-----|
| | | | Inconel | | | Titanium alloy | | | |
| | | | vc (m/min) | fn (mm/rev) | ap (mm) | vc (m/min) | fn (mm/rev) | ap (mm) | |
| Finishing | UNC805 | General use (1st recommendation) | 30-60 | 0.10-0.20 | ≤ 1.0 | 40-80 | 0.10-0.20 | ≤ 1.0 | |
| | | Good chip control | | | | | | | VP2 |
| | | Good toughness | | | | | | | MU |
| | UPC810 | General use (1st recommendation) | 20-50 | 0.10-0.30 | ≤ 1.0 | 30-60 | 0.10-0.30 | ≤ 1.0 | |
| | | Good chip control | | | | | | | VP2 |
| | | Good toughness | | | | | | | MU |
| Medium cutting | UNC805 | General use (1st recommendation) | 30-60 | 0.10-0.25 | ≤ 1.5 | 40-80 | 0.10-0.25 | ≤ 1.5 | |
| | | Good chip control | | | | | | | MM |
| | | Good toughness | | | | | | | LU |
| | UPC810 | General use (1st recommendation) | 20-50 | 0.10-0.30 | ≤ 1.5 | 30-60 | 0.10-0.30 | ≤ 1.5 | |
| | | Good chip control | | | | | | | VP3 |
| | | Good toughness | | | | | | | MU |
| Roughing | UNC805 | General use (1st recommendation) | 30-60 | 0.15-0.30 | ≤ 3.0 | 40-80 | 0.15-0.30 | ≤ 3.0 | |
| | | Good chip control | | | | | | | VP4 |
| | | Good toughness | | | | | | | MU |
| | UPC810 | General use (1st recommendation) | 20-50 | 0.10-0.40 | ≤ 3.0 | 30-60 | 0.10-0.40 | ≤ 3.0 | |
| | | Good chip control | | | | | | | VP4 |
| | | Good toughness | | | | | | | MU |

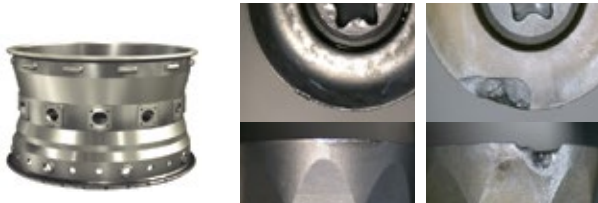
Grade comparison (Milling)

| Grade | KORLOY | SANDVIK | TaeguTec | Kyocera | MMC | CERATIZIT | ISCAR | Walter |
|-------|-----------------------|--------------------------|----------|---------|------------------|--------------------|----------------|----------------------------|
| S40 | UNC840 | S40T | TT9540 | CA6535 | US735 | CTC5235 CTC5240 | IC928 IC830 | WSM25S WSM30S WSM35S |
| S45 | UPC845 ^{new} | S30T GC1030 GC2040 | TT3540 | PR1535 | VP15TF MP9130 | - | IC830 | WSM45S |

Application examples (Milling)

UNC840

- **Workpiece** 9723 (ISO), Inconel718 (AISI), IN718 (KS)
- **Cutting conditions** vc (m/min) = 40, fz (mm/t) = 0.35, ap (mm) = 1.5 -1.8, wet
- **Cutting pass** After 20 minutes of machining, both the rake surface and major cutting edge of insert showed no excessive wear
- **Tools** **Insert** RPMT12040M0E-ML4
Holder FMRCM4055RP-4



[UNC840] [Conventional grade]

UPC845

- **Workpiece** 5832-11 (ISO), Ti-6Al-4V (AISI), Ti-6Al-4V (KS)
- **Cutting conditions** vc (m/min) = 40, fz (mm/t) = 0.7, ap (mm) = 0.5, wet
- **Cutting pass** After 30 minutes of machining, both the rake surface and major cutting edge of insert showed no excessive wear
- **Tools** **Insert** LNMX060310R-ML
Holder HFMSD032R-5C32-200-LN06



[UPC845] [Conventional grade]

Recommended cutting conditions (Milling)

| Application | Grade | Chip breaker | Recommended cutting conditions | | | | | | | | | |
|-------------------|----------------------|--------------|---|-----------|---------|------------|----------------|-------------|---------|------------|------|-------------|
| | | | Inconel | | | | Titanium alloy | | | | | |
| | | | vc (m/min) | fz (mm/t) | ap (mm) | ae (mm) | vc (m/min) | fz (mm/t) | ap (mm) | ae (mm) | | |
| FMR P-positive | High speed machining | UNC840 | For general cutting (KA*) | ML | 30 - 50 | 0.4 - 0.5 | ≤2.0 | 0.7D - 0.1D | 30 - 80 | 0.4 - 0.8 | ≤2.0 | 0.7D - 0.1D |
| | | | For general cutting (MU*) | ML2 | | | | | | | | |
| | | | Rough | ML3 | | | | | | | | |
| | | | Finishing | ML4 | | | | | | | | |
| | | | Heavy interrupted cutting, Low depths of cut | MF | | | | | | | | |
| | | | Heavy interrupted cutting, High depths of cut | MM | | | | | | | | |
| FMR P-positive | High feed machining | UPC845 | For general cutting (KA*) | ML | 20 - 40 | 0.4 - 0.6 | ≤3.0 | 0.7D - 0.1D | 20 - 60 | 0.4 - 1.0 | ≤3.0 | 0.7D - 0.1D |
| | | | For general cutting (MU*) | ML2 | | | | | | | | |
| | | | Rough | ML3 | | | | | | | | |
| | | | Finishing | ML4 | | | | | | | | |
| | | | Heavy interrupted cutting, Low depths of cut | MF | | | | | | | | |
| | | | Heavy interrupted cutting, High depths of cut | MM | | | | | | | | |
| HFM / HFMD | High speed machining | UNC840 | Finishing - Medium | ML | 30 - 50 | 0.6 - 1.0 | ≤1.0 | 0.7D - 0.1D | 30 - 80 | 0.6 - 1.0 | ≤1.0 | 0.7D - 0.1D |
| | | | Medium - Rough | MF | | | | | | | | |
| | High feed machining | UPC845 | Finishing - Medium | ML | 20 - 40 | 0.6 - 1.2 | ≤1.0 | 0.7D - 0.1D | 20 - 60 | 0.6 - 1.2 | ≤1.0 | 0.7D - 0.1D |
| | | | Medium - Rough | MF | | | | | | | | |
| APMT / ADKT | High speed machining | UNC840 | Finishin - Medium | ML | 30 - 50 | 0.05 - 0.2 | ≤9.0 | ≤0.3D | 30 - 80 | 0.05 - 0.2 | ≤9.0 | ≤0.3D |
| | | | Medium - Rough | MF | | | | | | | | |
| | High feed machining | UPC845 | Finishin - Medium | ML | 20 - 40 | 0.07 - 0.3 | ≤9.0 | ≤0.3D | 20 - 60 | 0.07 - 0.3 | ≤9.0 | ≤0.3D |
| | | | Medium - Rough | MF | | | | | | | | |

※ KA Grade : Grinding / MU Grade : Non-Grinding

Available Stock (Turning)

| Designation | Grade | | |
|-------------|------------|--------|---|
| | UNC805 | UPC810 | |
| CNMG | 120408-MM | ● | ● |
| | 120412-MM | ● | ● |
| | 120408-VP2 | ● | ● |
| | 120408-VP3 | | ● |
| | 120412-VP3 | ● | ● |
| | 120408-VP4 | ● | ● |
| | 120412-VP4 | ● | ● |
| DNMG | 150604-MM | ● | ● |
| | 150608-MM | ● | ● |
| | 150604-VP2 | ● | |
| | 150608-VP2 | ● | |
| | 150604-VP3 | ● | ● |
| | 150608-VP3 | | ● |
| SNMG | 120408-MM | ● | ● |
| | 120412-MM | ● | ● |
| | 120408-VP3 | | ● |
| | 120412-VP3 | | ● |
| | 120408-VP4 | ● | ● |
| | 120412-VP4 | ● | ● |

| Designation | Grade | | |
|-------------|------------|--------|---|
| | UNC805 | UPC810 | |
| VBGT | 160404-MU | ● | ● |
| | 160408-MU | ● | ● |
| | 160412-MU | ● | ● |
| VBMT | 160404-LU | ● | ● |
| | 160408-LU | ● | ● |
| | 160412-LU | ● | ● |
| | 160404-MP | ● | ● |
| | 160408-MP | ● | ● |
| | 160412-MP | ● | ● |
| VNMG | 160404-VP3 | | ● |
| | 160408-VP3 | | ● |
| WNMG | 80408-MM | ● | ● |
| | 80412-MM | ● | ● |
| | 80408-VP2 | ● | |
| | 80412-VP2 | ● | |
| | 80408-VP3 | | ● |
| | 80412-VP3 | | ● |
| | 80408-VP4 | ● | ● |
| | 80412-VP4 | ● | ● |

Available Stock (Milling)

| Designation | Grade | | |
|-------------|---------------|--------|---|
| | UNC840 | UPC845 | |
| ADKT | 170608PESR-ML | ● | ● |
| | 170608PESR-MM | ● | ● |
| APMT | 11T308PDER-ML | ● | ● |
| | 11T3PDER-ML | ● | ● |
| LNMX | 060310R-MF | ● | ● |
| | 060310R-ML | ● | ● |
| RPET | 10T3M0E-ML | ● | ● |
| | 1606M0E-ML | | ● |
| RPMT | 10T3M0E-MF | ● | ● |
| | 1204M0E-MF | ● | ● |
| | 1204M0E-ML2 | ● | ● |
| | 1204M0E-ML3 | ● | ● |

| Designation | Grade | | |
|-------------|---------------|--------|---|
| | UNC840 | UPC845 | |
| RPMT | 1204M0E-ML4 | ● | ● |
| | 1204M0S-MM | ● | ● |
| | 1606M0E-MF | ● | ● |
| | 1606M0E-ML1 | ● | ● |
| | 1606M0E-ML2 | | ● |
| | 1606M0S-MM | | ● |
| | 2007M0E-MF | | ● |
| | 2007M0S-MM | | ● |
| WNGX | 040308PNER-ML | ● | ● |
| | 080608PNER-ML | ● | ● |
| WNMX | 09T316ZNN-ML | ● | ● |
| | 130520ZNN-ML | ● | ● |