

Bar products: main stainless steel grades

| Ugitech brand names | European standards EN 10088, EN 10095, EN 10269, WL, EN506-1 | | UNS | JIS | AISI, ASTM, or other designations | Chemical composition | | | | | |
|---------------------|--|-------------------------|-----|-----|--|----------------------|------|------|------|-----|----------|
| | Material no. (Numerical) | EN Symbolic designation | | | | C % | Ni % | Cr % | Mo % | S % | Others % |

MARTENSITIC STAINLESS STEELS

Soft annealed condition

| | | | | | | | | | | | |
|--|------------------|----------------|--------|-----------|-------------|-----------|---------|-----------|---------|-------------|------------|
| UGI® 4005 UGIMA® 4005 UGI® 4005A | 1.4005 | X12CrS13 | S41600 | SUS 416 | 416 416A | 0.06-0.15 | | 12-14 | ≤ 0.6 | 0.150-0.350 | Mn 1.5 |
| UGI® 4021 UGIMA® 4021 | 1.4021 | X20Cr13 | S42000 | SUS 420J1 | 420 | 0.16-0.25 | | 12-14 | | ≤ 0.030 | Mn 1.5 |
| UGI® 4028 UGIMA® 4028 | 1.4028 | X30Cr13 | S42000 | SUS 420J2 | 420 | 0.26-0.35 | | 12-14 | | ≤ 0.030 | Mn 1.5 |
| UGI® 4029 | 1.4029 | X29CrS13 | S42020 | SUS 420F | 420F | 0.25-0.32 | | 12-13.5 | 0.6 | 0.150-0.250 | Mn 1.5 |
| UGI® 4031 | 1.4031 | X39Cr13 | | | 420C | 0.36-0.42 | | 12.5-14.5 | | ≤ 0.030 | |
| UGI® 4034 | 1.4034 | X46Cr13 | S42000 | | 420 | 0.43-0.50 | | 12.5-14.5 | ≤ 0.5 | ≤ 0.030 | Mn 1 |
| UGI® 4035 | 1.4035 | X46CrS13 | | | 420 / 420F | 0.43-0.50 | | 12.5-14 | | 0.150-0.350 | Mn 2 |
| UGI® 4116N | 1.4116 | X50CrMoV15 | | | | 0.45-0.55 | | 14-15 | 0.5-0.8 | ≤ 0.030 | Mn 1 |
| UGI® 4122 | 1.4122 | X30CrMo17-1 | | | | 0.33-0.45 | ≤ 1 | 15.5-17.5 | 0.8-1.3 | ≤ 0.030 | Mn 1.5 |
| UGI® 4197 UGI® 4121 | 1.4197 | X22CrNiMoS13-1 | | | 420F2 | 0.20-0.30 | 0.7-1 | 12.5-13.5 | 1-1.5 | 0.150-0.250 | Mn 1-1.5 |
| UGI® 4922 UGI® 4923 | 1.4922 1.4923 | X22CrMoV12-1 | | | | 0.17-0.24 | 0.3-0.8 | 10-12.5 | 0.8-1.2 | ≤ 0.015 | V 0.2-0.35 |
| UGIPURE® 422 | | | | | 422 | 0.16-0.25 | | 12-14 | | ≤ 0.030 | Mn 1.5 |

Quenched and tempered

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|--|------------------|-----------------|--------|-----------|-------------|-----------|---------|-----------|-----------|-------------|--|
| UGI® 4005 UGI® 4005A UGIMA® 4005 | 1.4005 | X12CrS13 | S41600 | SUS 416 | 416 416A | 0.06-0.15 | | 12-14 | ≤ 0.6 | 0.150-0.350 | Mn 1.5 |
| UGI® 4006 UGIMA® 4006 | 1.4006 | X12Cr13 | S41000 | SUS 410 | 410 | 0.08-0.15 | ≤ 0.75 | 11.5-13.5 | | ≤ 0.030 | Mn 1.5 |
| UGI® 4006A | 1.4006 | X12Cr13 | S41000 | SUS 410 | 410 | 0.08-0.15 | ≤ 0.75 | 11.5-13.5 | | ≤ 0.030 | Mn 1.5; B ≤ 0.0015 |
| UGI® 4021 UGIMA® 4021 | 1.4021 | X20Cr13 | S42000 | SUS 420J1 | 420 | 0.16-0.25 | | 12-14 | | ≤ 0.030 | Mn 1.5 |
| UGI® 4028 UGIMA® 4028 | 1.4028 | X30Cr13 | S42000 | SUS 420J2 | 420 | 0.26-0.35 | | 12-14 | | ≤ 0.030 | Mn 1.5 |
| UGI® 4028W | 1.4028 | X30Cr13 | S42000 | SUS 420J2 | 420 | 0.26-0.35 | | 12-14 | | ≤ 0.030 | Mn 1.5 |
| UGI® 4031 | 1.4031 | X39Cr13 | | | 420C | 0.36-0.42 | | 12.5-14.5 | | ≤ 0.030 | |
| UGI® 4034 UGIMA® 4034 | 1.4034 | X46Cr13 | S42000 | | 420 | 0.43-0.50 | | 12.5-14.5 | ≤ 0.5 | ≤ 0.030 | Mn 1 |
| UGI® 4057 UGIMA® 4057 | 1.4057 | X17CrNi16-2 | S43100 | SUS 431 | 431 | 0.12-0.22 | 1.5-2.5 | 15-17 | | ≤ 0.030 | Mn 1.5 |
| UGI® 4057 UGI® 4057FG UGI® 4057Q | 1.4057 | X15CrNi17-3 | S43100 | SUS 431 | 431 | 0.17-0.20 | 2-2.5 | 15-16.5 | | ≤ 0.005 | Mn 1 max; Si 0.8 max |
| UGI® 4122 | 1.4122 | X30CrMo17-1 | | | | 0.33-0.45 | ≤ 1 | 15.5-17.5 | 0.8-1.3 | ≤ 0.030 | Mn 1.5 |
| UGI® 4313 | 1.4313 | X3CrNiMo13-4 | S41500 | SUS F6NM | 415 | ≤ 0.05 | 3.5-4.5 | 12-14 | 0.3-0.7 | ≤ 0.015 | Mn 1.5 |
| UGI® 4418 | 1.4418 | X4CrNiMo16-5-1 | | | | ≤ 0.06 | 4-6 | 15-17 | 0.8-1.5 | ≤ 0.030 | Mn 1.5 |
| UGI® 4418Q UGI® 4418QHP | 1.4418 | X4CrNiMo16-5-1 | | | | ≤ 0.06 | 4-6 | 15-17 | 0.8-1.5 | ≤ 0.005 | Mn 1.5; Co ≤ 0.1; Nb+Ta ≤ 0.45; B ≤ 0.0015; |
| UGI® 4913 | 1.4913 | X19CrMoNbVN11-1 | | | | 0.17-0.23 | 0.2-0.6 | 10-11.5 | 0.50-0.80 | ≤ 0.015 | Nb 0.25-0.55; V 0.1-0.3; Al 0.02 |
| UGI® 4922 UGI® 4923 | 1.4922 1.4923 | X22CrMoV12-1 | | | | 0.17-0.24 | 0.3-0.8 | 10-12.5 | 0.80-1.20 | ≤ 0.015 | V 0.2-0.35 |

CHROMIUM FERRITIC STAINLESS STEELS

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|--------------------------|----------|------------------|--------|-----------|----------------|-----------|-------|-----------|---------|-------------|-----------------------------|
| UGI® 4016 | 1.4016 | X6Cr17 | S43000 | SUS 430 | 430 | ≤ 0.08 | | 16-18 | | ≤ 0.030 | Mn 1 |
| UGI® 4104 UGIMA® 4104 | 1.4104 | X14CrMoS17 | S43020 | | 430F | 0.10-0.17 | | 15.5-17.5 | 0.2-0.6 | 0.150-0.350 | Mn 1.5; Si 1 |
| UGI® 4105 | 1.4105 | X6CrMoS17 | S43020 | | 430F | ≤ 0.08 | | 16-18 | 0.2-0.6 | 0.150-0.350 | Mn 1.5 |
| UGI® 4105Si | 1.4105 | X6CrMoS17 | | | 430FR | ≤ 0.08 | | 16-18 | 0.2-0.6 | 0.150-0.360 | Mn ≤ 1.5; Si ≤ 1.5 |
| UGI® 4106 / IMRE | 1.4106** | X2CrMoSiS18-2-1* | S18200 | | | ≤ 0.03 | ≤ 0.5 | 17.5-18 | 1.5-2.0 | 0.230-0.280 | Mn ≤ 0.6; Si: 1.3-1.5 |
| UGI® 4113 | 1.4113 | X6CrMo17-1 | S43400 | SUS 434 | 434 | ≤ 0.08 | | 16-18 | 0.9-1.4 | ≤ 0.030 | Mn 1 |
| UGI® 4114 | 1.4114** | X6CrMoS19-2* | | | 434F UGV182 | 0.05-0.08 | ≤ 0.5 | 17.5-19 | 1.5-2.5 | 0.150-0.250 | Mn ≤ 0.5 |
| UGI® 4509 UGIMA® 4509 | 1.4509 | X2CrTiNb18 | S43940 | SUS 430LX | 441 | ≤ 0.03 | | 17.5-18.5 | | ≤ 0.015 | Mn 1; Ti 0.1-0.6 |
| UGI® 4511 UGIMA® 4511 | 1.4511 | X3CrNb17 | | SUS 430LX | 430LNb | ≤ 0.05 | | 16-18 | | ≤ 0.030 | Mn 1; Nb 12C-1 |
| UGI® 4601 | 1.4601 | X6CrNb12 | | | 409Cb | ≤ 0.03 | ≤ 0.5 | ≤ 12 | ≤ 0.5 | ≤ 0.01 | Mn ≤ 0.8; Nb 10xC or ≤ 0.75 |
| UGIPERM®12FM | | X12CrS13+Si* | | | 416Si | ≤ 0.02 | ≤ 0.5 | 11-13 | 0-0.5 | 0.150-0.250 | Mn ≤ 0.5 |

STRUCTURALLY HARDENED STAINLESS STEEL

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|-------------------------------------|--------|----------------|--------|---------|---------------|--------|-----|---------|-----|---------|---|
| UGI® 4542 UGIMA® 4542 | 1.4542 | X5CrNiCuNb16-4 | S17400 | SUS 630 | 630 | ≤ 0.07 | 3-5 | 15-17 | 0.6 | ≤ 0.030 | Mn 1.5; Nb = 0.05/0.45; Cu = 3-5; Si 0.7 |
| UGI® 4542Q / 17-4PH UGI® 4542QHP | 1.4542 | X5CrNiCuNb17-4 | S17400 | SUS 630 | 17-4PH 630 | ≤ 0.07 | 3-5 | 15.5-17 | 0.6 | ≤ 0.005 | Mn 1.5; Nb = 0.05/0.45; Cu = 3-5; Si 0.7; O ≤ 0.1; Nb+Ta ≤ 0.45; B ≤ 0.0015 |

| Ugitech brand names | European standards EN 10088, EN 10095, EN 10269, WL, EN506-1 | | UNS | JIS | AISI, ASTM, or other designations | Chemical composition | | | | | |
|---------------------|--|-------------------------|-----|-----|--|----------------------|------|------|------|-----|----------|
| | Material no. (Numerical) | EN Symbolic designation | | | | C % | Ni % | Cr % | Mo % | S % | Others % |

STRUCTURALLY HARDENED STAINLESS STEEL

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|---------------------------------|--------|---------------------|--------|---------|---------------|-----------|---------|---------|-------|---------|---|
| UGI® 4542-1PUR | 1.4542 | X5CrNiCuNb17-4 | S17400 | SUS 630 | 17-4PH 630 | ≤ 0.07 | 3-5 | 15-17 | 0.6 | ≤ 0.005 | Mn 1.5; Nb = 0.05/0.45 Cu = 3-5; Si 0.7 |
| UGIPURE®15-5PH UGI® 4545PURE | 1.4545 | X5CrNiCu15-5 | S15500 | | 15-5PH | ≤ 0.07 | 3.5-5.5 | 14-15.5 | ≤ 0.5 | ≤ 0.005 | Si ≤ 1; Cu 2.5-4.5 |
| UGIPURE®A286 | 1.4980 | X6NiCrTiMoVB25-15-2 | S66286 | | 660 | 0.03-0.08 | 24-27 | 13.5-16 | 1-1.5 | ≤ 0.005 | Mn 1-2; Si ≤ 1; V 0.1-0.5; Al ≤ 0.35; Ti 1.9-2.3 |

AUSTENO-FERRITIC / DUPLEX STAINLESS STEELS

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|--------------------------|--------|-------------------|--------|------------|-----|--------|---------|---------|---------|---------|------------------------|
| UGI® 4062 | 1.4062 | X2CrNi22-2 | | | | ≤ 0.03 | 1-2.9 | 21.5-24 | 0.45 | ≤ 0.010 | Mn 2; Si 1 |
| UGI® 4362 UGIMA® 4362 | 1.4362 | X2CrNiN23-4 | S32304 | | | ≤ 0.03 | 3.5-5.5 | 22-24.5 | 0.1-0.6 | ≤ 0.015 | Mn 2; Si 1; Cu 0.1-0.6 |
| UGI® 4410 | 1.4410 | X2CrNiMoN25-7-4 | S32750 | | | ≤ 0.03 | 6-8 | 24-26 | 3.0-4.5 | ≤ 0.015 | Mn 2; Si 1 |
| UGI® 4460 UGIMA® 4460 | 1.4460 | X3CrNiMoN27-5-2 | S31200 | | 329 | ≤ 0.05 | 4.5-6.5 | 25-28 | 1.3-2 | ≤ 0.015 | Mn 2; Si 1 |
| UGI® 4462 | 1.4462 | X2CrNiMoN22-5-3 | S32205 | SUS 329J3L | F51 | ≤ 0.03 | 4.5-6.5 | 21-23 | 2.5-3.5 | ≤ 0.015 | Mn 2; Si 1 |
| UGI® 4507 | 1.4507 | X2CrNiMoCuN25-6-3 | S32550 | | | ≤ 0.03 | 6-8 | 24-26 | 3-4 | ≤ 0.015 | Mn 2; Si 0.7; Cu 1-2.5 |

AUSTENITIC STAINLESS STEELS

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|--|--------|-----------------|--------|-----------|--------------|-----------|----------|-----------|-----|-------------|--|
| UGI® 4301 UGIMA® 4301 (FG) | 1.4301 | X5CrNi18-10 | S30400 | SUS 304 | 304 | ≤ 0.07 | 8-10.5 | 17.0-19.5 | | ≤ 0.015 | Mn 2; Si 1 |
| UGI® 4305 UGIMA® 4305 UGIMA® 4305HM | 1.4305 | X8CrNiS18-9 | S30300 | SUS 303 | 303 | ≤ 0.10 | 8-10 | 17-19 | | 0.150-0.350 | Mn 2; Si 1; Cu 1 |
| UGI® 4306 (FG) | 1.4306 | X2CrNi19-11 | S30403 | SUS 304L | 304 / 304L | ≤ 0.03 | 10-12 | 18-20 | | ≤ 0.015 | Mn 2; Si 1 |
| UGI® 4307 UGIMA® 4307 (FG) UGIMA® 4307HM | 1.4307 | X2CrNi18-9 | S30403 | SUS 304L | 304 L | ≤ 0.03 | 8-10.5 | 17.5-19.5 | | ≤ 0.015 | Mn 2; Si 1 |
| UGI® 4307Q UGI® 4307QHP | 1.4307 | X2CrNi18-9 | S30403 | SUS 304L | 304L | ≤ 0.03 | 9-10 | 18 | | < 0.010 | Co ≤ 0.04; Nb+Ta ≤ 0.15; B ≤ 0.0015 |
| UGI® 4310 | 1.4310 | X10CrNi18-8 | S30100 | SUS 300 | 304H | 0.05-0.15 | 6-9.5 | 16-19 | 0.8 | ≤ 0.015 | Mn 2; Si 2 |
| UGI® 4311 | 1.4311 | X2CrNiN18-10 | S30453 | SUS 304LN | 304LN | ≤ 0.03 | 8.5-11.5 | 17.5-19.5 | | ≤ 0.015 | Mn 2; Si 1 |
| UGI® 4541 UGIMA® 4541 | 1.4541 | X6CrNiTi18-10 | S32100 | SUS 321 | 321 304Ti | ≤ 0.08 | 9-12 | 17-19 | | < 0.030 | Mn 2; Si 1; Ti 0.05-0.7 |
| UGI® 4541Q | 1.4541 | X6CrNiTi18-10 | S32100 | SUS 321 | 321 | ≤ 0.08 | 9-12 | 17-19 | | ≤ 0.005 | Mn 2; Si 1; Ti 0.05-0.7 |
| UGI® 4550Q | 1.4550 | X6CrNiNb18-10 | S34700 | SUS 347 | 347 | ≤ 0.08 | 9-12 | 17-19 | | ≤ 0.005 | Nb ≤ 0.40; Nb+Ta ≤ 0.65; B ≤ 0.0015 |
| UGI® 4567 UGIMA® 4567 | 1.4567 | X3CrNiCu18-9-4 | S30430 | SUS XM7 | 304Cu | ≤ 0.04 | 8.5-10.5 | 17-19 | | ≤ 0.015 | Mn 2; Si 1; Cu 3-4 |
| UGI® 4570 UGIMA® 4570 | 1.4570 | X6CrNiCuS18-9-2 | | SUS 303Cu | 303Cu | ≤ 0.08 | 8-10 | 17-19 | 0.6 | 0.150-0.350 | Mn 2; Si 1; Cu 1.4-1.8 |
| UGIMA® 303Cu+ | | | S30331 | SUS 303Cu | 303Cu+ | ≤ 0.08 | 8-10 | 17-19 | 0.6 | 0.150-0.350 | Mn 2; Si 0.5; Cu 2.5-3.0 |

CHROMIUM-NICKEL-MOLYBDENE AUSTENITIC STAINLESS STEELS

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|---|------------------|------------------------------------|--------|-----------|-----------------|--------|-----------|-----------|-----------|---------|--|
| UGI® 4401 UGIMA® 4401 UGIMA® 4401FG | 1.4401 | X5CrNiMo17-12-2 | S31600 | SUS 316 | 316 | ≤ 0.07 | 10-13 | 16.5-18.5 | 2-2.5 | ≤ 0.030 | Mn 2; Si 1 |
| UGI® 4404 UGIMA® 4404 UGIMA® 4404FG UGIMA® 4404 HM | 1.4404 | X2CrNiMo17-12-2 | S31603 | SUS 316L | 316L | ≤ 0.03 | 10-13 | 16.5-18.5 | 2-2.5 | ≤ 0.030 | Mn 2; Si 1 |
| UGI® 4406 | 1.4406 | X2CrNiMoN17-11-2 | S31653 | SUS 316LN | 316LN | ≤ 0.03 | 10-12.5 | 16.5-18.5 | 2-2.5 | ≤ 0.030 | Mn 2; Si 1; N: 0.12-0.22 |
| UGI® 4435FG UGIMA® 4435 UGIMA® 4435FG UGIMA® 4435ICH | 1.4435 1.4436 | X2CrNiMo18-14-3 X3CrNiMo17-13-3 | S31603 | SUS 316L | 316L (316Mo) | ≤ 0.03 | 12.5-15 | 17-19 | 2.5-3 | ≤ 0.030 | Mn 2; Si 1 |
| UGI® 4441HP UGI® 316LPURE | 1.4441 | X2CrNiMo18-15-3 | S31673 | | 316L | ≤ 0.03 | 13-15 | 17-19 | 2.25-3.5 | ≤ 0.010 | Cu ≤ 0.5; Mn ≤ 2.0; N ≤ 0.1 |
| UGI® 4539 | 1.4539 | X1NiCrMoCu25-20-5 | N08904 | SUS 890L | 904L | ≤ 0.02 | 24-26 | 19-21 | 4-5 | ≤ 0.010 | Mn 2; Si 0.7; Cu 1.2-2.0 |
| UGI® 4571 UGIMA® 4571 | 1.4571 | X6CrNiMoTi17-12-2 | S31635 | SUS 316Ti | | ≤ 0.08 | 10.5-13.5 | 16.5-18.5 | 2-2.5 | ≤ 0.030 | Mn 2; Si 1; Ti 0.05-0.7 |
| UGI® 4598 UGIMA® 4598 | 1.4598 | X3CrNiMoS17-11-2 | | | | ≤ 0.04 | 10-13 | 16.5-17.5 | 2-2.5 | ≤ 0.015 | Mn 2; Si 1; Cu 3-3.5 |
| UGI® 4909 UGI® 4909HP | 1.4909 | X2CrNiMo17-12-2 | | | 316L | ≤ 0.03 | 11.5-13 | 17-18 | 2.25-2.75 | ≤ 0.001 | Nb+Ta < 0.15; B ≤ 0.0015; Co ≤ 0.04 |
| UGI® 209 | | | S20910 | | | ≤ 0.06 | 11.5-13.5 | 20.5-23.5 | 2-3 | ≤ 0.030 | Nb; N; V; Si |

REFRACTORY AUSTENITIC STAINLESS STEELS

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|-----------|--------|----------------|--------|----------|-------|--------|-------|-------|--|---------|--------------------|
| UGI® 4828 | 1.4828 | X15CrNiSi20-12 | | | 309Si | ≤ 0.20 | 11-13 | 19-21 | | ≤ 0.015 | Si: 1.5-2.5 |
| UGI® 4841 | 1.4841 | X15CrNiSi25-21 | S31400 | | 314 | ≤ 0.20 | 19-22 | 24-26 | | ≤ 0.015 | Si: 1.5-2.5 |
| UGI® 4845 | 1.4845 | X8CrNi25-21 | S31008 | SUS 310S | 310S | ≤ 0.10 | 19-22 | 24-26 | | ≤ 0.015 | N ≤ 0.11; Si ≤ 1.5 |

REFRACTORY FERRITIC STAINLESS STEELS

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|-------------------------|---------|-------------|--|--|-----|--------|--|-------|--|---------|--|
| UGI® 4713 | 1.4713 | X10CrAlSi7 | | | | ≤ 0.12 | | 6-8 | | ≤ 0.015 | Al and Si: 0.5-1.0 |
| UGI® 4724 | 1.4724 | X10CrAlSi13 | | | | ≤ 0.12 | | 12-14 | | ≤ 0.015 | Al: 0.7-1.2; Si: 0.7-1.4 |
| UGI® 4742 UGI® 4742S | 1.4742 | X10CrAlSi18 | | | | ≤ 0.12 | | 17-19 | | ≤ 0.015 | Al: 0.7-1.2; Si: 0.7-1.4 |
| UGI® 4763 | 1.4763* | X8Cr24* | | | 446 | ≤ 0.12 | | 23-26 | | ≤ 0.015 | N ≥ 0.08; P ≤ 0.035; Si ≤ 0.75; Mn ≤ 0.75 |

*Grades not defined in EN 10088

Review: all properties and technical information are given for information and depend on the chemical analysis, dimensional range, manufacturing range, presentation and the component manufacturing process. Our sales and technical support departments are at your disposal to recommend a material (grade, as-delivered condition, heat treatment) commensurate with your application and specifications. Please do not hesitate to contact us for further information.

