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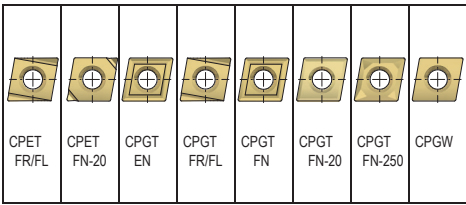
DENITTOOL-DATA

MiniTools 1

**Caution: General safety regulations and directions of machine manufacturers must be observed at any time!**

| Material description | W-Nr. German | AISI/SAE | Tensile strength | Hardness |
|----------------------|--------------|----------|------------------|----------|
|----------------------|--------------|----------|------------------|----------|

|   | Rm (N/mm <sup>2</sup> ) |                  | HB            |           |
|---|-------------------------|------------------|---------------|-----------|
| 1 Low Carbon Steel                          | 1.0035                  | 1010             | - 500         | - 160     |
|   | 1.0038                  | 1045             |               |           |
|   | 1.0401                  | 1015             |               |           |
|   | 1.0050                  | 1050             |               |           |
| 2 Alloy Steel                               | 1.0501                  | 1035             | 500 - 700     | 140 - 200 |
|   | 1.1141                  | 1115             |               |           |
|   | 1.5732                  | 3415             |               |           |
|   | 1.7225                  | 4140             |               |           |
| 3 Tool Steel                                | 1.1221                  | 1060             | 900 - 1'100   | 170 - 275 |
|   | 1.3505                  | 52100            |               |           |
|   | 1.7225                  | 4140             |               |           |
|   | 1.5141                  | -                |               |           |
| 4 Alloy Tool Steel                          | 1.1191                  | 4140             | 700 - 900     | 250 - 325 |
|   | 1.7225                  | 4142             |               |           |
|   | 1.2080                  | D3               |               |           |
|   | 1.7220                  | 4135             |               |           |
| 5 Alloy Cast Steel                          | 1.6582                  | 4340             | 1'100 - 1'500 | 325 - 450 |
|   | 1.8159                  | 6150             |               |           |
|   | 1.2367                  | A2               | 800 - 1'000   | 250 - 300 |
|   | 1.7361                  | 4145             |               |           |
| 6 Stainless Steel                           | 1.4006                  | 403              | - 800         | - 250     |
|   | 1.4057                  | 431              |               |           |
|   | 1.4034                  | 420              |               |           |
|   | 1.4005                  | 416              |               |           |
| 7 Stainless Steel - Austenitic, Martensitic | 1.4300                  | 302              | 500 - 1100    | 200 - 325 |
|   | 1.4301                  | 304 (304H)       |               |           |
|   | 1.4435                  | 316              |               |           |
|   | 1.4542                  | 17-4 ph          |               |           |
| 8 Grey Cast Iron                            | 0.6010                  | A48-20B          | - 250         | - 200     |
|   | 0.6015                  | A48-25B          |               |           |
|   | 0.6020                  | A48-30B          |               |           |
| 9 Cast Iron Malleable                       | 0.6025                  | A48-35B          | 250 - 350     | 200 - 250 |
|   | 0.8135                  | A48-40B          |               |           |
|   | 0.8140                  | A48-45B          |               |           |
|   | 0.7050                  | 80-55-06         |               |           |
| 10 Copper Alloys                            | 2.0331                  | B121             | 450 - 650     | 120 - 180 |
|   | 2.0401                  | B121             |               |           |
|   | 2.1030                  | B103             |               |           |
|   | 2.0920                  | CuAl 8           |               |           |
| 11 Aluminium Alloys                         | 3.2582.05               | 383.2 (ALSi-12)  | 250 - 350     | 200 - 300 |
|   | 3.3541.01               | 514.0 (AlMg 3)   |               |           |
|   | 3.2315                  | 413.0 (ALMgSi 1) |               |           |
|   | 3.0205                  | 1200 (AL 99)     |               |           |



| f (ipr) *) |       |       |       |       |       |       |  |
|------------|-------|-------|-------|-------|-------|-------|--|
| .0012      | 0.012 | .0020 | 0.012 | .0012 | .0008 |       |  |
| .0028      | 0.028 | .0059 | 0.028 | .0039 |       |       |  |
| .0055      |       | .0098 |       | .0059 |       |       |  |
| .0012      | .0012 | .0020 | .0012 | .0012 |       |       |  |
| .0028      | .0028 | .0059 | .0028 | .0039 |       |       |  |
| .0055      |       | .0098 |       | .0059 |       |       |  |
| .0012      | 0.012 | .0020 | 0.012 | .0012 |       |       |  |
| .0028      | 0.028 | .0059 | 0.028 | .0039 |       |       |  |
| .0055      |       | .0098 |       | .0059 |       |       |  |
| .0012      | .0012 | .0020 | .0012 |       |       | .0020 |  |
| .0028      | .0028 | .0059 | .0028 |       |       | .0059 |  |
| .0055      |       | .0098 |       |       |       | .0098 |  |
| .0012      | .0012 | .0020 |       |       |       | .0020 |  |
| .0028      | .0028 | .0059 |       |       |       | .0059 |  |
| .0055      |       | .0098 |       |       |       | .0098 |  |
| .0012      | .0012 | .0020 |       |       |       | .0020 |  |
| .0028      | .0028 | .0059 |       |       |       | .0059 |  |
| .0055      |       | .0098 |       |       |       | .0098 |  |
| .0008      | .0008 | .0008 |       | .0008 | .0008 | .0008 |  |
| .0059      | .0059 | .0059 |       | .0059 | .0039 | .0047 |  |
| .0098      | .0098 | .0079 |       | .0079 | .0039 | .0098 |  |
|            | .0008 |       |       | .0020 | .0008 | .0008 |  |
|            | .0059 |       |       | .0039 | .0059 | .0059 |  |
|            |       |       |       | .0079 | .0118 | .0118 |  |

| Carbide  |     |        |           |      |                | Cermet   |        |       |
|----------|-----|--------|-----------|------|----------------|----------|--------|-------|
| uncoated |     | coated |           |      |                | uncoated | coated |       |
| DX2      | P25 | DP25   | DP35 DP55 | DX20 | DX30 DX50 DX52 | DT55     | DT255  | DT355 |

| Vc (sfm) |      |      |      |       |       |      |      |      |
|----------|------|------|------|-------|-------|------|------|------|
|          | 725  | 1120 | 1250 | 1120  | 1250  | 1500 | 1900 | 1900 |
|          | 590  | 950  | 1050 | 950   | 1050  | 1220 | 1550 | 1550 |
|          | 425  | 790  | 850  | 790   | 850   | 825  | 1050 | 1051 |
|          | 425  | 1050 | 1190 | 1050  | 1190  | 1450 | 1800 | 1800 |
|          | 330  | 890  | 990  | 890   | 990   | 1150 | 1450 | 1450 |
|          | 265  | 725  | 790  | 725   | 800   | 725  | 925  | 926  |
|          | 360  | 860  | 1050 | 860   | 1050  | 1350 | 1680 | 1680 |
|          | 265  | 690  | 960  | 690   | 960   | 1120 | 1380 | 1380 |
|          | 165  | 560  | 660  | 560   | 660   | 760  | 960  | 961  |
|          | 300  | 660  | 860  |       |       | 725  | 890  | 890  |
|          | 200  | 600  | 725  |       |       | 660  | 790  | 790  |
|          | 135  | 400  | 525  |       |       | 460  | 560  | 561  |
|          |      | 460  | 660  |       |       | 600  | 725  | 725  |
|          |      | 400  | 525  |       |       | 500  | 625  | 625  |
|          |      | 300  | 400  |       |       | 400  | 500  | 501  |
|          |      | 525  | 560  | 525   | 560   |      | 660  | 660  |
|          |      | 460  | 525  | 460   | 525   |      | 625  | 626  |
|          |      | 400  | 425  | 400   | 425   |      | 500  | 500  |
|          |      | 330  | 360  | 330   | 360   |      | 425  | 426  |
|          | 460  | 850  | 925  | 850   | 925   | 600  | 1120 | 1190 |
|          | 400  | 725  | 825  | 725   | 825   | 525  | 925  | 1060 |
|          | 330  | 660  | 760  | 660   | 760   | 425  | 860  | 990  |
|          | 400  | 725  | 825  | 725   | 825   | 525  | 925  | 1050 |
|          | 300  | 660  | 725  | 600   | 725   | 400  | 860  | 925  |
|          | 230  | 600  | 660  | 600   | 660   | 300  | 790  | 860  |
|          | 1480 | 1800 | 1980 | 1800  | 1980  | 1900 | 2370 | 2570 |
|          | 1320 | 1650 | 1800 | 1650  | 1800  | 1700 | 2145 | 2375 |
|          | 1150 | 1480 | 1650 | 1480  | 1650  | 1485 | 1900 | 2145 |
|          |      |      |      | >6200 | >6600 |      |      |      |

\*) in function of stability of tool & workpiece

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