

MIG/MAG WIRES

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Mild Steel

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CONSISTENCY MATTERS

CHOOSE THE RIGHT WELDING WIRE
FOR YOUR APPLICATION

SupraMIG
WIRE

MIG/MAG WIRES

LNM 25
SupraMig®
SupraMig® CF

SupraMig® HD
SupraMig Ultra®
SupraMig Ultra® HD
UltraMag®
UltraMag® SG3

| Diameter, polarity, Shielding gas | CTWD ⁽¹⁾ (mm) | Wire Feed Speed (m/min) | Voltage (V) | Approx. Current (A) | Melt-off rate (kg/hr) |
|--|-----------------------------|----------------------------|----------------|------------------------|--------------------------|
| 0.6 mm, DC+ | | | | | |
| Short Circuit Transfer 100% CO ₂ | 9-12 | 2.5 | 17 | 35 | 0.4 |
| | | 6.4 | 19 | 80 | 0.9 |
| 0.8 mm, DC+ | | | | | |
| Short Circuit Transfer 100% CO ₂ | 9-12 | 1.9 | 17 | 35 | 0.4 |
| | | 3.8 | 18 | 70 | 0.8 |
| | | 7.6 | 22 | 130 | 1.6 |
| 1.0 mm, DC+ | | | | | |
| Short Circuit Transfer 100% CO ₂ | 9-12 | 2.5 | 18 | 80 | 0.7 |
| | | 3.8 | 19 | 120 | 1.1 |
| | | 6.4 | 22 | 175 | 1.8 |
| Spray Transfer 90% Ar/10% CO ₂ | 12-19 | 9.5 | 23 | 195 | 2.7 |
| | | 12.7 | 29 | 230 | 3.6 |
| | | 15.2 | 30 | 275 | 4.4 |
| 1.2 mm, DC+ | | | | | |
| Short Circuit Transfer 100% CO ₂ ⁽²⁾ | 12-19 | 3.2 | 19 | 145 | 1.5 |
| | | 3.8 | 20 | 165 | 1.8 |
| | | 5.1 | 21 | 200 | 2.5 |
| Spray Transfer 80% Ar/20% CO ₂ | 12-19 | 8.9 | 27 | 285 | 4.2 |
| | | 12.1 | 30 | 335 | 5.7 |
| | | 12.7 | 30 | 340 | 6.0 |
| 1.4 mm, DC+ | | | | | |
| Spray Transfer 80% Ar/20% CO ₂ | 12-19 | 7.6 | 30 | 300 | 4.8 |
| | | 8.1 | 30 | 320 | 5.2 |
| | | 12.3 | 32 | 430 | 7.8 |
| 1.6 mm, DC+ | | | | | |
| Spray Transfer 80% Ar/20% CO ₂ | 12-25 | 5.3 | 25 | 325 | 4.8 |
| | | 6.0 | 27 | 350 | 5.4 |
| | | 7.4 | 28 | 430 | 6.7 |

⁽¹⁾ CTWD (Contact Tip to Work Distance). Subtract 6.4 mm to calculate Electrical Stickout.

⁽²⁾ Procedures in these areas are procedures for short circuiting mode using 100% CO₂. When using 80% Argon, 20% CO₂ for short circuit transfer, reduce voltage by 1 to 2 volts

LNM 25

CLASSIFICATION

| | | | | | |
|----------------|--------------|---------|---|--------|--------|
| AWS A5.18 | ER70S-3 | A-Nr | 1 | Mat-Nr | 1.5112 |
| EN ISO 14341-A | G 42 4 M 2Si | F-Nr | 6 | | |
| | | 9606 FM | 1 | | |

GENERAL DESCRIPTION

Solid wire for welding general construction in mild steel
 High impact values
 Stable arc and excellent feedability

WELDING POSITIONS (ISO/ASME)



PA/1G



PB/2F



PC/2G



PD/4F



PE/4G



PF/3Gu

SHIELDING GASES (ACC. ISO 14175)

| | |
|-----|---------------------------------------|
| M21 | Mixed gas Ar+ >15-25% CO ₂ |
| C1 | Active gas 100% CO ₂ |

APPROVALS

| | | | | | | |
|-----|----|-----|----|----|-----|----|
| ABS | BV | DNV | GL | LR | TÜV | CE |
| + | + | + | + | + | + | + |

CHEMICAL COMPOSITION (W%) TYPICAL WIRE

| | | |
|------|-----|-----|
| C | Mn | Si |
| 0.08 | 1.1 | 0.6 |

MECHANICAL PROPERTIES, TYPICAL, ALL WELD METAL

| | Shielding gas | Condition | Yield strength (N/mm ²) | Tensile strength (N/mm ²) | Elongation (%) | Impact ISO-V(J) -40°C |
|----------------|---------------|-----------|--|--|-------------------|--------------------------|
| Typical values | M21 | AW | 490 | 544 | 28 | 149 |

EXAMPLES OF MATERIALS TO BE WELDED

| Steel grades | Standard | Type |
|---------------------------------|-----------------|--|
| General structural steels | EN 10025 | S185, S235, S275, S355 |
| Ship plates | ASTM A131 | Grade A, B, D, AH32 to DH 36. |
| Cast steels | EN 10213-2 | GP240R |
| Pipe material | EN 10208-1 | L210, L240, L290, L360 |
| | EN 10208-2 | L240NB, L290NB, L360NB, L360QB, L240MB, L290MB, L360MB, L415MB, L415NB |
| | API 5LX | X42, X46, X52, X60 |
| | EN 10216-1 | P235T1, P235T2, P275T1 |
| | EN 10217-1 | P275T2, P355N |
| Boiler & pressure vessel steels | EN 10028-2 | P235GH, P265GH, P295GH, P355GH |
| Fine grained steels | EN 10025 part 3 | S275, S355, S420 |
| | EN 10025 part 4 | S275M, S275ML, S355M, S355ML, S420M, S420ML |

PACKAGING AND AVAILABLE SIZES

| Diameter (mm) | 0.8 | 1.0 | 1.2 |
|-----------------------|-----|-----|-----|
| 15 kg spool B300 | X | X | X |
| 250 kg Accutrak® Drum | | | X |

Other sizes and packaging on request

LNM 25: rev. C-EN25-01/02/16

UltraMag®

CLASSIFICATION

| | | | | | |
|----------------|-------------------------------|---------|---|--------|--------|
| AWS A5.18 | ER70S-6 | A-Nr | 1 | Mat-Nr | 1.5125 |
| EN ISO 14341-A | G 46 4 M 3Si1 / G 42 3 C 3Si1 | F-Nr | 6 | | |
| | | 9606 FM | 1 | | |

GENERAL DESCRIPTION

Solid wire for semi-automatic and automatic welding applications
 Good feedability, consistent welding performance
 Very good weldability, stable arc, and low spatter
 High productivity

WELDING POSITIONS (ISO/ASME)



SHIELDING GASES (ACC. ISO 14175)

| | |
|-----|---------------------------------------|
| M21 | Mixed gas Ar+ >15-25% CO ₂ |
| C1 | Active gas 100% CO ₂ |

APPROVALS

| | | | | | | |
|-----|----|-----|----|----|-----|----|
| ABS | BV | DNV | GL | LR | TÜV | CE |
| + | + | + | + | + | + | + |

CHEMICAL COMPOSITION (W%) TYPICAL WIRE

| | | |
|-------|-----|------|
| C | Mn | Si |
| 0.078 | 1.4 | 0.85 |

MECHANICAL PROPERTIES, TYPICAL, ALL WELD METAL

| | Shielding gas | Condition | Yield strength (N/mm ²) | Tensile strength (N/mm ²) | Elongation (%) | Impact ISO-V(J) | |
|----------------|---------------|-----------|--|--|-------------------|-----------------|-------|
| | | | | | | -30°C | -40°C |
| Typical values | M21 | AW | 502 | 574 | 28 | | 102 |
| | C1 | AW | 486 | 570 | 29 | 71 | |

EXAMPLES OF MATERIALS TO BE WELDED

| Steel grades | Standard | Type |
|---------------------------------|-----------------|--|
| General structural steels | EN 10025 | S185, S235, S275, S355 |
| Ship plates | ASTM A131 | Grade A, B, D, AH32 to DH36 |
| Cast steels | EN 10213-2 | GP240R |
| Pipe material | EN 10208-1 | L210, L240, L290, L360 |
| | EN 10208-2 | L240NB, L290NB, L360NB, L360QB, L240MB, L290MB, L360MB, L415MB, L415NB |
| | API 5LX | X42, X46, X52, X60 |
| | EN 10216-1 | P235T1, P235T2, P275T1 |
| | EN 10217-1 | P275T2, P355N |
| Boiler & pressure vessel steels | EN 10028-2 | P235GH, P265GH, P295GH, P355GH |
| Fine grained steels | EN 10025 part 3 | S275, S355, S420 |
| | EN 10025 part 4 | S275M, S275ML, S355M, S355ML, S420M, S420ML, S460 |

PACKAGING AND AVAILABLE SIZES

| Diameter (mm) | 0.8 | 1.0 | 1.2 | 1.6 |
|--------------------------------------|-----|-----|-----|-----|
| 5 kg plastic spool S200 | X | | X | |
| 15 kg spool B300 | | | X | X |
| 15 kg spool B500 | | X | X | X |
| 15 kg spool S300 | | | X | X |
| 250 kg Accutrak® Drum | | X | X | |
| 500 kg Accutrak® Drum | | X | X | X |
| Other sizes and packaging on request | | | | |

Ultramag® .rev. C-EN26-01/02/16

All information in this data sheet is accurate to the best of our knowledge at the time of printing. Please refer to www.lincolnelectric.eu for any updated information.
 Fumes: Safety Data Sheets (SDS) are available on our website.

LINCOLN
ELECTRIC
 THE WELDING EXPERTS®

UltraMag® G4Si1

CLASSIFICATION

| | | | | | |
|----------------|-------------------------------|---------|---|--------|--------|
| AWS A5.18 | ER70S-6 | A-Nr | 1 | Mat-Nr | 1.5130 |
| EN ISO 14341-A | G 46 5 M 4Si1 / G 46 3 C 4Si1 | F-Nr | 6 | | |
| | | 9606 FM | 1 | | |

GENERAL DESCRIPTION

Coppered solid wire for semi-automatic and automatic welding applications
 Good feedability, consistent welding performance
 Very good weldability, stable arc, and low spatter
 High productivity

WELDING POSITIONS (ISO/ASME)



PA/1G



PB/2F



PC/2G



PD/4F



PE/4G



PF/3Gu

SHIELDING GASES (ACC. ISO 14175)

| | |
|-----|---------------------------------------|
| M21 | Mixed gas Ar+ >15-25% CO ₂ |
| C1 | Active gas 100% CO ₂ |

APPROVALS

| | | | | | | |
|-----|----|-----|----|----|----|-----|
| ABS | BV | DNV | GL | LR | CE | TÜV |
| + | + | + | + | + | + | + |

CHEMICAL COMPOSITION (W%) TYPICAL WIRE

| | | |
|------|------|------|
| C | Mn | Si |
| 0.08 | 1.70 | 0.85 |

MECHANICAL PROPERTIES, TYPICAL, ALL WELD METAL

| | Shielding gas | Condition | Yield strength (N/mm ²) | Tensile strength (N/mm ²) | Elongation (%) | Impact ISO-V(J) | |
|----------------|---------------|-----------|--|--|-------------------|-----------------|-------|
| | | | | | | -40°C | -50°C |
| Typical values | M21 | AW | 490 | 590 | 27 | | 90 |
| | C1 | AW | 460 | 560 | 25 | 70 | |

EXAMPLES OF MATERIALS TO BE WELDED

| Steel grades | Standard | Type |
|---------------------------------|-----------------|--|
| General structural steels | EN 10025 | S185, S235, S275, S355 |
| Ship plates | ASTM A131 | Grade A, B, D, AH32 to DH36 |
| Cast steels | EN 10213-2 | GP240R |
| Pipe material | EN 10208-1 | L210, L240, L290, L360 |
| | EN 10208-2 | L240NB, L290NB, L360NB, L360QB, L240MB, L290MB, L360MB, L415MB, L415NB |
| | API 5LX | X42, X46, X52, X60 |
| | EN 10216-1 | P235T1, P235T2, P275T1 |
| | EN 10217-1 | P275T2, P355N |
| Boiler & pressure vessel steels | EN 10028-2 | P235GH, P265GH, P295GH, P355GH |
| Fine grained steels | EN 10025 part 3 | S275, S355, S420, S460 |
| | EN 10025 part 4 | S275M, S275ML, S355M, S355ML, S420M, S420ML, S460, P460, S460ML |

PACKAGING AND AVAILABLE SIZES

| Diameter (mm) | 0.8 | 1.0 | 1.2 | 1.6 |
|-----------------------|-----|-----|-----|-----|
| 15 Kg spool B300 | X | X | X | X |
| 15 Kg spool B5300 | X | X | X | X |
| 15 kg spool S300 | X | X | X | X |
| 250 kg Accutrak® Drum | X | X | X | |
| 500 kg Accutrak® Drum | X | X | X | X |

Ultramag® G4Si1.rev. C-EN26-01/02/16

Other sizes and packaging on request

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 Fumes: Safety Data Sheets (SDS) are available on our website.

SupraMig®

CLASSIFICATION

| | | | | | |
|----------------|-------------------------------|---------|---|--------|--------|
| AWS A5.18 | ER70S-6 | A-Nr | 1 | Mat-Nr | 1.5125 |
| EN ISO 14341-A | G 46 4 M 3Si1 / G 42 3 C 3Si1 | F-Nr | 6 | | |
| | | 9606 FM | 1 | | |

GENERAL DESCRIPTION

Solid wire for welding of structural steels
Excellent feedability and very consistent welding performance
No adjustments of welding parameters
Tight and stable arc with extremely low spatter

Better bead profile and appearance
Ultimate GMAW wire for robotics and hard automation
Also provided in Accutrak®

WELDING POSITIONS (ISO/ASME)



SHIELDING GASES (ACC. ISO 14175)

| | |
|-----|---------------------------------------|
| M21 | Mixed gas Ar+ >15-25% CO ₂ |
| C1 | Active gas 100% CO ₂ |

APPROVALS

| | | | | | | | |
|-----|----|-----|----|----|-----|----|----|
| ABS | BV | DNV | GL | LR | TÜV | DB | CE |
| + | + | + | + | + | + | + | + |

CHEMICAL COMPOSITION (W%) TYPICAL WIRE

| | | |
|------|------|------|
| C | Mn | Si |
| 0.08 | 1.40 | 0.85 |

MECHANICAL PROPERTIES, TYPICAL, ALL WELD METAL

| Typical values | Shielding gas | Condition | Yield strength (N/mm ²) | Tensile strength (N/mm ²) | Elongation (%) | Impact ISO-V(J) | |
|----------------|---------------|-----------|--|--|-------------------|-----------------|-------|
| | | | | | | -30°C | -40°C |
| | M21 | AW | 502 | 574 | 28 | | 102 |
| | C1 | AW | 486 | 570 | 29 | 71 | |

EXAMPLES OF MATERIALS TO BE WELDED

| Steel grades | Standard | Type |
|---------------------------------|-----------------|--|
| General structural steels | EN 10025 | S185, S235, S275, S355 |
| Ship plates | ASTM A131 | Grade A, B, D, AH32 to DH36 |
| Cast steels | EN 10213-2 | GP240R |
| Pipe material | EN 10208-1 | L210, L240, L290, L360 |
| | EN 10208-2 | L240NB, L290NB, L360NB, L360QB, L240MB, L290MB, L360MB, L415MB, L415NB |
| | API 5LX | X42, X46, X52, X60 |
| | EN 10216-1 | P235T1, P235T2, P275T1 |
| | EN 10217-1 | P275T2, P355N |
| Boiler & pressure vessel steels | EN 10028-2 | P235GH, P265GH, P295GH, P355GH |
| Fine grained steels | EN 10025 part 3 | S275, S355, S420 |
| | EN 10025 part 4 | S275M, S275ML, S355M, S355ML, S420M, S420ML, S460 |

PACKAGING AND AVAILABLE SIZES

| Diameter (mm) | 0.8 | 1.0 | 1.2 | 1.6 |
|-----------------------|-----|-----|-----|-----|
| 15 kg spool B300 | X | X | | X |
| 15 kg spool S300 | X | X | X | X |
| 250 kg Accutrak® Drum | X | X | X | X |
| 500 kg Accutrak® Drum | | X | X | X |

Other sizes and packaging on request

All information in this data sheet is accurate to the best of our knowledge at the time of printing. Please refer to www.lincolnelectric.eu for any updated information.
Fumes: Safety Data Sheets (SDS) are available on our website.

Supramig® .rev. C-EN26-01/02/16

LINCOLN
ELECTRIC
THE WELDING EXPERTS®

SupraMig® CF

CLASSIFICATION

| | | | | | |
|----------------|-------------------------------|---------|---|--------|--------|
| AWS A5.18 | ER70S-6 | A-Nr | 1 | Mat-Nr | 1.5125 |
| EN ISO 14341-A | G 46 4 M 3Si1 / G 42 3 C 3Si1 | F-Nr | 6 | | |
| | | 9606 FM | 1 | | |

GENERAL DESCRIPTION

Uncoppered solid wire for welding of structural steels
Excellent feedability and very consistent welding performance
No adjustments of welding parameters
Tight and stable arc with extremely low spatter

Better bead profile and appearance
Ultimate GMAW wire for robotics and hard automation
Also provided in Accutrak®

WELDING POSITIONS (ISO/ASME)



PA/1G



PB/2F



PC/2G



PD/4F



PE/4G



PF/3Gu

SHIELDING GASES (ACC. ISO 14175)

| | |
|-----|---------------------------------------|
| M21 | Mixed gas Ar+ >15-25% CO ₂ |
| C1 | Active gas 100% CO ₂ |

APPROVALS

| | | | | | | | |
|-----|----|-----|----|----|-----|----|----|
| ABS | BV | DNV | GL | LR | TÜV | DB | CE |
| + | + | + | + | + | + | + | + |

CHEMICAL COMPOSITION (W%) TYPICAL WIRE

| | | |
|------|------|------|
| C | Mn | Si |
| 0.08 | 1.40 | 0.85 |

MECHANICAL PROPERTIES, TYPICAL, ALL WELD METAL

| | Shielding gas | Condition | Yield strength | Tensile strength | Elongation | Impact ISO-V(J) | |
|----------------|---------------|-----------|----------------------|----------------------|------------|-----------------|-------|
| | | | (N/mm ²) | (N/mm ²) | (%) | -30°C | -40°C |
| Typical values | M21 | AW | 502 | 574 | 28 | | 102 |
| | C1 | AW | 486 | 570 | 29 | 71 | |

EXAMPLES OF MATERIALS TO BE WELDED

| Steel grades | Standard | Type |
|---------------------------|---------------------------------|--|
| General structural steels | EN 10025 | S185, S235, S275, S355 |
| Ship plates | ASTM A131 | Grade A, B, D, AH32 to DH36 |
| Cast steels | EN 10213-2 | GP240R |
| Pipe material | EN 10208-1 | L210, L240, L290, L360 |
| | EN 10208-2 | L240NB, L290NB, L360NB, L360QB, L240MB, L290MB, L360MB, L415MB, L415NB |
| | API 5LX | X42, X46, X52, X60 |
| | EN 10216-1 | P235T1, P235T2, P275T1 |
| | EN 10217-1 | P275T2, P355N |
| | Boiler & pressure vessel steels | EN 10028-2 |
| Fine grained steels | EN 10025 part 3 | S275, S355, S420 |
| | EN 10025 part 4 | S275M, S275ML, S355M, S355ML, S420M, S420ML, S460 |

PACKAGING AND AVAILABLE SIZES

| Diameter (mm) | 0.8 | 1.0 | 1.2 | 1.6 |
|-----------------------|-----|-----|-----|-----|
| 15 Kg spool B300 | X | X | X | X |
| 15 Kg spool B5300 | | X | X | |
| 15 kg spool S300 | X | X | X | |
| 250 kg Accutrak® Drum | X | X | X | X |
| 500 kg Accutrak® Drum | | X | X | X |

Supramig® CF : rev. C-EN01-01/02/16

SupraMig® HD

CLASSIFICATION

| | | | | | |
|----------------|-------------------------------|---------|---|--------|--------|
| AWS A5.18 | ER70S-6 | A-Nr | 1 | Mat-Nr | 1.5125 |
| EN ISO 14341-A | G 46 4 M 3Si1 / G 42 3 C 3Si1 | F-Nr | 6 | | |
| | | 9606 FM | 1 | | |

GENERAL DESCRIPTION

Solid wire for welding of structural steels
Excellent feedability and very consistent welding performance
Self releasing silicate islands

Tight and stable arc with extremely low spatter
Deep root penetration and improved fatigue life
Ultimate GMAW wire for heavy duty high deposition applications

WELDING POSITIONS (ISO/ASME)



PA/1G



PB/2F



PC/2G



PD/4F



PE/4G



PF/3Gu

SHIELDING GASES (ACC. ISO 14175)

| | |
|-----|---------------------------------------|
| M21 | Mixed gas Ar+ >15-25% CO ₂ |
| C1 | Active gas 100% CO ₂ |

APPROVALS

| | | | | | | | |
|-----|----|-----|----|----|-----|----|----|
| ABS | BV | DNV | GL | LR | TÜV | CE | DB |
| + | + | + | + | + | + | + | + |

CHEMICAL COMPOSITION (W%) TYPICAL WIRE

| | | |
|------|------|------|
| C | Mn | Si |
| 0.08 | 1.40 | 0.85 |

MECHANICAL PROPERTIES, TYPICAL, ALL WELD METAL

| | Shielding gas | Condition | Yield strength | Tensile strength | Elongation | Impact ISO-V(J) | |
|----------------|---------------|-----------|----------------------|----------------------|------------|-----------------|-------|
| | | | (N/mm ²) | (N/mm ²) | (%) | -30°C | -40°C |
| Typical values | M21 | AW | 502 | 574 | 28 | | 102 |
| | C1 | AW | 486 | 570 | 29 | 71 | |

EXAMPLES OF MATERIALS TO BE WELDED

| Steel grades | Standard | Type |
|---------------------------------|-----------------|--|
| General structural steels | EN 10025 | S185, S235, S275, S355 |
| Ship plates | ASTM A131 | Grade A, B, D, AH32 to DH36 |
| Cast steels | EN 10213-2 | GP240R |
| Pipe material | EN 10208-1 | L210, L240, L290, L360 |
| | EN 10208-2 | L240NB, L290NB, L360NB, L360QB, L240MB, L290MB, L360MB, L415MB, L415NB |
| | API 5LX | X42, X46, X52, X60 |
| | EN 10216-1 | P235T1, P235T2, P275T1 |
| | EN 10217-1 | P275T2, P355N |
| Boiler & pressure vessel steels | EN 10028-2 | P235GH, P265GH, P295GH, P355GH |
| Fine grained steels | EN 10025 part 3 | S275, S355, S420 |
| | EN 10025 part 4 | S275M, S275ML, S355M, S355ML, S420M, S420ML, S460 |

PACKAGING AND AVAILABLE SIZES

| Diameter (mm) | 0.8 | 1.0 | 1.2 | 1.6 |
|--------------------------------------|-----|-----|-----|-----|
| 15 Kg spool B300 | X | X | X | X |
| 15 Kg spool B5300 | X | X | X | X |
| 15 kg spool S300 | X | X | X | X |
| 250 kg Accutrak® Drum | X | X | X | |
| 500 kg Accutrak® Drum | X | X | X | X |
| Other sizes and packaging on request | | | | |

Supramig® HD :rev. C-EN04-01/02/16

SupraMig Ultra®

CLASSIFICATION

| | | | | | |
|----------------|-------------------------------|---------|---|--------|--------|
| AWS A5.18 | ER70S-6 | A-Nr | 1 | Mat-Nr | 1.5130 |
| EN ISO 14341-A | G 50 5 M 4Si1 / G 46 3 C 4Si1 | F-Nr | 6 | | |
| | | 9606 FM | 1 | | |

GENERAL DESCRIPTION

Solid wire with increased manganese for semi-automatic welding and robotic applications
 Excellent feedability and very consistent welding performance
 Tight and stable arc with extremely low spatter
 Also provided in Accutrak® drum

WELDING POSITIONS (ISO/ASME)



PA/1G



PB/2F



PC/2G



PD/4F



PE/4G



PF/3Gu

SHIELDING GASES (ACC. ISO 14175)

| | |
|-----|---------------------------------------|
| M21 | Mixed gas Ar+ >15-25% CO ₂ |
| C1 | Active gas 100% CO ₂ |

APPROVALS

| | | | | | | |
|-----|----|-----|----|----|-----|----|
| ABS | BV | DNV | GL | LR | TÜV | CE |
| + | + | + | + | + | + | + |

CHEMICAL COMPOSITION (W%) TYPICAL WIRE

| | | |
|------|------|------|
| C | Mn | Si |
| 0.08 | 1.70 | 0.85 |

MECHANICAL PROPERTIES, TYPICAL, ALL WELD METAL

| | Shielding gas | Condition | Yield strength (N/mm ²) | Tensile strength (N/mm ²) | Elongation (%) | Impact ISO-V(J) | | |
|----------------|---------------|-----------|--|--|-------------------|-----------------|-------|-------|
| | | | | | | -20°C | -40°C | -50°C |
| Typical values | M21 | AW | 500 | 650 | 26 | 80 | 80 | 70 |
| | C1 | AW | 490 | 620 | 30 | 60 | 50 | |

EXAMPLES OF MATERIALS TO BE WELDED

| Steel grades | Standard | Type |
|---------------------------------|-----------------|--|
| General structural steels | EN 10025 | S185, S235, S275, S355 |
| Ship plates | ASTM A131 | Grade A, B, D, AH32 to DH36 |
| Cast steels | EN 10213-2 | GP240R |
| Pipe material | EN 10208-1 | L210, L240, L290, L360 |
| | EN 10208-2 | L240NB, L290NB, L360NB, L360QB, L240MB, L290MB, L360MB, L415MB, L415NB |
| | API 5LX | X42, X46, X52, X60 |
| | EN 10216-1 | P235T1, P235T2, P275T1 |
| | EN 10217-1 | P275T2, P355N |
| Boiler & pressure vessel steels | EN 10028-2 | P235GH, P265GH, P295GH, P355GH |
| Fine grained steels | EN 10025 part 3 | S275, S355, S420, S460 |
| | EN 10025 part 4 | S275M, S275ML, S355M, S355ML, S420M, S420ML, S460, P460, S460ML |

PACKAGING AND AVAILABLE SIZES

| Diameter (mm) | 0.8 | 1.0 |
|-----------------------|-----|-----|
| 15 Kg spool B300 | X | X |
| 15 Kg spool B5300 | | X |
| 15 kg spool S300 | | X |
| 250 kg Accutrak® Drum | X | X |
| 500 kg Accutrak® Drum | | X |

Supramig® Ultra: rev. C-EN26-01/02/16

All information in this data sheet is accurate to the best of our knowledge at the time of printing. Please refer to www.lincolnelectric.eu for any updated information.
 Fumes: Safety Data Sheets (SDS) are available on our website.

SupraMig Ultra® CF

CLASSIFICATION

| | | | | | |
|----------------|-------------------------------|---------|---|--------|--------|
| AWS A5.18 | ER70S-6 | A-Nr | 1 | Mat-Nr | 1.5130 |
| EN ISO 14341-A | G 50 5 M 4Si1 / G 46 3 C 4Si1 | F-Nr | 6 | | |
| | | 9606 FM | 1 | | |

GENERAL DESCRIPTION

Uncoppered solid wire with increased manganese for semi-automatic welding and robotic applications
 Excellent feedability and very consistent welding performance
 Tight and stable arc with extremely low spatter
 Also provided in Accutrak® drum

WELDING POSITIONS (ISO/ASME)



PA/1G



PB/2F



PC/2G



PD/4F



PE/4G



PF/3Gu

SHIELDING GASES (ACC. ISO 14175)

| | |
|-----|---------------------------------------|
| M21 | Mixed gas Ar+ >15-25% CO ₂ |
| C1 | Active gas 100% CO ₂ |

APPROVALS

| ABS | BV | DNV | GL | LR | TÜV | CE |
|-----|----|-----|----|----|-----|----|
| + | + | + | + | + | + | + |

CHEMICAL COMPOSITION (W%) TYPICAL WIRE

| C | Mn | Si |
|------|------|------|
| 0.08 | 1.70 | 0.85 |

MECHANICAL PROPERTIES, TYPICAL, ALL WELD METAL

| | Shielding gas | Condition | Yield strength (N/mm ²) | Tensile strength (N/mm ²) | Elongation (%) | Impact ISO-V(J) | |
|----------------|---------------|-----------|--|--|-------------------|-----------------|-------|
| | | | | | | -20°C | -40°C |
| Typical values | M21 | AW | 500 | 650 | 26 | 80 | 80 |
| | C1 | AW | 490 | 620 | 30 | 60 | 50 |

EXAMPLES OF MATERIALS TO BE WELDED

| Steel grades | Standard | Type |
|---------------------------------|-----------------|--|
| General structural steels | EN 10025 | S185, S235, S275, S355 |
| Ship plates | ASTM A131 | Grade A, B, D, AH32 to DH36 |
| Cast steels | EN 10213-2 | GP240R |
| Pipe material | EN 10208-1 | L210, L240, L290, L360 |
| | EN 10208-2 | L240NB, L290NB, L360NB, L360QB, L240MB, L290MB, L360MB, L415MB, L415NB |
| | API 5LX | X42, X46, X52, X60 |
| | EN 10216-1 | P235T1, P235T2, P275T1 |
| | EN 10217-1 | P275T2, P355N |
| Boiler & pressure vessel steels | EN 10028-2 | P235GH, P265GH, P295GH, P355GH |
| Fine grained steels | EN 10025 part 3 | S275, S355, S420, S460 |
| | EN 10025 part 4 | S275M, S275ML, S355M, S355ML, S420M, S420ML, S460, P460, S460ML |

PACKAGING AND AVAILABLE SIZES

| Diameter (mm) | 0.8 | 1.0 |
|--------------------------------------|-----|-----|
| 15 Kg spool B300 | X | X |
| 15 Kg spool B5300 | | X |
| 15 kg spool S300 | | X |
| 250 kg Accutrak® Drum | X | X |
| 500 kg Accutrak® Drum | | X |
| Other sizes and packaging on request | | |

Supramig® Ultra CF: rev. C-EN01-01/02/16

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 Fumes: Safety Data Sheets (SDS) are available on our website.

SupraMig Ultra[®] HD

CLASSIFICATION

| | | | | | |
|----------------|-------------------------------|---------|---|--------|--------|
| AWS A5.18 | ER70S-6 | A-Nr | 1 | Mat-Nr | 1.5130 |
| EN ISO 14341-A | G 50 5 M 4Si1 / G 46 3 C 4Si1 | F-Nr | 6 | | |
| | | 9606 FM | 1 | | |

GENERAL DESCRIPTION

Solid wire with increased manganese for semi-automatic welding and robotic applications
Excellent feedability and very consistent welding performance
Good weld bead aspect

Tight and stable arc with extremely low spatter
Ultimate GMAW wire for heavy duty high deposition applications

WELDING POSITIONS (ISO/ASME)



PA/1G



PB/2F



PC/2G



PD/4F



PE/4G



PF/3Gu

SHIELDING GASES (ACC. ISO 14175)

| | |
|-----|---------------------------------------|
| M21 | Mixed gas Ar+ >15-25% CO ₂ |
| C1 | Active gas 100% CO ₂ |

APPROVALS

| | | | | | | |
|-----|----|-----|----|----|----|-----|
| ABS | BV | DNV | GL | LR | CE | TÜV |
| + | + | + | + | + | + | + |

CHEMICAL COMPOSITION (W%) TYPICAL WIRE

| | | |
|------|------|------|
| C | Mn | Si |
| 0.08 | 1.70 | 0.85 |

MECHANICAL PROPERTIES, TYPICAL, ALL WELD METAL

| | Shielding gas | Condition | Yield strength | Tensile strength | Elongation | Impact ISO-V(J) | |
|----------------|---------------|-----------|----------------------|----------------------|------------|-----------------|-------|
| | | | (N/mm ²) | (N/mm ²) | (%) | -20°C | -40°C |
| Typical values | M21 | AW | 500 | 650 | 26 | 80 | 80 |
| | C1 | AW | 490 | 620 | 30 | 60 | 50 |

EXAMPLES OF MATERIALS TO BE WELDED

| Steel grades | Standard | Type |
|---------------------------------|-----------------|--|
| General structural steels | EN 10025 | S185, S235, S275, S355 |
| Ship plates | ASTM A131 | Grade A, B, D, AH32 to DH36 |
| | EN 10213-2 | GP240R |
| Pipe material | EN 10208-1 | L210, L240, L290, L360 |
| | EN 10208-2 | L240NB, L290NB, L360NB, L360QB, L240MB, L290MB, L360MB, L415MB, L415NB |
| | API 5LX | X42, X46, X52, X60 |
| | EN 10216-1 | P235T1, P235T2, P275T1 |
| | EN 10217-1 | P275T2, P355N |
| Boiler & pressure vessel steels | EN 10028-2 | P235GH, P265GH, P295GH, P355GH |
| Fine grained steels | EN 10025 part 3 | S275, S355, S420, S460 |
| | EN 10025 part 4 | S275M, S275ML, S355M, S355ML, S420M, S420ML, S460, P460, S460ML |

PACKAGING AND AVAILABLE SIZES

| Diameter (mm) | 1.2 | 1.4 | 1.6 |
|-----------------------------------|-----|-----|-----|
| 15 Kg spool B300 | X | | X |
| 15 Kg spool B5300 | X | | |
| 15 Kg spool S300 | X | X | X |
| 250 kg Accutrak [®] Drum | X | X | X |
| 500 kg Accutrak [®] Drum | X | X | X |

Other sizes and packaging on request

Supramig[®] Ultra HD: rev. C-EN02-01/02/16

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Fumes: Safety Data Sheets (SDS) are available on our website.

LNM 28

CLASSIFICATION

| | | | |
|--------------------------|-----------------|---------|----|
| AWS A5.28 | ER80S-G | A-Nr | 10 |
| EN ISO 16834-A | G Z Mn3 Ni1 Cu* | F-Nr | 6 |
| * Nearest classification | | 9606 FM | 2 |

GENERAL DESCRIPTION

Solid wire special for welding of weather resisting steels
Contains a small percentage of copper to help preventing further oxidation of the weld bead

WELDING POSITIONS (ISO/ASME)



PA/1G



PB/2F



PC/2G



PD/4F



PE/4G



PF/3Gu

SHIELDING GASES (ACC. ISO 14175)

| | |
|-----|---------------------------------------|
| M21 | Mixed gas Ar+ >15-25% CO ₂ |
| C1 | Active gas 100% CO ₂ |

CHEMICAL COMPOSITION (W%) TYPICAL WIRE

| C | Mn | Si | Ni | Cu |
|-----|-----|------|-----|-----|
| 0.1 | 1.4 | 0.75 | 0.8 | 0.3 |

MECHANICAL PROPERTIES, TYPICAL, ALL WELD METAL

| Typical values | Shielding gas | Condition | Yield strength | Tensile strength | Elongation | Impact ISO-V(J) | |
|----------------|---------------|-----------|----------------------|----------------------|------------|-----------------|-------|
| | | | (N/mm ²) | (N/mm ²) | (%) | -20°C | -40°C |
| | M21 | AW | 570 | 620 | 26 | 90 | 70 |

EXAMPLES OF MATERIALS TO BE WELDED

| Steel grades | Standard | Type |
|--------------------------|----------|-----------------|
| Weather resisting steels | EN 10155 | S 235 J 0 W |
| | | S 235 J 2 W |
| | | S 355 J 0 W |
| | | S 355 J 2 W |
| | | S 355 J 2 G 1 W |

PACKAGING AND AVAILABLE SIZES

| Diameter (mm) | 1.0 | 1.2 |
|------------------|-----|-----|
| 15 Kg spool B300 | X | X |

Other sizes and packaging on request

LNM 28: rev. C-EN23-01/02/16

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LINCOLN
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LNM MoNi

CLASSIFICATION

| | | | |
|----------------|--------------------|---------|----|
| AWS A5.28 | ER1005-G | A-Nr | 12 |
| EN ISO 16834-A | G 62 4 M Mn3NiCrMo | F-Nr | 6 |
| | | 9606 FM | 2 |

GENERAL DESCRIPTION

Solid wire for welding high strength steels with a yield up to 620 Mpa
Good impact values at -40 °C

WELDING POSITIONS (ISO/ASME)



PA/1G



PB/2F



PC/2G



PD/4F



PE/4G



PF/3Gu

SHIELDING GASES (ACC. ISO 14175)

M21 Mixed gas Ar+ >15-25% CO₂

GMAW

CHEMICAL COMPOSITION (W%) TYPICAL WIRE

| C | Mn | Si | Ni | Cr | Mo | Cu |
|------|------|------|------|------|------|------|
| 0.10 | 1.65 | 0.75 | 0.55 | 0.60 | 0.30 | 0.08 |

MECHANICAL PROPERTIES, TYPICAL, ALL WELD METAL

| | Shielding gas | Condition | Yield strength (N/mm ²) | Tensile strength (N/mm ²) | Elongation (%) | Impact ISO-V(J) | | |
|----------------|---------------|-----------|--|--|-------------------|-----------------|-------|-------|
| | | | | | | -20°C | -40°C | -60°C |
| Typical values | M21 | AW | 635 | 770 | 19 | 100 | 90 | 70 |

EXAMPLES OF MATERIALS TO BE WELDED

| Steel grades | Standard | Type |
|---------------------|-----------------|--|
| Pipe material | API-5LX | X65, X70, X80 |
| | EN 10208-2 | L480, L550 |
| Fine grained steels | EN 10025 part 6 | S460, S500, S550, S620 S690 |
| | | S620GI1, S600MC, TstE620, Weldox 500, Hardox |

PACKAGING AND AVAILABLE SIZES

| Diameter (mm) | 1.0 | 1.2 |
|------------------|-----|-----|
| 15 Kg spool B300 | X | X |

Other sizes and packaging on request

LNM MoNi rev. C-EN24-01/02/16

LNM MoNiVa

CLASSIFICATION

| | | | |
|----------------|-------------------|---------|----|
| AWS A5.28 | ER110S-G | A-Nr | 12 |
| EN ISO 16834-A | G 69 4 M Mn3NiCrM | F-Nr | 6 |
| | | 9606 FM | 2 |

GENERAL DESCRIPTION

Solid wire for welding high strength steels with yield strength up to 690 N/mm²
Good impact values at -40°C

WELDING POSITIONS (ISO/ASME)



PA/1G



PB/2F



PC/2G



PD/4F



PE/4G



PF/3Gu

SHIELDING GASES (ACC. ISO 14175)

M21 Mixed gas Ar+ >15-25% CO₂

APPROVALS

| | | | |
|-----|----|-----|----|
| ABS | DB | TÜV | CE |
| + | + | + | + |

CHEMICAL COMPOSITION (W%) TYPICAL WIRE

| | | | | | | | |
|------|-----|------|------|------|-----|------|------|
| C | Mn | Si | Ni | Cr | Mo | V | Cu |
| 0.08 | 1.7 | 0.44 | 1.35 | 0.23 | 0.3 | 0.08 | 0.25 |

MECHANICAL PROPERTIES, TYPICAL, ALL WELD METAL

| Typical values | Shielding gas | Condition | Yield strength | Tensile strength | Elongation | Impact ISO-V(J) |
|----------------|---------------|-----------|----------------------|----------------------|------------|-----------------|
| | | | (N/mm ²) | (N/mm ²) | (%) | -40°C |
| | M21 | AW | 710 | 790 | 20 | 70 |

EXAMPLES OF MATERIALS TO BE WELDED

| Steel grades | Standard | Type |
|---------------------|-----------------|--|
| Pipe material | API-5LX | X65, X70, X80 |
| | EN 10208-2 | L480, L550 |
| Fine grained steels | EN 10025 part 6 | S460, S500, S550, S620 S690 |
| | | S620GI1, S600MC, TstE620, Weldox 500, Hardox |

PACKAGING AND AVAILABLE SIZES

| | | | |
|------------------|-----|-----|-----|
| Diameter (mm) | 0.8 | 1.0 | 1.2 |
| 15 Kg spool B300 | X | X | X |

Other sizes and packaging on request

LNM MoNiVa rev. C-ENZ7-21/04/16

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Fumes: Safety Data Sheets (SDS) are available on our website.

LINCOLN
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LNM MoNiCr

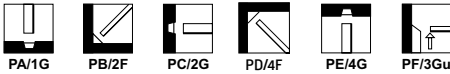
CLASSIFICATION

| | | | |
|----------------|---------------------|---------|----|
| AWS A5.28 | ER1205-G | A-Nr | 12 |
| EN ISO 16834-A | G 89 4 M Mn4Ni2CrMo | F-Nr | 6 |
| | | 9606 FM | 2 |

GENERAL DESCRIPTION

Solid wire for welding high strength steels with yield strength up to 890MPa
 Can be used as well as for welding grade S960 (undermatching)
 Good impact toughness value down to -60°C

WELDING POSITIONS (ISO/ASME)



SHIELDING GASES (ACC. ISO 14175)

M21 Mixed gas Ar+ >15-25% CO₂

GMAW

CHEMICAL COMPOSITION (W%) TYPICAL WIRE

| C | Mn | Si | Ni | Cr | Mo |
|------|-----|------|------|------|------|
| 0.09 | 1.8 | 0.80 | 2.20 | 0.30 | 0.55 |

MECHANICAL PROPERTIES, TYPICAL, ALL WELD METAL

| Typical values | Shielding gas | Condition | Yield strength | Tensile strength | Elongation | Impact ISO-V(J) | |
|----------------|---------------|-----------|----------------------|----------------------|------------|-----------------|-------|
| | | | (N/mm ²) | (N/mm ²) | (%) | -40°C | -60°C |
| | M21 | AW | >890 | 950 | >15 | 70 | >50 |

EXAMPLES OF MATERIALS TO BE WELDED

| Steel grades | Standard | Type |
|---------------------|---|------|
| Fine grained steels | EN 10025 part 6 S960 (undermatching) | S890 |

PACKAGING AND AVAILABLE SIZES

| | |
|--------------------------------------|-----|
| Diameter (mm) | 1.2 |
| 15 Kg spool B300 | X |
| Other sizes and packaging on request | |

LNM MoNiCr: rev. C-EN06-01/02/16

LNМ Ni1

CLASSIFICATION

| | | | |
|----------------|---------------|---------|----|
| AWS A5.28 | ER80S-Ni1 | A-Nr | 10 |
| EN ISO 14341-A | G 46 5 M 3Ni1 | F-Nr | 6 |
| | | 9606 FM | 2 |

GENERAL DESCRIPTION

Solid wire for welding fine grained and low alloy nickel steels

High impact value at low temperature [-60°C]

Typical offshore applications

Stable arc and excellent feedability

WELDING POSITIONS (ISO/ASME)



PA/1G



PB/2F



PC/2G



PD/4F



PE/4G



PF/3Gu

SHIELDING GASES (ACC. ISO 14175)

M21 Mixed gas Ar+ >15-25% CO₂

APPROVALS

| | |
|----|-----|
| DB | TÜV |
| + | + |

CHEMICAL COMPOSITION (W%) TYPICAL WIRE

| | | | |
|------|-----|-----|-----|
| C | Mn | Si | Ni |
| 0.09 | 1.2 | 0.6 | 0.9 |

MECHANICAL PROPERTIES, TYPICAL, ALL WELD METAL

| Typical values | Shielding gas | Condition | Yield strength | Tensile strength | Elongation | Impact ISO-V(J) |
|----------------|---------------|-----------|----------------------|----------------------|------------|-----------------|
| | | | (N/mm ²) | (N/mm ²) | (%) | -60°C |
| | M21 | AW | 480 | 580 | 30 | 60 |

EXAMPLES OF MATERIALS TO BE WELDED

| Steel grades | Standard | Type |
|---------------------------|-------------------|-------------------------|
| General structural steels | EN 10025 | S275, S355 |
| Ship plates | ASTM A131 | ASTM A131 |
| Cast steels | EN 10213-2 | GP240R |
| Pipe material | EN 10208-1 | L290 GA, L360GA |
| | EN 10208-2 | L290, L360, L415 |
| | API 5LX | X42, X46, X52, X60, X65 |
| | EN 10216-1 | P275T1 |
| | EN 10217-1 | P275 T2, P355 N |
| Fine grained steels | EN 10025 part 3/4 | S275, S355, S420, S460 |
| | EN 10028 | P355NL-1, P460NL-1 |

PACKAGING AND AVAILABLE SIZES

| | | |
|--------------------------------------|-----|-----|
| Diameter (mm) | 1.0 | 1.2 |
| 5 kg plastic spool S200 | X | |
| 15 Kg spool B300 | X | X |
| Other sizes and packaging on request | | |

LNМ Ni1 rev. C-EN27-01/02/16

LNM Ni2.5

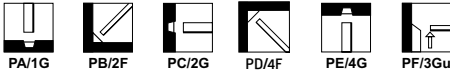
CLASSIFICATION

| | | | |
|----------------|---------------|---------|-----|
| AWS A5.28 | ER80S-Ni2 | A-Nr | 10 |
| EN ISO 14341-A | G 46 6 M 2Ni2 | F-Nr | 6 |
| | | 9606 FM | 1/2 |

GENERAL DESCRIPTION

Solid wire for welding fine grained and low alloy nickel steels
 High impact value at low temperature [-60°C as welded and -90°C after stress relieving 15h/580°C].
 Typical offshore applications

WELDING POSITIONS (ISO/ASME)



SHIELDING GASES (ACC. ISO 14175)

M21 Mixed gas Ar+ >15-25% CO₂

GMAW

APPROVALS

TÜV

+

CHEMICAL COMPOSITION (W%) TYPICAL WIRE

| C | Mn | Si | Ni |
|-----|-----|------|-----|
| 0.1 | 1.1 | 0.55 | 2.4 |

MECHANICAL PROPERTIES, TYPICAL, ALL WELD METAL

| | Shielding gas | Condition | Yield strength (N/mm ²) | Tensile strength (N/mm ²) | Elongation (%) | Impact ISO-V(J) -60°C |
|----------------|---------------|-----------|--|--|-------------------|--------------------------|
| Typical values | M21 | AW | 490 | 580 | 24 | 85 |

EXAMPLES OF MATERIALS TO BE WELDED

| Steel grades | Standard | Type |
|---------------------------|--------------------------|--|
| General structural steels | EN 10025 | S355 |
| Pipe material | API-5LX EN 10208-2 | X52, X56, X60, X65 L360, L415, L445 |
| Fine grained steels | EN 10025 part 3/4 | S355, S420, S460 |
| Low temperature steels | EN 10028-4 EN 10222-3 | 11 MnNi 5-3, 13 MnNi 6-3, 15 NiMn 6 [12 Ni 14 G 1, G 2] 13 MnNi 6-3, 15 NiMn 6 |

PACKAGING AND AVAILABLE SIZES

| Diameter (mm) | 1.0 | 1.2 |
|--------------------------------------|-----|-----|
| 15 Kg spool B300 | X | X |
| Other sizes and packaging on request | | |

LNM Ni2.5; rev. C-EN25-01/02/16

LNM 12

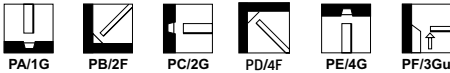
CLASSIFICATION

| | | | | | |
|-----------------------|--------------|----------------|-----|---------------|--------|
| AWS A5.28 | ER70S-A1 | A-Nr | 2 | Mat-Nr | 1.5424 |
| EN ISO 14341-A | G 46 3 M 2Mo | F-Nr | 6 | | |
| | | 9606 FM | 1/3 | | |

GENERAL DESCRIPTION

Solid wire for welding creep resistant 0.5%Mo steels and Fine grained steels for low temperature applications in the as welded condition with service temperatures in range -30°C to +500°C

WELDING POSITIONS (ISO/ASME)



SHIELDING GASES (ACC. ISO 14175)

| | |
|------------|---------------------------------------|
| M21 | Mixed gas Ar+ >15-25% CO ₂ |
| C1 | Active gas 100% CO ₂ |

APPROVALS

TÜV

+

CHEMICAL COMPOSITION (W%) TYPICAL WIRE

| | | | |
|----------|-----------|-----------|-----------|
| C | Mn | Si | Mo |
| 0.1 | 1.12 | 0.6 | 0.5 |

MECHANICAL PROPERTIES, TYPICAL, ALL WELD METAL

| | Shielding gas | Condition | Yield strength [N/mm ²] | Tensile strength [N/mm ²] | Elongation [%] | Impact ISO-V(J) | |
|-----------------------|---------------|-----------|--|--|-------------------|-----------------|-------|
| | | | | | | +20°C | -20°C |
| Typical values | M21 | AW | 503 | 606 | 24 | 130 | 74 |

EXAMPLES OF MATERIALS TO BE WELDED

| Steel grades | Standard | Type |
|-----------------------------------|------------------------|-----------------------------|
| Elevated temperature steel | EN 10028-2 | P295 G H, P355 G H, 16 Mo 2 |
| EN 10222-2 | 17 Mo 3, 14 Mo 6 | |
| Fine grained steels | EN 10025 part 3 | S275, S355, S420, S460 |
| EN 10025 part 4 | S275, S355, S420, S460 | |

APPLICATION ADVICE

Preheating welding joint acc.EN 1011-1
Stress relieving 580-650°C if necessary

PACKAGING AND AVAILABLE SIZES

| Diameter [mm] | 0.8 | 1.0 | 1.2 |
|--------------------------------------|-----|-----|-----|
| 15 Kg spool B300 | X | X | X |
| Other sizes and packaging on request | | | |

LNM 12 rev. C-EN26-01/02/16

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Fumes: Safety Data Sheets (SDS) are available on our website.



LNM 19

CLASSIFICATION

| | | | | | |
|--------------------------|-----------|---------|---|--------|--------|
| AWS A5.28 | ER80S-B2* | A-Nr | 3 | Mat-Nr | 1.7339 |
| ISO 21952-A | G CrMo1Si | F-Nr | 6 | | |
| * Nearest classification | | 9606 FM | 3 | | |

GENERAL DESCRIPTION

Solid wire for welding creep and hydrogen resistant Cr-Mo steels [1,25Cr - 0,5Mo]
Service temperature up to 550°C

WELDING POSITIONS (ISO/ASME)



PA/1G



PB/2F



PC/2G



PD/4F



PE/4G



PF/3Gu

SHIELDING GASES (ACC. ISO 14175)

| | |
|-----|---|
| M21 | Mixed gas Ar+ >15-25% CO ₂ |
| C1 | Active gas 100% CO ₂ Mixed gas |
| M13 | Mixed gas Ar+ >5-25% CO ₂ |

APPROVALS

TÜV

+

CHEMICAL COMPOSITION (W%) TYPICAL WIRE

| C | Mn | Si | Cr | Mo |
|-----|-----|-----|-----|-----|
| 0.1 | 1.0 | 0.5 | 1.2 | 0.5 |

MECHANICAL PROPERTIES, TYPICAL, ALL WELD METAL

| | Shielding gas | Condition | Yield strength (N/mm ²) | Tensile strength (N/mm ²) | Elongation (%) | Impact ISO-V(J) +20°C |
|----------------|---------------|---------------|--|--|-------------------|--------------------------|
| Typical values | M21 | PWHT 700°C/1h | 530 | 635 | 23 | 160 |

EXAMPLES OF MATERIALS TO BE WELDED

| Steel grades | Standard | Type |
|----------------------------|-------------|------------|
| Elevated temperature steel | EN 10028-2 | 13 CrMo4-5 |
| EN 10083-1 | 25 CrMo 4 | |
| EN 10222-2 | 14 CrMo 4-5 | |
| Tool steel | DIN 17210 | 16 MnCr 5 |

APPLICATION ADVICE

Preheating welding joint acc. EN 1011-1, 200-250°C
Post weld heat treatment at 660-700°C

PACKAGING AND AVAILABLE SIZES

| Diameter (mm) | 1.0 | 1.2 |
|------------------|-----|-----|
| 15 Kg spool B300 | X | X |

Other sizes and packaging on request

LNM 19 rev. C-EN26-01/02/16

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LNM 20

CLASSIFICATION

| | | | | | |
|--------------------------|-----------|---------|---|--------|--------|
| AWS A5.28 | ER90S-B3* | A-Nr | 4 | Mat-Nr | 1.7384 |
| ISO 21952-A | G CrMo2Si | F-Nr | 6 | | |
| * Nearest classification | | 9606 FM | 3 | | |

GENERAL DESCRIPTION

Solid wire for welding creep and hydrogen resistant Cr-Mo steels (2,25Cr - 1Mo)
Service temperature up to 600°C

WELDING POSITIONS (ISO/ASME)



PA/1G



PB/2F



PC/2G



PD/4F



PE/4G



PF/3Gu

SHIELDING GASES (ACC. ISO 14175)

| | |
|-----|---------------------------------------|
| M21 | Mixed gas Ar+ >15-25% CO ₂ |
| C1 | Active gas 100% CO ₂ |
| M13 | Mixed gas Ar+ >0-3% CO ₂ |

CHEMICAL COMPOSITION (W%) TYPICAL WIRE

| C | Mn | Si | Cr | Mo |
|------|-----|-----|-----|-----|
| 0.08 | 0.9 | 0.6 | 2.5 | 1.0 |

MECHANICAL PROPERTIES, TYPICAL, ALL WELD METAL

| | Shielding gas | Condition | Yield strength (N/mm ²) | Tensile strength (N/mm ²) | Elongation (%) | Impact ISO-V(J) +20°C |
|----------------|---------------|---------------|--|--|-------------------|--------------------------|
| Typical values | M21 | PWHT 690°C/1h | 560 | 680 | 20 | 100 |

EXAMPLES OF MATERIALS TO BE WELDED

| Steel grades | Standard | Type |
|-------------------------------------|---------------------|-------------|
| Creep and hydrogen resistant steels | EN 10028-2 | 10CrMo 9-10 |
| EN 10222-2 | 12CrMo 9-10Inm 304l | |

APPLICATION ADVICE

Preheating welding joint acc. EN 1011-1, 200-250°C
Post weld heat treatment at 690-740°C

PACKAGING AND AVAILABLE SIZES

| Diameter (mm) | 1.0 | 1.2 |
|--------------------------------------|-----|-----|
| 15 Kg spool B300 | X | X |
| Other sizes and packaging on request | | |

LNM 20 rev. C-EN26-01/02/16

LNM 304LSi

CLASSIFICATION

| | | | | | |
|-------------|-------------|---------|---|--------|--------|
| AWS A5.9 | ER308LSi | A-Nr | 8 | Mat-Nr | 1.4316 |
| ISO 14343-A | G 19 9 L Si | F-Nr | 6 | | |
| | | 9606 FM | 5 | | |

GENERAL DESCRIPTION

Solid wire with extra low carbon for welding austenitic CrNi-steels
With increased silicon for improved wettability

WELDING POSITIONS (ISO/ASME)



PA/1G



PB/2F



PC/2G



PD/4F



PE/4G



PF/3Gu

SHIELDING GASES (ACC. ISO 14175)

| | |
|-----|--------------------------------------|
| M12 | Mixed gas Ar+ 0.5-5% CO ₂ |
| M13 | Mixed gas Ar+ 0.5-3% O ₂ |

APPROVALS

| | | | | | |
|-----|----|-----|----|----|-----|
| ABS | BV | DNV | GL | LR | TÜV |
| + | + | + | + | + | + |

CHEMICAL COMPOSITION (W%) TYPICAL WIRE

| | | | | | |
|------|-----|-----|----|----|-----|
| C | Mn | Si | Cr | Ni | Mo |
| 0.02 | 1.9 | 0.8 | 20 | 10 | 0.1 |

MECHANICAL PROPERTIES, TYPICAL, ALL WELD METAL

| Typical values | Shielding gas | Condition | 0.2% proof strength | Tensile strength | Elongation | Impact ISO-V(J) | |
|----------------|---------------|-----------|----------------------|----------------------|------------|-----------------|--------|
| | | | [N/mm ²] | [N/mm ²] | (%) | -20°C | -196°C |
| | M12 | AW | 394 | 568 | 40 | 85 | 41 |

EXAMPLES OF MATERIALS TO BE WELDED

| Steel grades | EN 10088-1/-2 | EN 10213-4 | Mat. Nr | ASTM/AISI A240/A312/A351 | UNS |
|------------------------------|---------------|------------------|------------------|-----------------------------|------------------|
| Extra low carbon [C < 0.03%] | X2CrNi19-11 | | 1.4306 | (TP)304 L CF-3 | S30403 J92500 |
| | X2CrNiN18-10 | | 1.4311 | (TP)304LN 302, 304 | S30453 S30400 |
| Medium carbon [C > 0.03%] | X4CrNi18-10 | | 1.4301 1.4308 | (TP)304 CF-8 | S30409 J92600 |
| | | GX5CrNi19 10 | | | |
| Ti-,Nb stabilized | X6CrNiTi18-10 | | 1.4541 | (TP)321 (TP)321H | S32100 S32109 |
| | X6CrNiNb18-10 | | 1.4550 1.4552 | (TP)347 CF-8C | S34700 J92710 |
| | | GX5 CrNiNb 19 10 | | | |

PACKAGING AND AVAILABLE SIZES

| Diameter (mm) | 0.8 | 1.0 | 1.2 |
|-------------------------|-----|-----|-----|
| 5 kg plastic spool S200 | X | X | X |
| 15 kg spool B5300 | X | X | X |
| 250 kg Accutrak® Drum | | | X |

LNM 304LSi rev. C-EN24-01/02/16

Other sizes and packaging on request

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Fumes: Safety Data Sheets (SDS) are available on our website.

LNM 304L

CLASSIFICATION

| | | | | | |
|-------------|----------|---------|---|--------|--------|
| AWS A5.9 | ER308L | A-Nr | 8 | Mat-Nr | 1.4316 |
| ISO 14343-A | G 19 9 L | F-Nr | 6 | | |
| | | 9606 FM | 5 | | |

GENERAL DESCRIPTION

Solid wire with extra low carbon for welding austenitic CrNi-steels
High resistance to intergranular corrosion and oxidizing environments

WELDING POSITIONS (ISO/ASME)



PA/1G



PB/2F



PC/2G



PD/4F



PE/4G



PF/3Gu

SHIELDING GASES (ACC. ISO 14175)

| | |
|-----|--------------------------------------|
| M12 | Mixed gas Ar+ 0.5-5% CO ₂ |
| M13 | Mixed gas Ar+ 0.5-3% O ₂ |

CHEMICAL COMPOSITION (W%) TYPICAL WIRE

| C | Mn | Si | Cr | Ni | Mo |
|------|-----|-----|----|----|-----|
| 0.01 | 1.6 | 0.4 | 20 | 10 | 0.3 |

MECHANICAL PROPERTIES, TYPICAL, ALL WELD METAL

| | Shielding gas | Condition | 0.2% proof strength | Tensile strength | Elongation | Impact ISO-V(J) | |
|----------------|---------------|-----------|----------------------|----------------------|------------|-----------------|--------|
| | | | (N/mm ²) | (N/mm ²) | (%) | +20°C | -196°C |
| Typical values | M12 | AW | 390 | 590 | 35 | 120 | 50 |

EXAMPLES OF MATERIALS TO BE WELDED

| Steel grades | EN 10088-1/-2 | EN 10213-4 | Mat. Nr | ASTM/ACI A240/A312/A351 | UNS |
|--|---------------|------------------|---------|-------------------------------|----------------------------|
| Extra low carbon [C < 0.03%] | | | | | |
| | X2CrNi19-11 | | 1.4306 | (TP)304 L | S30403 |
| | X2CrNi18-10 | | 1.4311 | CF-3 (TP)304LN 302, 304 | J92500 S30453 S30400 |
| Medium carbon [C > 0.03%] | | | | | |
| | X4CrNi18-10 | | 1.4301 | (TP)304 | S30409 |
| | | GX5CrNi19 10 | 1.4308 | CF-8 | J92600 |
| Ti-,Nb stabilized | | | | | |
| | X6CrNiTi18-10 | | 1.4541 | (TP)321 (TP)321H | S32100 S32109 |
| | X6CrNiNb18-10 | | 1.4550 | (TP)347 | S34700 |
| | | GX5 CrNiNb 19 10 | 1.4552 | CF-8C | J92710 |

PACKAGING AND AVAILABLE SIZES

| Diameter (mm) | 1.0 | 1.2 |
|--------------------------------------|-----|-----|
| 15 kg spool BS300 | X | X |
| Other sizes and packaging on request | | |

LNM 304L: rev. C-EN24-01/02/16

LNM 347Si

CLASSIFICATION

| | | | | | |
|-------------|-------------|---------|---|--------|--------|
| AWS A5.9 | ER347Si | A-Nr | 8 | Mat-Nr | 1.4551 |
| ISO 14343-A | G 19 9 NbSi | F-Nr | 6 | | |
| | | 9606 FM | 5 | | |

GENERAL DESCRIPTION

Solid wire for welding Ti or Nb stabilized stainless CrNi-steels
High resistance to intergranular corrosion and oxidizing environments

WELDING POSITIONS (ISO/ASME)



SHIELDING GASES (ACC. ISO 14175)

| | |
|-----|--------------------------------------|
| M12 | Mixed gas Ar+ 0.5-5% CO ₂ |
| M13 | Mixed gas Ar+ 0.5-3% O ₂ |

APPROVALS

| | |
|-----|----|
| TÜV | DB |
| + | + |

CHEMICAL COMPOSITION (W%) TYPICAL WIRE

| C | Mn | Si | Cr | Ni | Mo | Nb |
|------|-----|-----|------|-----|-----|-----|
| 0.05 | 1.4 | 0.7 | 19.2 | 9.9 | 0.1 | 0.6 |

MECHANICAL PROPERTIES, TYPICAL, ALL WELD METAL

| Typical values | Shielding gas | Condition | 0.2% proof strength (N/mm ²) | Tensile strength (N/mm ²) | Elongation (%) | Impact ISO-V(U) | |
|----------------|---------------|-----------|---|--|-------------------|-----------------|--------|
| | | | | | | +20°C | -196°C |
| | M12 | AW | 460 | 650 | 35 | 100 | 40 |

EXAMPLES OF MATERIALS TO BE WELDED

| Steel grades | EN 10088-1/-2 | EN 10213-4 | Mat. Nr | ASTM/ACI A240/A312/A351 | UNS |
|--------------------------|---------------|------------------|---------|----------------------------|------------------|
| Ti-,Nb stabilized | | | | | |
| | X6CrNiTi18-10 | | 1.4541 | (TP)321 (TP)321H | S32100 S32109 |
| | X6CrNiNb18-10 | | 1.4550 | (TP)347 (TP)347h | S34700 S34709 |
| | | GX5 CrNiNb 19-10 | 1.4552 | CF-8C | J92710 |
| Non stabilized | | | | | |
| | X4CrNi18-10 | | 1.4301 | 302 (TP)304 | S30400 |
| | X2CrNi19-11 | | 1.4306 | (TP)304L | S30403 |
| | | GX5 CrNi 19-10 | 1.4308 | CF-8 | J92600 |
| | | | 1.4312 | (TP)304H | S30409 |

PACKAGING AND AVAILABLE SIZES

| Diameter (mm) | 0.8 | 1.0 | 1.2 |
|-------------------|-----|-----|-----|
| 15 kg spool BS300 | X | X | X |

Other sizes and packaging on request

LNM 347Si:rev. C-EN23-01/02/16

LNM 316LSi

CLASSIFICATION

| | | | | | |
|-------------|---------------|---------|---|--------|--------|
| AWS A5.9 | ER316LSi | A-Nr | 8 | Mat-Nr | 1.4430 |
| ISO 14343-A | G 19 12 3 LSi | F-Nr | 6 | | |
| | | 9606 FM | 5 | | |

GENERAL DESCRIPTION

Solid wire with extra low carbon for welding stainless CrNiMo-steels
See also LNM 316L, high silicon for improved wettability

WELDING POSITIONS (ISO/ASME)



PA/1G

PB/2F

PC/2G

PD/4F

PE/4G

PF/3Gu

SHIELDING GASES (ACC. ISO 14175)

| | |
|-----|--------------------------------------|
| M12 | Mixed gas Ar+ 0.5-5% CO ₂ |
| M13 | Mixed gas Ar+ 0.5-3% O ₂ |

APPROVALS

| | | | | | |
|-----|----|-----|----|----|-----|
| ABS | BV | DNV | GL | LR | TÜV |
| + | + | + | + | + | + |

CHEMICAL COMPOSITION (W%) TYPICAL WIRE

| | | | | | |
|------|-----|-----|------|------|-----|
| C | Mn | Si | Cr | Ni | Mo |
| 0.01 | 1.8 | 0.8 | 18.5 | 12.2 | 2.5 |

MECHANICAL PROPERTIES, TYPICAL, ALL WELD METAL

| | Shielding gas | Condition | 0.2% proof strength | Tensile strength | Elongation | Impact ISO-V(U) | | |
|----------------|---------------|-----------|----------------------|----------------------|------------|-----------------|--------|--------|
| | | | [N/mm ²] | [N/mm ²] | [%] | +20°C | -120°C | -196°C |
| Typical values | M12 | AW | 452 | 580 | 30 | 150 | 70 | 44 |

EXAMPLES OF MATERIALS TO BE WELDED

| Steel grades | EN 10088-1/-2 | EN 10213-4 | Mat. Nr | ASTM/ACI A240/A312/A351 | UNS |
|--|-------------------|------------------|---------|----------------------------|------------------|
| Extra low carbon [C < 0.03%] | | | | | |
| | X2CrNiMo17-12-2 | | 1.4404 | (TP)316L CF-3M | S31603 J92800 |
| | X2CrNiMo18-14-3 | | 1.4435 | (TP)316L | S31603 |
| | X2CrNiMoN17-Ti-2 | | 1.4406 | (TP)316LN | S31653 |
| | X2CrNiMoN17-13-3 | | 1.4429 | | |
| Medium carbon [C > 0.03%] | | | | | |
| | X4CrNiMo17-12-2 | | 1.4401 | (TP)316 | S31600 |
| | X4CrNiMo17-13-3 | | 1.4436 | | |
| | GX5CrNiMo19-11 | | 1.4408 | CF 8M | J92900 |
| Ti-,Nb stabilized | | | | | |
| | X6CrNiMoTi17-12-2 | | 1.4571 | 316 Ti | S31635 |
| | X6CrNiMoNb17-12-2 | | 1.4580 | 316 Cb | S31640 |
| | X6CrNiNb18-10 | | 1.4550 | (TP)347 | S34700 |
| | | GX5 CrNiNb 19-10 | 1.4552 | CF-8C | J92710 |

PACKAGING AND AVAILABLE SIZES

| Diameter (mm) | 0.8 | 1.0 | 1.2 | Other sizes and packaging on request |
|-------------------------|-----|-----|-----|--------------------------------------|
| 5 kg plastic spool S200 | X | X | | |
| 15 kg spool BS300 | X | X | X | |

LNM 316LSi rev. C-EN24-01/02/16

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LNM 318Si

CLASSIFICATION

| | | | | | |
|--------------------------|----------------|----------------|---|---------------|--------|
| AWS A5.9 | ER318* | A-Nr | 8 | Mat-Nr | 1.4576 |
| ISO 14343-A | G 19 12 3 NbSi | F-Nr | 6 | | |
| * Nearest classification | | 9606 FM | 5 | | |

GENERAL DESCRIPTION

Solid wire for welding Ti or Nb stabilized stainless CrNiMo-steels
High resistance to intergranular corrosion and general corrosion conditions

WELDING POSITIONS (ISO/ASME)



PA/1G

PB/2F

PC/2G

PD/4F

PE/4G

PF/3Gu

SHIELDING GASES (ACC. ISO 14175)

| | |
|------------|--------------------------------------|
| M12 | Mixed gas Ar+ 0.5-5% CO ₂ |
| M13 | Mixed gas Ar+ 0.5-3% O ₂ |

APPROVALS

TÜV

+

CHEMICAL COMPOSITION (W%) TYPICAL WIRE

| C | Mn | Si | Cr | Ni | Mo | Nb |
|------|-----|-----|------|------|-----|-----|
| 0.05 | 1.4 | 0.7 | 18.6 | 11.7 | 2.5 | 0.7 |

MECHANICAL PROPERTIES, TYPICAL, ALL WELD METAL

| | Shielding gas | Condition | 0.2% proof strength [N/mm ²] | Tensile strength [N/mm ²] | Elongation [%] | Impact ISO-V(J) +20°C |
|----------------|---------------|-----------|--|---------------------------------------|----------------|-----------------------|
| Typical values | M12 | AW | 410 | 630 | 35 | 100 |

EXAMPLES OF MATERIALS TO BE WELDED

| Steel grades | EN 10088-1/-2 | EN 10213-4 | Mat. Nr | ASTM/ACI A240/A312/A351 | UNS |
|--|-------------------|------------------|---------|-------------------------|------------------|
| Extra low carbon [C < 0.03%] | | | | | |
| | X2CrNiMo17-12-2 | | 1.4404 | (TP)316L CF-3M | S31603 J92800 |
| | X2CrNiMo18-14-3 | | 1.4435 | (TP)316L | S31603 |
| | X2CrNiMoN17-11-2 | | 1.4406 | (TP)316LN | S31653 |
| | X2CrNiMoN17-13-3 | | 1.4429 | | |
| Medium carbon [C > 0.03%] | | | | | |
| | X4CrNiMo17-12-2 | | 1.4401 | (TP)316 | S31600 |
| | X4CrNiMo17-13-3 | | 1.4436 | | |
| | | G-X5CrNiMo19-11 | 1.4408 | CF 8M | J92900 |
| Ti-,Nb stabilized | | | | | |
| | X6CrNiMoTi17-12-2 | | 1.4571 | 316Ti | S31635 |
| | X6CrNiMoNb17-12-2 | | 1.4580 | 316Cb | S31640 |
| | X6CrNiNb18-10 | | 1.4550 | (TP)347 | S34700 |
| | | G-X5CrNiNb 19-10 | 1.4552 | CF-8C | J92710 |

PACKAGING AND AVAILABLE SIZES

| Diameter [mm] | 1.0 | 1.2 |
|-------------------|-----|-----|
| 15 kg spool BS300 | X | X |

Other sizes and packaging on request

LNM 318Si rev. C-EN23-01/02/16

LNМ 4439Mn

CLASSIFICATION

| | | | | | |
|--------------------------|----------------|---------|----|--------|--------|
| ISO 14343-A | G 18 16 5 N L* | A-Nr | 9* | Mat-Nr | 1.4453 |
| | | F-Nr | 6* | | |
| * Nearest classification | | 9606 FM | 5 | | |

GENERAL DESCRIPTION

Solid wire for welding AISI 317L, 317LN or equivalent stainless steels
 For welding 316L if increased molybdenum content is important
 High resistance to pitting, intergranular and stress corrosion
 Fully austenitic weld metal

WELDING POSITIONS (ISO/ASME)



PA/1G



PB/2F



PC/2G



PD/4F



PE/4G



PF/3Gu

SHIELDING GASES (ACC. ISO 14175)

| | |
|-----|--------------------------------------|
| M12 | Mixed gas Ar+ 0.5-5% CO ₂ |
| M13 | Mixed gas Ar+ 0.5-3% O ₂ |

CHEMICAL COMPOSITION (W%) TYPICAL WIRE

| C | Mn | Si | Cr | Ni | Mo | N |
|------|-----|-----|----|----|-----|------|
| 0.01 | 5.2 | 0.4 | 19 | 17 | 4.0 | 0.15 |

MECHANICAL PROPERTIES, TYPICAL, ALL WELD METAL

| Typical values | Shielding gas | Condition | 0.2% proof strength | Tensile strength | Elongation [%] | Impact ISO-V(J) | |
|----------------|---------------|-----------|---------------------|----------------------|----------------|----------------------|-------|
| | M12 | | AW | [N/mm ²] | | [N/mm ²] | +20°C |
| | | | 400 | 600 | 30 | 70 | 32 |

EXAMPLES OF MATERIALS TO BE WELDED

| Steel grades | EN 10088-1/-2 | EN 10213-4 | Mat. Nr | ASTM/AISI | UNS |
|---|--------------------|-------------------|---------|-----------|--------|
| Fully austenitic CrNiMo corrosion resistant steels | | | | | |
| | X2CrNiMoN17-11-2 | | 1.4406 | (TP)316LN | S31653 |
| | X2CrNiMoN17-13-3 | | 1.4429 | (TP)316LN | S31653 |
| | X2CrNiMo18-14-3 | | 1.4435 | (TP)316L | S31603 |
| | X2CrNiMo18-15-4 | | 1.4438 | 317L | S31725 |
| | X2CrNiMoN17-13-5 | | 1.4439 | 317LN | S31726 |
| | G-X2CrNiMoN17-13-4 | G-X2CrNiMo17-13-4 | 1.4446 | | |
| | G-X6CrNiMo17-13 | G-X6CrNiMo17-13 | 1.4448 | | |

PACKAGING AND AVAILABLE SIZES

| | |
|-------------------|-----|
| Diameter (mm) | 1.2 |
| 15 kg spool BS300 | X |

Other sizes and packaging on request

LNМ 4439Mn; rev. C-EN24-01/02/16

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LNM 4455

CLASSIFICATION

| | | | | | |
|--------------------|----------------|----------------|----|---------------|--------|
| AWS A5.9 | ER316LMn | A-Nr | 9* | Mat-Nr | 1.4455 |
| ISO 14343-A | G 20 16 3 Mn L | F-Nr | 6* | | |
| | | 9606 FM | 5 | | |

GENERAL DESCRIPTION

Solid wire for welding fully austenitic CrNiMnMo stainless steels and low temperature steels
Not susceptible for hot cracking

WELDING POSITIONS (ISO/ASME)



PA/1G



PB/2F



PC/2G



PD/4F



PE/4G



PF/3Gu

SHIELDING GASES (ACC. ISO 14175)

| | |
|------------|--------------------------------------|
| M12 | Mixed gas Ar+ 0.5-5% CO ₂ |
| M13 | Mixed gas Ar+ 0.5-3% O ₂ |

APPROVALS

TÜV

+

CHEMICAL COMPOSITION (W%) TYPICAL WIRE

| C | Mn | Si | Cr | Ni | Mo | N |
|-------|----|-----|----|----|-----|------|
| 0.015 | 7 | 0.4 | 20 | 16 | 3.0 | 0.15 |

MECHANICAL PROPERTIES, TYPICAL, ALL WELD METAL

| | Shielding gas | Condition | 0.2% proof strength [N/mm ²] | Tensile strength [N/mm ²] | Elongation [%] | Impact ISO-V[J] -196°C |
|----------------|---------------|-----------|--|---------------------------------------|----------------|------------------------|
| Typical values | M12 | AW | 400 | 600 | 30 | 50 |

EXAMPLES OF MATERIALS TO BE WELDED

| Steel grades | EN 10088-1/-2 | EN 10213-4 | Mat. Nr | ASTM/ACI | UNS |
|---|---------------|------------------|---------|-----------|--------|
| N-alloyed stainless CrNi- and CrNiMo steels | EN 10088-1/-2 | X2CrNi18-10 | 1.4311 | (TP)304LN | S30453 |
| | | X2CrNiMoN17-11-2 | 1.4406 | (TP)316LN | S31653 |
| | | X2CrNiMoN17-13-3 | 1.4429 | | |
| | | X2CrNiMoN17-13-5 | 1.4439 | 317LN | S31726 |
| Austenitic anti-magnetic steels | SEW 390 | X2CrNiMoN22-15 | 1.3951 | | |
| | | X2CrNiMoN18-14-3 | 1.3952 | | |
| | | X2CrNiMo18-15 | 1.3953 | | |
| | | X8CrMnNi18-8 | 1.3965 | | |
| Low temperature steels | SEW 685 | G-X6CrNi18-10 | 1.6902 | | |
| | | G-X5CrNiN18-10 | 1.6905 | | |
| | EN 10028-4 | 12 Ni 14 | 1.5637 | | |
| | | X12Ni5 | 1.5680 | | |

PACKAGING AND AVAILABLE SIZES

| Diameter [mm] | 1.0 | 1.2 |
|-------------------|-----|-----|
| 15 kg spool BS300 | X | X |

Other sizes and packaging on request

LNM 4455: rev. C-EN22-01/02/16

LNM 4362

CLASSIFICATION

| | | | | |
|-----------------------|----------------|----|---------------|--------|
| No EN or AWS standard | A-Nr | 9* | Mat-Nr | 1.4362 |
| | F-Nr | 6* | | |
| | 9606 FM | 5 | | |

GENERAL DESCRIPTION

Solid wire for welding Lean Duplex stainless steels
Corrosion resistance is equal to 316L in most applications

WELDING POSITIONS (ISO/ASME)



PA/1G



PB/2F



PC/2G



PD/4F



PE/4G



PF/3Gu

SHIELDING GASES (ACC. ISO 14175)

| | |
|------------|--------------------------------------|
| M12 | Mixed gas Ar+ 0.5-5% CO ₂ |
| M13 | Mixed gas Ar+ 0.5-3% O ₂ |

CHEMICAL COMPOSITION [W%] TYPICAL WIRE

| C | Mn | Si | Cr | Ni | Mo | N |
|------|-----|-----|----|----|-----|------|
| 0.01 | 1.4 | 0.6 | 23 | 7 | 0.3 | 0.14 |

MECHANICAL PROPERTIES, TYPICAL, ALL WELD METAL

| | Shielding gas | Condition | 0.2% proof strength [N/mm ²] | Tensile strength [N/mm ²] | Elongation [%] | Impact ISO-V(J) | |
|----------------|---------------|-----------|---|--|-------------------|-----------------|-------|
| | | | | | | +20°C | -20°C |
| Typical values | M12 | AW | 525 | 710 | 25 | 170 | 150 |

EXAMPLES OF MATERIALS TO BE WELDED

| Steel grades | EN 10088-1/-2 | Mat. Nr | UNS |
|-------------------------|-----------------|---------|--------|
| Duplex stainless steels | X2CrNiMoN21-5-1 | 1.4162 | S32101 |
| | X2CrNiN23-4 | 1.4362 | S32304 |

PACKAGING AND AVAILABLE SIZES

| | |
|-------------------|-----|
| Diameter (mm) | 1.2 |
| 15 kg spool BS300 | X |

Other sizes and packaging on request

LNM 4362 - rev. C-EN05-01/02/16

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LINCOLN
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LNM 4462

CLASSIFICATION

| | | | | | |
|--------------------|-------------|----------------|---|---------------|--------|
| AWS A5.9 | ER2209 | A-Nr | 8 | Mat-Nr | 1.4462 |
| ISO 14343-A | G 22 93 N L | F-Nr | 6 | | |
| | | 9606 FM | 5 | | |

GENERAL DESCRIPTION

Solid wire for welding duplex stainless steels
High resistance to general corrosion, pitting and stress corrosion conditions

WELDING POSITIONS (ISO/ASME)



PA/1G

PB/2F

PC/2G

PD/4F

PE/4G

PF/3Gu

SHIELDING GASES (ACC. ISO 14175)

| | |
|------------|--------------------------------------|
| M12 | Mixed gas Ar+ 0.5-5% CO ₂ |
| M13 | Mixed gas Ar+ 0.5-3% O ₂ |

APPROVALS

| | | |
|-----------|-----------|------------|
| BV | GL | TÜV |
| 2209 | 44625 | + |

CHEMICAL COMPOSITION (W%) TYPICAL WIRE

| | | | | | | |
|----------|-----------|-----------|-----------|-----------|-----------|----------|
| C | Mn | Si | Cr | Ni | Mo | N |
| 0.01 | 1.3 | 0.5 | 23 | 8.5 | 3.0 | 0.15 |

MECHANICAL PROPERTIES, TYPICAL, ALL WELD METAL

| | Shielding gas | Condition | 0.2% proof strength | Tensile strength | Elongation | Impact ISO-V(J) | |
|----------------|---------------|-----------|----------------------|----------------------|------------|-----------------|-------|
| | | | (N/mm ²) | (N/mm ²) | (%) | +20°C | -46°C |
| Typical values | M12 | AW | 621 | 803 | 29 | 110 | 40 |

EXAMPLES OF MATERIALS TO BE WELDED

| Steel grades | EN 10088-1/-2 | Mat. Nr | UNS |
|--------------------------------|-----------------|---------|--------|
| Duplex stainless steels | | | |
| | X2CrNiMoN22-5-3 | 1.4462 | S31803 |
| | | 1.4417 | S31500 |
| | X2CrNiN23-4 | 1.4362 | S32304 |
| | X3CrNiMoN27-5-2 | 1.4460 | S31200 |
| | X2CrNiMoN21-5-1 | 1.4162 | S32101 |

Dissimilar joints such as un- and low alloy steel to duplex stainless steel

PACKAGING AND AVAILABLE SIZES

| Diameter (mm) | 0.8 | 0.9 | 1.2 | 1.6 |
|--------------------------|-----|-----|-----|-----|
| 15 kg spool BS300 | X | X | X | X |

Other sizes and packaging on request

LNM 4462: rev. C-EN25-12/05/16

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LNM 4500

CLASSIFICATION

| | | | | | |
|-------------|----------------|---------|---|--------|--------|
| AWS A5.9 | ER385 | A-Nr | 9 | Mat-Nr | 1.4519 |
| ISO 14343-A | G 20 25 5 Cu L | F-Nr | 6 | | |
| | | 9606 FM | 5 | | |

GENERAL DESCRIPTION

Solid wire for welding of fully austenitic steels of type 20%Cr / 25%Ni / 4.5%Mo / 1.5%Cu
Highly corrosion resistant in sulphuric and phosphoric acid

WELDING POSITIONS (ISO/ASME)



PA/1G



PB/2F



PC/2G



PD/4F



PE/4G



PF/3Gu

SHIELDING GASES (ACC. ISO 14175)

| | |
|-----|--------------------------------------|
| M12 | Mixed gas Ar+ 0.5-5% CO ₂ |
| M13 | Mixed gas Ar+ 0.5-3% O ₂ |

APPROVALS

TÜV

+

CHEMICAL COMPOSITION (W%) TYPICAL WIRE

| C | Mn | Si | Cr | Ni | Mo | Cu |
|------|-----|-----|----|----|-----|-----|
| 0.01 | 1.7 | 0.3 | 20 | 25 | 4.4 | 1.5 |

MECHANICAL PROPERTIES, TYPICAL, ALL WELD METAL

| | Shielding gas | Condition | 0.2% proof strength [N/mm ²] | Tensile strength [N/mm ²] | Elongation [%] | Impact ISO-V[J] +20°C |
|----------------|---------------|-----------|---|--|-------------------|--------------------------|
| Typical values | M12 | AW | 350 | 610 | 35 | 100 |

EXAMPLES OF MATERIALS TO BE WELDED

| Steel grades | EN 10088-1/-2 | EN 10213-4 | Mat. Nr |
|---|--------------------|---------------------|---------|
| Fully austenitic NiCrMoCu and CrNiMoCu steels | | | |
| | X5NiCrMoCuTi20-18 | G-X7NiCrMoCuNb25-20 | 1.4500 |
| | | G-X2NiCrMoCuN20-18 | 1.4506 |
| | | G-X2NiCrMoCuN25-20 | 1.4531 |
| | X1NiCrMoCuN25-20-5 | | 1.4536 |
| | | G-X7CrNiMoCuNb18-18 | 1.4539 |
| | X5NiCrMoCuNb22-18 | | 1.4585 |
| | | | 1.4586 |

PACKAGING AND AVAILABLE SIZES

| | |
|-------------------|-----|
| Diameter (mm) | 1.2 |
| 15 kg spool BS300 | X |

Other sizes and packaging on request

LNM 4500 rev. C-EN23-01/02/16

LNM 2507

CLASSIFICATION

| | | | |
|-------------|--------------|---------|---|
| AWS A5.9 | ER2594 | A-Nr | 8 |
| ISO 14343-A | G 25 9 4 N L | F-Nr | 6 |
| | | 9606 FM | 5 |

GENERAL DESCRIPTION

The Superduplex 2507 is used when good corrosion resistance, stress corrosion cracking and pitting corrosion are a concern. It is used for welding austenitic-ferritic stainless alloys of the 25%Cr 7%Ni 4%Mo low-C types.

WELDING POSITIONS (ISO/ASME)



SHIELDING GASES (ACC. ISO 14175)

| | |
|-----|--------------------------------------|
| M12 | Mixed gas Ar+ 0.5-5% CO ₂ |
| M13 | Mixed gas Ar+ 0.5-3% O ₂ |

CHEMICAL COMPOSITION (W%) TYPICAL WIRE

| C | Mn | Si | Cr | Ni | Mo | Cu | Nb | P | S | V | W | N |
|------|-----|-----|-----------|----------|---------|------|------|------|------|-----|-----|-----------|
| 0.03 | 2.5 | 1.0 | 24.0-27.0 | 8.0-10.5 | 2.5-4.5 | 0.05 | 0.03 | 0.03 | 0.02 | 0.1 | 1.0 | 0.20-0.30 |

MECHANICAL PROPERTIES, TYPICAL, ALL WELD METAL

| | Shielding gas | Condition | Yield strength [N/mm ²] | Tensile strength [N/mm ²] | Elongation [%] | Impact ISO-V(J) -40°C |
|----------------|---------------|-----------|--|--|-------------------|--------------------------|
| Typical values | M12 | AW | 650 | 850 | 23 | 55 |

EXAMPLES OF MATERIALS TO BE WELDED

| Steel grades | ASTM | UNS |
|-------------------|--|----------------|
| 25%Cr Superduplex | A182 F53, F55 BS EN 10088-2 X2CrNiMoN25-7-4 (1.4410) SAF 2507(Sandvik/Avesta) Uranus 47N(CLI) | S32750, S32760 |
| Casting | A890 Gr5A, 6A ACI CE3MN | J93404 |

APPLICATION ADVICE

Offshore Oil/Gas, chemical and petrochemical process industries, pipework systems, flowlines, paper industry, manifolds, etc. Preheat is not generally required. Interpass temperature 150 \pm max is recommended. Heat input in the range 1.0-2.0kJ/mm, depending on material thickness should be acceptable but most codes restrict the max to 1.5 or 1.75kJ/mm.

PACKAGING AND AVAILABLE SIZES

| | |
|------------------|-----|
| Diameter (mm) | 1.0 |
| 15 kg spool B300 | X |

Other sizes and packaging on request

LNM 2507: rev. C-EN01-01/02/16

LNM 309LSi

CLASSIFICATION

| | | | | | |
|--------------------|-------------|----------------|---|---------------|--------|
| AWS A5.9 | ER309LSi | A-Nr | 8 | Mat-Nr | 1.4332 |
| ISO 14343-A | G 23 12 LSi | F-Nr | 6 | | |
| | | 9606 FM | 5 | | |

GENERAL DESCRIPTION

Solid wire for welding stainless steel to carbon steel
With high silicon for improved wettability

WELDING POSITIONS (ISO/ASME)



PA/1G



PB/2F



PC/2G



PD/4F



PE/4G



PF/3Gu

SHIELDING GASES (ACC. ISO 14175)

| | |
|------------|--------------------------------------|
| M12 | Mixed gas Ar+ 0.5-5% CO ₂ |
| M13 | Mixed gas Ar+ 0.5-3% O ₂ |

APPROVALS

| | | | | | | |
|------------|-----------|-----------|------------|-----------|-----------|------------|
| ABS | BV | DB | DNV | GL | LR | TÜV |
| + | + | + | + | + | + | + |

CHEMICAL COMPOSITION (W%) TYPICAL WIRE

| | | | | | |
|----------|-----------|-----------|-----------|-----------|-----------|
| C | Mn | Si | Cr | Ni | Mo |
| 0.02 | 1.8 | 0.8 | 23.3 | 13.8 | 0.14 |

MECHANICAL PROPERTIES, TYPICAL, ALL WELD METAL

| | Shielding gas | Condition | 0.2% proof strength | Tensile strength | Elongation | Impact ISO-V(J) | |
|----------------|---------------|-----------|----------------------|----------------------|------------|-----------------|-------|
| | | | [N/mm ²] | [N/mm ²] | [%] | -20°C | +20°C |
| Typical values | M12 | AW | 436 | 582 | 37 | 80 | 87 |

EXAMPLES OF MATERIALS TO BE WELDED

| Steel grades | EN 10088-1/-2 | Mat. Nr | ASTM | UNS |
|---------------------------------------|---------------|---------|-----------|--------|
| Corrosion resistant cladsteels | | | | |
| | X2CrNi18-10 | 1.4311 | (TP)304LN | S30453 |
| | X2CrNi19-11 | 1.4306 | (TP)304L | S30403 |
| | | | CF-3 | J92500 |
| | X4CrNi18-10 | 1.4301 | (TP)304 | S30400 |

Dissimilar metals (mild and low alloy steel to stainless steel)
Build-up welding on mild and low alloy steel

PACKAGING AND AVAILABLE SIZES

| Diameter [mm] | 0.8 | 1.0 | 1.2 | 1.6 |
|-----------------------|-----|-----|-----|-----|
| 15 kg spool BS300 | X | X | X | X |
| 250 kg Accutrak® Drum | | X | X | |

Other sizes and packaging on request

LNM 309LSi rev. C-EN22-01/02/16

LNM 307

CLASSIFICATION

| | | | | | |
|--------------------------|-----------|---------|---|--------|--------|
| AWS A5.9 | ER307* | A-Nr | 8 | Mat-Nr | 1.4370 |
| ISO 14343-A | G 18 8 Mn | F-Nr | 6 | | |
| * Nearest classification | | 9606 FM | 5 | | |

GENERAL DESCRIPTION

Solid wire for welding austenitic and ferritic stainless steels with difficult weldability
Often used as a buffer layer for hardfacing applications

WELDING POSITIONS (ISO/ASME)



PA/1G



PB/2F



PC/2G



PD/4F



PE/4G



PF/3Gu

SHIELDING GASES (ACC. ISO 14175)

| | |
|-----|--------------------------------------|
| M12 | Mixed gas Ar+ 0.5-5% CO ₂ |
| M13 | Mixed gas Ar+ 0.5-3% O ₂ |

GMAW

APPROVALS

TÜV

+

CHEMICAL COMPOSITION (W%) TYPICAL WIRE

| C | Mn | Si | Cr | Ni |
|------|----|-----|------|-----|
| 0.07 | 71 | 0.8 | 18.6 | 8.0 |

MECHANICAL PROPERTIES, TYPICAL, ALL WELD METAL

| | Shielding gas | Condition | 0.2% proof strength [N/mm ²] | Tensile strength [N/mm ²] | Elongation [%] | Impact ISO-V[J] +20°C |
|----------------|---------------|-----------|---|--|-------------------|--------------------------|
| Typical values | M12 | AW | 400 | 630 | 40 | 80 |

EXAMPLES OF MATERIALS TO BE WELDED

Various steel grades, such as:

- Armour plate
- Hardenable steels including steels difficult to weld
- Non-magnetic steels
- Work hardening austenitic manganese steels
- Dissimilar joints (CMn-steels to stainless steels)
- Exhaust systems

PACKAGING AND AVAILABLE SIZES

| Diameter (mm) | 0.8 | 1.0 | 1.2 |
|-----------------------|-----|-----|-----|
| 15 kg spool BS300 | X | X | X |
| 250 kg Accutrak® Drum | | | X |

LNM 307 rev. C-EN23-01/02/16

Other sizes and packaging on request

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LNM 304H

CLASSIFICATION

| | | | | | |
|--------------------|----------|----------------|---|---------------|--------|
| AWS A5.9 | ER308H | A-Nr | 8 | Mat-Nr | 1.4948 |
| ISO 14343-A | G 19 9 H | F-Nr | 6 | | |
| | | 9606 FM | 5 | | |

GENERAL DESCRIPTION

Solid wire for welding austenitic CrNi-steels
Especially for high temperature applications (up to 730°C)
Low sensitivity to precipitation of intermetallic phases

WELDING POSITIONS (ISO/ASME)



PA/1G



PB/2F



PC/2G



PD/4F



PE/4G



PF/3Gu

SHIELDING GASES (ACC. ISO 14175)

| | |
|------------|--------------------------------------|
| M12 | Mixed gas Ar+ 0.5-5% CO ₂ |
| M13 | Mixed gas Ar+ 0.5-3% O ₂ |

CHEMICAL COMPOSITION (W%) TYPICAL WIRE

| C | Mn | Si | Cr | Ni | Mo |
|------|-----|-----|----|-----|-----|
| 0.07 | 1.9 | 0.4 | 20 | 9.2 | 0.1 |

MECHANICAL PROPERTIES, TYPICAL, ALL WELD METAL

| | Shielding gas | Condition | 0.2% proof strength (N/mm ²) | Tensile strength (N/mm ²) | Elongation (%) |
|----------------|---------------|-----------|---|--|-------------------|
| Typical values | M12 | AW | 370 | 590 | 34 |

EXAMPLES OF MATERIALS TO BE WELDED

| Steel grades | EN 10088-1/-2 | EN 10213-4 | Mat. Nr | ASTM/AISI | UNS |
|---------------------------|---------------|---------------|---------|-----------|--------|
| Medium carbon [C > 0.03%] | X4CrNi18-10 | | 1.4301 | (TP)304 | S30400 |
| | | G-X5CrNi19-10 | 1.4308 | (TP)304H | S30409 |
| | | | 1.4948 | CF 8 | J92600 |

PACKAGING AND AVAILABLE SIZES

| Diameter (mm) | 1.0 | 1.2 |
|-------------------|-----|-----|
| 15 kg spool BS300 | X | X |

Other sizes and packaging on request

LNM 304H rev. C-EN23-01/02/16

LNM 309H

CLASSIFICATION

| | | | | | |
|----------|-------|---------|---|--------|--------|
| AWS A5.9 | ER309 | A-Nr | 8 | Mat-Nr | 1.4829 |
| | | F-Nr | 6 | | |
| | | 9606 FM | 5 | | |

GENERAL DESCRIPTION

Solid wire for high temperature applications like industrial furnaces
 High resistance to oxidation up to 1050°C
 High carbon content

WELDING POSITIONS (ISO/ASME)



PA/1G



PB/2F



PC/2G



PD/4F



PE/4G



PF/3Gu

SHIELDING GASES (ACC. ISO 14175)

| | |
|-----|--------------------------------------|
| M12 | Mixed gas Ar+ 0.5-5% CO ₂ |
| M13 | Mixed gas Ar+ 0.5-3% O ₂ |

CHEMICAL COMPOSITION (W%) TYPICAL WIRE

| C | Mn | Si | Cr | Ni | Mo |
|------|-----|-----|------|------|-----|
| 0.08 | 1.8 | 0.4 | 23.6 | 13.2 | 0.1 |

MECHANICAL PROPERTIES, TYPICAL, ALL WELD METAL

| | Shielding gas | Condition | 0.2% proof strength | Tensile strength | Elongation | Impact ISO-V(J) |
|----------------|---------------|-----------|----------------------|----------------------|------------|-----------------|
| | | | [N/mm ²] | [N/mm ²] | [%] | +20°C |
| Typical values | M12 | AW | 400 | 640 | 35 | 110 |

EXAMPLES OF MATERIALS TO BE WELDED

| Steel grades | EN 10088-1/-2 | EN 10213-4 | Mat. Nr | ASTM/ACI | UNS |
|--------------|----------------|------------------|---------|--------------------|--------|
| | X10CrAl7 | G-X30CrSi6 | 1.4710 | | |
| | X10CrAl13 | | 1.4713 | 502 | |
| | | G-X40CrSi13 | 1.4724 | 410/414-TP405-CA15 | |
| | | G-X40CrSi17 | 1.4729 | | |
| | X10CrAl18 | | 1.4740 | | |
| | X10CrAl24 | | 1.4742 | 430-TP430-CB30 | |
| | | G25CrNiSi18-9 | 1.4762 | TP443 | |
| | | G-X40CrNiSi22-9 | 1.4825 | | J92502 |
| | X15CrNiSi20-12 | | 1.4828 | TP309 | S30900 |
| | | G-X25CrNiSi20-14 | 1.4832 | | |
| | X12CrNiTi18-9 | | 1.4878 | | |

PACKAGING AND AVAILABLE SIZES

| Diameter (mm) | 1.0 | 1.2 |
|--------------------------------------|-----|-----|
| 15 kg spool BS300 | X | X |
| Other sizes and packaging on request | | |

LNM 309H: rev. C-EN22-01/02/16

LNM 310

CLASSIFICATION

| | | | | | |
|-------------|---------|---------|---|--------|--------|
| AWS A5.9 | ER310 | A-Nr | 9 | Mat-Nr | 1.4812 |
| ISO 14343-A | G 25 20 | F-Nr | 6 | | |
| | | 9606 FM | 5 | | |

GENERAL DESCRIPTION

Solid wire for welding heat resistant Cr- and CrNi-steels [25%Cr-20%Ni]
High resistance to oxidation and scaling up to approx. 1100°C

WELDING POSITIONS (ISO/ASME)



PA/1G



PB/2F



PC/2G



PD/4F



PE/4G



PF/3Gu

SHIELDING GASES (ACC. ISO 14175)

| | |
|-----|--------------------------------------|
| M12 | Mixed gas Ar+ 0.5-5% CO ₂ |
| M13 | Mixed gas Ar+ 0.5-3% O ₂ |

CHEMICAL COMPOSITION (W%) TYPICAL WIRE

| C | Mn | Si | Cr | Ni | Mo |
|-----|-----|------|----|----|-----|
| 0.1 | 1.7 | 0.45 | 26 | 21 | 0.1 |

MECHANICAL PROPERTIES, TYPICAL, ALL WELD METAL

| | Shielding gas | Condition | 0.2% proof strength [N/mm ²] | Tensile strength [N/mm ²] | Elongation [%] | Impact ISO-V(J) +20°C |
|----------------|---------------|-----------|---|--|-------------------|--------------------------|
| Typical values | M12 | AW | 355 | 610 | 35 | 110 |

EXAMPLES OF MATERIALS TO BE WELDED

| Steel grades | EN 10088-1/-2 | EN 10213-4 | Mat. Nr | ASTM/ACI | UNS |
|--------------|----------------|-------------------|---------|----------|--------|
| | X10CrAl24 | | 1.4762 | | |
| | | G-X25CrNiSi18-9 | 1.4825 | | |
| | | G-X40CrNiSi22-9 | 1.4826 | | |
| | X15CrNiSi20-12 | | 1.4828 | | |
| | | G-X25CrNiSi20-14 | 1.4832 | | |
| | X15CrNiSi25-20 | | 1.4841 | 310S | S31008 |
| | | | | CK20 | J94202 |
| | X12CrNi25-21 | | 1.4845 | | |
| | | G-X40CrNiSi 25-20 | 1.4848 | HK40 | |

PACKAGING AND AVAILABLE SIZES

| Diameter (mm) | 1.0 | 1.2 |
|-------------------|-----|-----|
| 15 kg spool BS300 | X | X |

Other sizes and packaging on request

LNM 310: rev. C-EN23-01/02/16

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LNM 312

CLASSIFICATION

| | | | | | |
|-------------|--------|---------|---|--------|--------|
| AWS A5.9 | ER312 | A-Nr | 8 | Mat-Nr | 1.4337 |
| ISO 14343-A | G 29 9 | F-Nr | 6 | | |
| | | 9606 FM | 5 | | |

GENERAL DESCRIPTION

Solid wire for welding heat resistant Cr- and CrNi-steels [25%Cr-20%Ni]
High resistance to oxidation and scaling up to approx. 1100°C

WELDING POSITIONS (ISO/ASME)



PA/1G



PB/2F



PC/2G



PD/4F



PE/4G



PF/3Gu

SHIELDING GASES (ACC. ISO 14175)

| | |
|-----|--------------------------------------|
| M12 | Mixed gas Ar+ 0.5-5% CO ₂ |
| M13 | Mixed gas Ar+ 0.5-3% O ₂ |

CHEMICAL COMPOSITION (W%) TYPICAL WIRE

| C | Mn | Si | Cr | Ni |
|-----|-----|-----|------|-----|
| 0.1 | 1.8 | 0.4 | 30.7 | 8.9 |

MECHANICAL PROPERTIES, TYPICAL, ALL WELD METAL

| | Shielding gas | Condition | 0.2% proof strength [N/mm ²] | Tensile strength [N/mm ²] | Elongation [%] | Impact ISO-V(U) +20°C |
|----------------|---------------|-----------|---|--|-------------------|--------------------------|
| Typical values | M12 | AW | 355 | 610 | 35 | 110 |

EXAMPLES OF MATERIALS TO BE WELDED

| Steel grades | EN 10088-1/-2 | EN 10213-4 | Mat. Nr | ASTM/ACI | UNS |
|--------------|----------------|-------------------|---------|----------|--------|
| | X10CrAl24 | | 1.4762 | | |
| | | G-X25CrNiSi18-9 | 1.4825 | | |
| | | G-X40CrNiSi22-9 | 1.4826 | | |
| | X15CrNiSi20-12 | | 1.4828 | | |
| | | G-X25CrNiSi20-14 | 1.4832 | | |
| | X15CrNiSi25-20 | | 1.4841 | 310S | S31008 |
| | | | | CK20 | J94202 |
| | X12CrNi25-21 | | 1.4845 | | |
| | | G-X40CrNiSi 25-20 | 1.4848 | HK40 | |

PACKAGING AND AVAILABLE SIZES

| Diameter [mm] | 1.0 | 1.2 |
|-------------------|-----|-----|
| 15 kg spool BS300 | X | X |

Other sizes and packaging on request

LNM 312: rev. C-EN02-01/02/16

LNM NiCr 31/27

CLASSIFICATION

| | | | | | |
|-------------|----------------|---------|---|--------|--------|
| AWS A5.9 | ER383 | A-Nr | 9 | Mat-Nr | 1.4563 |
| ISO 14343-A | G 27 31.4 Cu L | F-Nr | 6 | | |
| | | 9606 FM | 5 | | |

GENERAL DESCRIPTION

Solid wire for welding of Cu-alloyed NiCrMo-steels
 Excellent resistance to general corrosion, pitting and stress corrosion in acid and alkaline environments
 Especially for applications in phosphoric and sulphuric acid

WELDING POSITIONS (ISO/ASME)



PA/1G



PB/2F



PC/2G



PD/4F



PE/4G



PF/3Gu

SHIELDING GASES (ACC. ISO 14175)

| | |
|----|--------------------------|
| I1 | Inert gas Ar (100%) |
| I3 | Inert gas Ar+ 0.5-95% He |

CHEMICAL COMPOSITION (W%) TYPICAL WIRE

| C | Mn | Si | Ni | Cr | Mo | Cu |
|------|-----|-----|----|----|-----|-----|
| 0.01 | 1.6 | 1.0 | 31 | 27 | 3.5 | 1.0 |

MECHANICAL PROPERTIES, TYPICAL, ALL WELD METAL

| Typical values | Shielding gas | Condition | 0.2% proof strength | Tensile strength | Elongation | Impact ISO-V(J) | |
|----------------|---------------|-----------|----------------------|----------------------|------------|-----------------|--------|
| | | | [N/mm ²] | [N/mm ²] | [%] | +20°C | -196°C |
| | I1 | AW | 440 | 640 | 38 | 100 | 50 |

EXAMPLES OF MATERIALS TO BE WELDED

| Steel grades | EN 10088-1/2 | Mat. Nr | ASTM/ACI | UNS |
|--|-------------------|---------|----------------|--------|
| Copper alloy CrNiMo and NiCrMo-steels | | | | |
| | X1NiCrMoCu31-27-4 | 1.4563 | | N08028 |
| | X1NiCrMoCu25-20-5 | 1.4539 | Alloy 904L | N08904 |
| | DIN 17744 | | | |
| | NiCr 21 Mo | 2.4858 | Alloy 825 | N08825 |
| | NiCr 21 Mo 6Cu | 2.6410 | Alloy 825 h Mo | N08821 |
| | X3NiCrCuMoTi27-23 | 1.4503 | | |

PACKAGING AND AVAILABLE SIZES

| | |
|-------------------|-----|
| Diameter [mm] | 1.2 |
| 15 kg spool BS300 | X |

Other sizes and packaging on request

LNM NiCr 31/27: rev. C-EN23-01/02/16

LNM NiCro 60/20

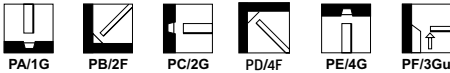
CLASSIFICATION

| | | | | | |
|------------------|-------------------------|----------------|----|---------------|--------|
| AWS A5.14 | ERNiCrMo-3 | A-Nr | - | Mat-Nr | 2.4831 |
| ISO 18274 | S Ni 6625 (NiCr22Mo9Nb) | F-Nr | 43 | | |
| | | 9606 FM | 6 | | |

GENERAL DESCRIPTION

Solid wire for welding of nickel alloys
 Extreme resistance to various corrosion forms
 High chromium and molybdenum content

WELDING POSITIONS (ISO/ASME)



SHIELDING GASES (ACC. ISO 14175)

| | |
|-----------|--------------------------|
| I1 | Inert gas Ar (100%) |
| I3 | Inert gas Ar+ 0.5-95% He |

CHEMICAL COMPOSITION (W%) TYPICAL WIRE

| C | Mn | Si | Ni | Cr | Mo | Nb | Fe |
|------|------|------|----|------|----|-----|-----|
| 0.02 | 0.06 | 0.07 | 64 | 21.9 | 9 | 3.5 | 0.4 |

MECHANICAL PROPERTIES, TYPICAL, ALL WELD METAL

| Typical values | Shielding gas | Condition | 0.2% proof strength | Tensile strength | Elongation | Impact ISO-V(J) | |
|----------------|---------------|-----------|----------------------|----------------------|------------|-----------------|--------|
| | | | [N/mm ²] | [N/mm ²] | [%] | +20°C | -196°C |
| | I1 | AW | 520 | 770 | 34 | 80 | 60 |

EXAMPLES OF MATERIALS TO BE WELDED

| Ni-alloy grades | DIN/EN | Mat. Nr | ASTM/ACI | UNS |
|--|------------------|---------|----------------------|------------|
| NiCrMo-steel Type alloy 625 and welding dissimilar high NiCrMo-steels for corrosion and heat resisting purposes | | | | |
| X1NiCrMoCuN25-20-6 | | 1.4529 | Alloy 925 | N08925 |
| X1NiCrMoCu25-20-5 | | 1.4539 | Alloy 904L | N08904 |
| X1CrNiMoCuN20-18-7 | | 1.4547 | Alloy 254 | S31254 |
| X2NiCrAlTi32-20 | | 1.4558 | Alloy 800L | N08800 |
| G-X10NiCrNb32-20 | | 1.4859 | | |
| X10NiCrAlTi32-20 | | 1.4876 | Alloy 800/800H | N08800/-10 |
| NiCr22Mo6Cu | | 2.4618 | Alloy G | N06007 |
| NiCr22Mo7Cu | | 2.4619 | Alloy G-3 | N06985 |
| NiCr21Mo6Cu | | 2.4641 | Alloy 825hMo | N08821 |
| NiCr20CuMo | | 2.4660 | Alloy 20 | N08020 |
| NiCr15Fe | | 2.4816 | B168-Alloy 600 | N06600 |
| NiCr22Mo9Nb | | 2.4856 | B443-Alloy 625 | N06625 |
| NiCr21Mo | | 2.4858 | B424-Alloy 825 | N08825 |
| NiCr20Ti | | 2.4951 | Alloy 75 | N06075 |
| NiCr20TiAl | | 2.4952 | Alloy 80A | N07080 |
| Low alloy steels | | | | |
| | 10Ni14 (3.5% Ni) | 1.5637 | ASTM A333 Grade 3 | - |
| | 12Ni19, X12Ni5 | 1.5680 | - | K41583 |
| 9% Ni-steel for LNG storage tanks | | | | |
| | X8Ni9 | 1.5662 | A353/A353M | - |
| | X8Ni9 / 8%Ni | 1.5662 | A553/A553M Type I/II | - / K71340 |

PACKAGING AND AVAILABLE SIZES

| Diameter [mm] | 0.8 | 1.0 | 1.2 |
|-------------------|-----|-----|-----|
| 15 kg spool BS300 | X | X | X |

LNM NiCro 60/20: rev. C-EN23-01/02/16

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LNM NiCro 70/19

CLASSIFICATION

| | | | | | |
|-----------|-------------------------|---------|----|--------|--------|
| AWS A5.14 | ERNiCr-3 | A-Nr | - | Mat-Nr | 2.4806 |
| ISO 18274 | S Ni 6082 (NiCr20Mn3Nb) | F-Nr | 43 | | |
| | | 9606 FM | 6 | | |

GENERAL DESCRIPTION

Solid wire for welding nickel based alloys, dissimilar metals and cladding
High resistance to oxidation and high impact toughness at low temperature

WELDING POSITIONS (ISO/ASME)



PA/1G



PB/2F



PC/2G



PD/4F



PE/4G



PF/3Gu

SHIELDING GASES (ACC. ISO 14175)

| | |
|----|--------------------------|
| I1 | Inert gas Ar (100%) |
| I3 | Inert gas Ar+ 0.5-95% He |

APPROVALS

TÜV

+

CHEMICAL COMPOSITION (W%) TYPICAL WIRE

| C | Mn | Si | Ni | Cr | Nb | Cu | Fe |
|------|-----|------|------|------|-----|------|-----|
| 0.03 | 3.1 | 0.08 | 72.5 | 20.5 | 2.6 | 0.01 | 0.8 |

MECHANICAL PROPERTIES, TYPICAL, ALL WELD METAL

| Typical values | Shielding gas | Condition | 0.2% proof strength | Tensile strength | Elongation | Impact ISO-V(J) | |
|----------------|---------------|-----------|----------------------|----------------------|------------|-----------------|--------|
| | | | [N/mm ²] | [N/mm ²] | (%) | +20°C | -196°C |
| | I1 | AW | 390 | 640 | 35 | 150 | 50 |

EXAMPLES OF MATERIALS TO BE WELDED

| Ni-alloy grades | BS3076 | DIN 17744/17465 | Mat. Nr | ASTM/ACI | UNS |
|---|--------|------------------|---------|----------------|----------|
| | | SEW 595 | | B366 | |
| Ni-base high Cr alloy steel for low and high corrosion searching application | | | | | |
| | Na 14 | NiCr15Fe | 2.4816 | B168-Alloy 600 | N06600 |
| | | LC-NiCr15Fe | 2.4817 | Alloy 600L | N06600 |
| | | NiCr20Ti | 2.4951 | Alloy 75 | |
| | | NiCr20TiA1 | 2.4952 | Alloy 80A | N07080 |
| | Na 15 | X10NiCrAlTi32-20 | 1.4876 | Alloy 800/800H | N0800/10 |
| | | NiCr23Fe | 2.4851 | Alloy 601(H) | N06601 |
| | Na 17 | X12NiCrSi36-16 | 1.4864 | 330 | N08330 |
| | | G-X40NiCrNb35-25 | 1.4852 | | |
| | | G-X40NiCrSi35-25 | 1.4857 | HP | |

Un- and low alloy heat and creep resistant steel to stainless steel

APPLICATION ADVICE

Limit heat-input (HI<1.5kJ/mm) and interpass temperature (Ti<150°C)

PACKAGING AND AVAILABLE SIZES

| Diameter (mm) | 1.0 | 1.2 |
|--------------------------------------|-----|-----|
| 15 kg spool BS300 | X | X |
| Other sizes and packaging on request | | |

LNM NiCro 70/19: rev. C-EN23-01/02/16

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LINCOLN
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LNM NiTi

CLASSIFICATION

| | | | | | |
|-----------|-------------------|---------|----|--------|--------|
| AWS A5.14 | ERNi1 | A-Nr | - | Mat-Nr | 2.4155 |
| ISO 18274 | S Ni 2061 (NiTi3) | F-Nr | 41 | | |
| | | 9606 FM | 6 | | |

GENERAL DESCRIPTION

Solid wire for welding pure nickel and nickel alloys and joining these materials with unalloy/low alloy steel
Suitable for surfacing carbon steels

WELDING POSITIONS (ISO/ASME)



PA/1G



PB/2F



PC/2G



PD/4F



PE/4G



PF/3Gu

SHIELDING GASES (ACC. ISO 14175)

| | |
|----|--------------------------|
| I1 | Inert gas Ar (100%) |
| I3 | Inert gas Ar+ 0.5-95% He |

APPROVALS

TÜV

+

CHEMICAL COMPOSITION (W%) TYPICAL WIRE

| C | Mn | Si | Ni | Ti | Fe |
|------|-----|-----|------|-----|------|
| 0.02 | 0.4 | 0.2 | bal. | 3.1 | 0.06 |

MECHANICAL PROPERTIES, TYPICAL, ALL WELD METAL

| | Shielding gas | Condition | 0.2% proof strength (N/mm ²) | Tensile strength (N/mm ²) | Elongation (%) | Impact ISO-V(J) +20°C |
|----------------|---------------|-----------|---|--|-------------------|--------------------------|
| Typical values | I1 | AW | 250 | 460 | 35 | 120 |

EXAMPLES OF MATERIALS TO BE WELDED

| DIN-classification | Mat. Nr | ASTM/ACI |
|--------------------|---------|-----------|
| Ni 99.6 | 2.4060 | |
| Ni 99.8 | 2.4050 | |
| Ni 99.6Si | 2.4056 | |
| Ni 99.4Fe | 2.4062 | |
| Ni 99.2 | 2.4066 | Alloy 200 |
| LC-Ni 99 | 2.4068 | Alloy 201 |
| LC-Ni 99.6 | 2.4061 | Alloy 205 |
| NiMn 10 | 2.4108 | |
| NiMn 5 | 2.4116 | |

PACKAGING AND AVAILABLE SIZES

Diameter (mm) 1.2

15 kg spool BS300 X

Other sizes and packaging on request

LNM NiTi: rev. C-EN23-01/02/16

LNM NiFe

CLASSIFICATION

| | | | | | |
|-----------|-----------|---------|---|--------|--------|
| AWS A5.15 | ENiFe-CI | A-Nr | - | Mat-Nr | 2.4560 |
| ISO 1071 | S NiFe-CI | F-Nr | - | | |
| | | 9606 FM | 6 | | |

GENERAL DESCRIPTION

Solid wire for butt welds and hardfacing application in cast iron
 Suitable for dissimilar joints cast iron/steel
 Hardness approximately 200HB
 Optimal welding characteristics

WELDING POSITIONS (ISO/ASME)



PA/1G



PB/2F



PC/2G



PD/4F



PE/4G



PF/3Gu

SHIELDING GASES (ACC. ISO 14175)

| | |
|----|--------------------------|
| I1 | Inert gas Ar (100%) |
| I3 | Inert gas Ar+ 0.5-95% He |

CHEMICAL COMPOSITION (W%) TYPICAL WIRE

| C | Mn | Si | Ni | Cu | Fe |
|------|------|------|----|-----|------|
| 0.05 | 0.83 | 0.14 | 55 | 0.4 | bal. |

MECHANICAL PROPERTIES, TYPICAL, ALL WELD METAL

Typical hardness value

2 layers, AW approx. 200 HB

PACKAGING AND AVAILABLE SIZES

Diameter (mm) 1.2
 15 kg spool BS300 X
 Other sizes and packaging on request

LNM NiFe rev. C-EN2-01/02/16

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LNM CuAl8

CLASSIFICATION

| | | | | | |
|----------|-------------------|---------|----|--------|--------|
| AWS A5.7 | ERCuAl-A1 | A-Nr | - | Mat-Nr | 2.0921 |
| EN 14640 | S Cu 6100 (CuAl8) | F-Nr | 36 | | |
| | | 9606 FM | - | | |

GENERAL DESCRIPTION

Solid wire for welding copper-aluminium alloys, as aluminium bronze
High resistance to corrosion and wear

WELDING POSITIONS (ISO/ASME)



PA/1G



PB/2F



PC/2G



PD/4F



PE/4G



PF/3Gu

SHIELDING GASES (ACC. ISO 14175)

| | |
|----|--------------------------|
| I1 | Inert gas Ar (100%) |
| I3 | Inert gas Ar+ 0.5-95% He |

GMAW

CHEMICAL COMPOSITION (W%) TYPICAL WIRE

| | | |
|------|----|-----|
| Cu | Al | Mn |
| bal. | 8 | 0.3 |

MECHANICAL PROPERTIES, TYPICAL, ALL WELD METAL

| | Shielding gas | Condition | 0.2% proof strength (N/mm ²) | Tensile strength (N/mm ²) | Elongation (%) | Hardness HB |
|----------------|---------------|-----------|---|--|-------------------|----------------|
| Typical values | I1 | AW | 185 | 430 | 30 | 95 |

EXAMPLES OF MATERIALS TO BE WELDED

| Cu-alloy grades | Standard | Type | Mat. Nr |
|---------------------------------|-----------|-----------|---------|
| Copper-aluminium wrought alloys | DIN 17665 | CuAl5As | 2.0918 |
| | | CuAl8 | 2.0920 |
| Copper-aluminium cast alloys | DIN 1714 | G-CuAl8Mn | 2.0962 |

PACKAGING AND AVAILABLE SIZES

| Diameter (mm) | 0.8 | 1.0 | 1.2 | 1.6 |
|------------------|-----|-----|-----|-----|
| 12 kg spool B300 | X | X | X | X |

Other sizes and packaging on request

LNM CuAl8: rev. C-EN23-01/02/16

LNM CuAl8Ni6

CLASSIFICATION

| | | | | | |
|--------------|----------------------|---------|----|--------|--------|
| AWS A5.7 | ERCuNiAl | A-Nr | - | Mat-Nr | 2.0923 |
| EN ISO 24373 | S Cu 6328 (CuAl9Ni5) | F-Nr | 37 | | |
| | | 9606 FM | - | | |

GENERAL DESCRIPTION

Solid wire for welding of cast and wrought, nickel-aluminium-bronze
High resistance to corrosion and wear (cavitation)

WELDING POSITIONS (ISO/ASME)



PA/1G



PB/2F



PC/2G



PD/4F



PE/4G



PF/3Gu

SHIELDING GASES (ACC. ISO 14175)

| | |
|----|--------------------------|
| I1 | Inert gas Ar (100%) |
| I3 | Inert gas Ar+ 0.5-95% He |

CHEMICAL COMPOSITION (W%) TYPICAL WIRE

| Cu | Al | Mn | Ni | Fe |
|------|-----|-----|-----|-----|
| bal. | 9.0 | 2.5 | 5.0 | 4.0 |

MECHANICAL PROPERTIES, TYPICAL, ALL WELD METAL

| | Shielding gas | Condition | 0.2% proof strength (N/mm ²) | Tensile strength (N/mm ²) | Elongation (%) | Hardness HB |
|----------------|---------------|-----------|---|--|-------------------|----------------|
| Typical values | I1 | AW | 380 | 500 | 20 | 150 |

EXAMPLES OF MATERIALS TO BE WELDED

Cu-alloy grades as copper-aluminium alloys and copper-nickel-aluminium alloys with 7-9% Al

Typical applications :

- Ship fittings and propellers
- Power plant valves
- Intake screens
- Oil recovery pumps
- Propeller gear housings
- Marine propulsion systems
- Piping systems

PACKAGING AND AVAILABLE SIZES

| | |
|--------------------------------------|-----|
| Diameter (mm) | 1.6 |
| 12 kg spool BS300 | X |
| Other sizes and packaging on request | |

LNM CuAl8Ni6: rev. C-EN05-01/02/16

LNM CuNi30

CLASSIFICATION

| | | | | | |
|----------|--------------------|---------|----|--------|--------|
| AWS A5.7 | ERCuNi | A-Nr | - | Mat-Nr | 2.0837 |
| EN 14640 | S Cu 7158 (CuNi30) | F-Nr | 34 | | |
| | | 9606 FM | - | | |

GENERAL DESCRIPTION

Solid wire for welding copper-nickel alloys containing 10-30%Ni

WELDING POSITIONS (ISO/ASME)



PA/1G



PB/2F



PC/2G



PD/4F



PE/4G



PF/3Gu

SHIELDING GASES (ACC. ISO 14175)

| | |
|----|--------------------------|
| I1 | Inert gas Ar (100%) |
| I3 | Inert gas Ar+ 0.5-95% He |

CHEMICAL COMPOSITION (W%) TYPICAL WIRE

| Cu | Ni | Mn |
|------|----|-----|
| bal. | 31 | 0.8 |

MECHANICAL PROPERTIES, TYPICAL, ALL WELD METAL

| | Shielding gas | Condition | Yield strength (N/mm ²) | Tensile strength (N/mm ²) | Elongation (%) | Hardness HB |
|----------------|---------------|-----------|--|--|-------------------|----------------|
| Typical values | I1 | AW | 220 | 380 | 30 | 70 |

EXAMPLES OF MATERIALS TO BE WELDED

| Cu-alloy grades | Standard | Type | Mat. Nr | UNS |
|-------------------------------------|--------------|------|---------|---------|
| Copper-nickel wrought alloys | | | | |
| DIN 17664 | CuNi10Fe1Mn | | 2.0872 | C 70600 |
| | CuNi30Mn1Fe | | 2.0882 | C 71500 |
| | CuNi30Fe2Mn2 | | 2.0883 | C 71600 |
| Copper-nickel cast alloys | | | | |
| DIN 17658 | G-CuNi10 | | 2.0815 | |
| | G-CuNi30 | | 2.0835 | |

PACKAGING AND AVAILABLE SIZES

Diameter [mm] 1.2

15 kg spool BS300 X

Other sizes and packaging on request

LNM CuNi30: rev. C-EN25-01/02/16

LNM CuSn

CLASSIFICATION

| | | | | | |
|-----------------|-----------------|----------------|----|---------------|--------|
| AWS A5.7 | ERCu | A-Nr | - | Mat-Nr | 2.1006 |
| EN 14640 | Cu 1898 (CuSn1) | F-Nr | 31 | | |
| | | 9606 FM | - | | |

GENERAL DESCRIPTION

Solid wire for GMA-welding of copper

WELDING POSITIONS (ISO/ASME)



PA/1G



PB/2F



PC/2G



PD/4F



PE/4G



PF/3Gu

SHIELDING GASES (ACC. ISO 14175)

| | |
|----|--------------------------|
| I1 | Inert gas Ar (100%) |
| I3 | Inert gas Ar+ 0.5-95% He |

CHEMICAL COMPOSITION (W%) TYPICAL WIRE

| Cu | Mn | Si | Sn | Ni |
|------|-----|-----|-----|-----|
| bal. | 0.2 | 0.3 | 0.8 | 0.1 |

MECHANICAL PROPERTIES, TYPICAL, ALL WELD METAL

| | Shielding gas | Condition | 0.2% proof strength [N/mm ²] | Tensile strength [N/mm ²] | Elongation [%] | Hardness HB |
|----------------|---------------|-----------|---|--|-------------------|----------------|
| Typical values | I1 | AW | 100 | 220 | 60 | 35 |

EXAMPLES OF MATERIALS TO BE WELDED

| Cu-alloy grades | Standard | Type | Mat. Nr |
|-----------------|----------|---------------------------------|-----------|
| Copper | DIN 1787 | OF-Cu | 2.0040 |
| | | SE-Cu | 2.0070 |
| | | SW-Cu | 2.0076 |
| | | SF-Cu | 2.0090 |
| | | Wrought low alloy copper alloys | DIN 17666 |
| | CuSP | 2.1498 | |
| | CuTeP | 2.1546 | |

PACKAGING AND AVAILABLE SIZES

| Diameter [mm] | 1.0 | 1.2 |
|------------------|-----|-----|
| 12 kg spool B300 | X | X |

LNM CuSn: rev. C-EN25-01/02/16

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LNM CuSi3

CLASSIFICATION

| | | | | | |
|--------------|---------------------|---------|----|--------|--------|
| AWS A5.7 | ERCuSi-A | A-Nr | - | Mat-Nr | 2.1461 |
| EN ISO 24373 | S Cu 6560 (CuSi3Mn) | F-Nr | 32 | | |
| | | 9606 FM | - | | |

GENERAL DESCRIPTION

Solid wire for GMA-welding of low alloy copper grades
High temperature and corrosion resistant

WELDING POSITIONS (ISO/ASME)



PA/1G



PB/2F



PC/2G



PD/4F



PE/4G



PF/3Gu

SHIELDING GASES (ACC. ISO 14175)

| | |
|----|--------------------------|
| I1 | Inert gas Ar (100%) |
| B | Inert gas Ar+ 0.5-95% He |

GMAW

CHEMICAL COMPOSITION (W%) TYPICAL WIRE

| Cu | Sn | Mn | Si | Zn |
|------|-----|-----|-----|-----|
| bal. | 0.1 | 1.0 | 3.0 | 0.1 |

MECHANICAL PROPERTIES, TYPICAL, ALL WELD METAL

| | Shielding gas | Condition | Yield strength (N/mm ²) | Tensile strength (N/mm ²) | Elongation (%) | Hardness HB | Impact ISO-V(I) +20°C |
|----------------|---------------|-----------|--|--|-------------------|----------------|--------------------------|
| Typical values | I1 | AW | 120 | 350 | 40 | 95 | 60 |

EXAMPLES OF MATERIALS TO BE WELDED

Copper, low alloy copper and copper-zinc alloys

PACKAGING AND AVAILABLE SIZES

| Diameter (mm) | 0.8 | 1.0 | 1.2 |
|-------------------------|-----|-----|-----|
| 5 kg plastic spool S200 | X | | |
| 12 kg spool BS300 | X | X | X |

Other sizes and packaging on request

LNM CuSi3: rev. C-EN03-01/02/16

SuperGlaze® MIG 1070

CLASSIFICATION

| | | | |
|-----------|--------------------|--------|--------|
| ISO 18273 | S Al 1070 (Al99.7) | A-Nr | - |
| | | F-Nr | 21 |
| | | Mat-Nr | 3.0259 |

GENERAL DESCRIPTION

Highly resistant to chemical corrosion and good crack resistance

Suitable for electrical and chemical applications utilizing aluminium base metal with little or no alloying elements

Like all 1xxx filler alloys, Al 1070 is one of the softest aluminium MIG wire and requires extra care to ensure good feeding

WELDING POSITIONS (ISO/ASME)



PA/1G



PB/2F



PC/2G



PD/4F



PE/4G



PF/3Gu

SHIELDING GASES (ACC. ISO 14175)

| | |
|-----------|---------------------|
| I1 | Inert gas Ar (100%) |
| Flow rate | 14.2 - 23.6L/min |

CHEMICAL COMPOSITION (W%) TYPICAL WIRE

| Al | Si | Fe | Cu | Mn | Mg | Cr | Zn | V | Ti | Be |
|-----------|----------|-----------|-----------|-----------|-----------|----|-----------|-----------|-----------|-------------|
| min. 99.7 | max. 0.2 | max. 0.25 | max. 0.04 | max. 0.03 | max. 0.03 | 0 | max. 0.04 | max. 0.05 | max. 0.03 | max. 0.0003 |

Notes : Unspecified elements should not exceed a total of 0.03%

MECHANICAL PROPERTIES, TYPICAL, ALL WELD METAL

| | Shielding gas | Condition | Yield strength [N/mm ²] | Tensile strength [N/mm ²] | Elongation [%] |
|----------------|---------------|-----------|-------------------------------------|---------------------------------------|----------------|
| Typical values | I1 | AW | 20-30 | 65-80 | 29-35 |

PHYSICAL PROPERTIES

Melting range : 647 - 658°C

Density : approximately 2700 kg/m³

APPLICATIONS

Joining 1xxx alloys to themselves or other alloys

Bus Bars

Electrical Boxes

Heat Exchangers

Metallizing

Electro-technical, Chemical, Construction and Food Industry

PACKAGING AND AVAILABLE SIZES

| Diameter (mm) | 0.8 | 1.0 | 1.2 | 1.6 | 2.4 |
|---------------------------|-----|-----|-----|-----|-----|
| 0.5 kg plastic spool S100 | X | X | X | X | |
| 7.26 kg spool S300 | X | X | X | X | X |
| 7.0 kg spool BS300 | X | X | X | X | X |
| 23-27 kg wooden reel | | X | X | X | X |
| 125 kg Accupak | | | X | X | |
| 159 kg wooden reel | | X | X | X | X |
| 227 kg wooden reel | | X | X | X | X |

Superglaze® MIG 1070: rev. C-EN02-01/02/16

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LINCOLN
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SuperGlaze® MIG 1100

CLASSIFICATION

| | | | |
|-----------|----------------------|--------|----|
| AWS 5.10 | ER1100 | A-Nr | - |
| ISO 18273 | S Al 1100 (Al99.0Cu) | F-Nr | 21 |
| EN 573.3 | EN AW-Al99.0Cu | Mat-Nr | - |

GENERAL DESCRIPTION

Highly resistant to chemical corrosion and good crack resistance

Suitable for electrical and chemical applications utilizing aluminium base metal with little or no alloying elements

Like all 1xxx filler alloys, Al 1100 is one of the softest aluminium MIG wire and requires extra care to ensure good feeding

WELDING POSITIONS (ISO/ASME)



PA/1G



PB/2F



PC/2G



PD/4F



PE/4G



PF/3Gu

SHIELDING GASES (ACC. ISO 14175)

| | |
|-----------|---------------------|
| I1 | Inert gas Ar (100%) |
| Flow rate | 14.2 - 23.6L/min |

CHEMICAL COMPOSITION (W%) TYPICAL WIRE

| Al | Si | Fe | Cu | Mn | Mg | Cr | Zn | Ti | Be |
|-----------|----|----|-----------|-----------|----|----|-----------|----|-------------|
| min. 99.0 | A | A | 0.05-0.20 | max. 0.05 | 0 | 0 | max. 0.10 | 0 | max. 0.0003 |

Notes : A = Si+Fe max. 0.95

Notes : Unspecified elements should not exceed a total of 0.15%

MECHANICAL PROPERTIES, TYPICAL, ALL WELD METAL

| | Shielding gas | Condition | Yield strength [N/mm ²] | Tensile strength [N/mm ²] | Elongation [%] |
|----------------|---------------|-----------|-------------------------------------|---------------------------------------|----------------|
| Typical values | I1 | AW | 20-30 | 65-80 | 29-35 |

PHYSICAL PROPERTIES

Melting range : 647 - 658°C

Density : approximately 2700 kg/m³

APPLICATIONS

Joining 1xxx alloys to themselves or other alloys

Bus Bars

Electrical Boxes

Heat Exchangers

Metallizing

Electro-technical, Chemical, Construction and Food Industry

PACKAGING AND AVAILABLE SIZES

| Diameter (mm) | 0.8 | 1.0 | 1.2 | 1.6 | 2.4 |
|---------------------------|-----|-----|-----|-----|-----|
| 0.5 kg plastic spool S100 | X | X | X | X | |
| 7.26 kg spool S300 | X | X | X | X | X |
| 7.0 kg spool B5300 | X | X | X | X | X |
| 23-27 kg wooden reel | | X | X | X | X |
| 125 kg Accupak | | | X | X | |
| 159kg wooden reel | | X | X | X | X |
| 227 kg wooden reel | | X | X | X | X |

Superglaze® MIG 1100: rev. C-EN02-01/02/16

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SuperGlaze® MIG 2319

CLASSIFICATION

| | | | |
|-----------|-------------------------|--------|----|
| AWS 5.10 | ER2319 | A-Nr | - |
| ISO 18273 | S Al 2319 (AlCu6MnZrTi) | F-Nr | 25 |
| EN 573.3 | EN AW-AlCu6Mn | Mat-Nr | - |

GENERAL DESCRIPTION

Primarily used where weld joints are capable of being heat treated to high strength.
Provides higher strength and better ductility than 4xxx filler alloys when welding on 2xxx base materials
Provides superior resistance to stress corrosion cracking where high temperature properties are required

WELDING POSITIONS (ISO/ASME)



PA/1G



PB/2F



PC/2G



PD/4F



PE/4G



PF/3Gu

SHIELDING GASES (ACC. ISO 14175)

| | |
|-----------|---------------------|
| I1 | Inert gas Ar (100%) |
| Flow rate | 14.2 - 23.6L/min |

CHEMICAL COMPOSITION (W%) TYPICAL WIRE

| Al | Si | Fe | Cu | Mn | Mg | Cr | Zn | Ti | Be |
|------|----------|----------|---------|---------|-----------|----|----------|---------|-------------|
| bal. | max. 0.2 | max. 0.3 | 5.8-6.8 | 0.2-0.4 | max. 0.02 | - | max. 0.1 | 0.1-0.2 | max. 0.0003 |

Notes : Unspecified elements should not exceed a total of 0.15%

MECHANICAL PROPERTIES, TYPICAL, ALL WELD METAL

| | Shielding gas | Condition | Yield strength (N/mm ²) | Tensile strength (N/mm ²) | Elongation (%) |
|----------------|---------------|-----------|-------------------------------------|---------------------------------------|----------------|
| Typical values | I1 | AW | 160-180 | 240-270 | Approx. 3 |

PHYSICAL PROPERTIES

| | |
|---------------|--|
| Melting range | : 543 - 643°C |
| Density | : approximately 2768 kg/m ³ |

APPLICATIONS

Aircraft applications
Spacecraft industry

PACKAGING AND AVAILABLE SIZES

| Diameter (mm) | 0.8 | 1.0 | 1.2 | 1.6 |
|--------------------------------------|-----|-----|-----|-----|
| 7.26 kg spool S300 | X | X | X | X |
| 7.0 kg spool BS300 | X | X | X | X |
| Other sizes and packaging on request | | | | |

Superglaze® MIG 2319 rev. C-EN01-01/02/16

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SuperGlaze® MIG 4043

CLASSIFICATION

| | | | |
|------------------|--------------------|---------------|--------|
| AWS 5.10 | ER4043 | A-Nr | - |
| ISO 18273 | S Al 4043A (AlSi5) | F-Nr | 23 |
| EN 573.3 | EN AW-AlSi5 | Mat-Nr | 3.2245 |

GENERAL DESCRIPTION

Designed for welding heat treatable base alloys and more specifically 6xxx Series Alloys
 Lower melting point and fluidity than 5xxx series filler alloys
 Low sensitivity to weld cracking with 6xxx base alloys
 Suitable for sustained elevated temperature service. i.e. above 650°C

WELDING POSITIONS (ISO/ASME)



PA/1G



PB/2F



PC/2G



PD/4F



PE/4G



PF/3Gu

SHIELDING GASES (ACC. ISO 14175)

| | |
|------------------|---------------------|
| I1 | Inert gas Ar (100%) |
| Flow rate | 14.2 - 23.6L/min |

APPROVALS

| | | |
|------------|-----------|------------|
| ABS | DB | TÜV |
| + | + | + |

CHEMICAL COMPOSITION (W%) TYPICAL WIRE

| Al | Si | Fe | Cu | Mn | Mg | Cr | Zn | Ti | Be |
|------|---------|----------|----------|-----------|-----------|----|----------|----------|-------------|
| bal. | 4.5-6.0 | max. 0.6 | max. 0.3 | max. 0.05 | max. 0.05 | - | max. 0.1 | max. 0.2 | max. 0.0003 |

Notes : Unspecified elements should not exceed a total of 0.15%

MECHANICAL PROPERTIES, TYPICAL, ALL WELD METAL

| | Shielding gas | Condition | Yield strength (N/mm ²) | Tensile strength (N/mm ²) | Elongation (%) |
|-----------------------|---------------|-----------|-------------------------------------|---------------------------------------|----------------|
| Typical values | I1 | AW | 20-40 | 120-165 | 3-18 |

PHYSICAL PROPERTIES

| | |
|----------------------|--|
| Melting range | : 573 - 625°C |
| Density | : approximately 2680 kg/m ³ |

APPLICATIONS

For welding 6XXX alloys, and most casting alloys
 Automotive components such as frame and drive shafts
 Bicycle frames

PACKAGING AND AVAILABLE SIZES

| Diameter (mm) | 0.8 | 0.9 | 1.0 | 1.2 | 1.6 | 2.4 | Other sizes and packaging on request |
|---------------------------|-----|-----|-----|-----|-----|-----|--------------------------------------|
| 0.5 kg plastic spool S100 | X | | X | X | X | | |
| 7.26 kg spool S300 | X | | X | X | X | X | |
| 7.0 kg spool BS300 | X | | X | X | X | X | |
| 23-27 kg wooden reel | | | X | X | X | X | |
| 125kg Gem-Pak | | X | | X | X | | |
| 159kg wooden reel | | | X | X | X | X | |
| 227 kg wooden reel | | | X | X | X | X | |

Superglaze® MIG 4043: rev. C-EN24-01/02/16

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SuperGlaze® MIG 4047

CLASSIFICATION

| | | | |
|-----------|--------------------|--------|--------|
| AWS 5.10 | ER4047 | A-Nr | - |
| ISO 18273 | S Al 4047 [AlSi12] | F-Nr | 23 |
| EN 573.3 | EN AW-AlCu6Mn | Mat-Nr | 3.2585 |

GENERAL DESCRIPTION

Lower melting point and higher fluidity than 4043 wires

Can be used as a substitute for 4043 to increase silicon content in the weld metal and minimize hot cracking and produce higher fillet weld shear strength

Can be used as a brazing alloy

WELDING POSITIONS (ISO/ASME)



PA/1G



PB/2F



PC/2G



PD/4F



PE/4G



PF/3Gu

SHIELDING GASES (ACC. ISO 14175)

| | |
|-----------|---------------------|
| It | Inert gas Ar (100%) |
| Flow rate | 14.2 - 23.6L/min |

CHEMICAL COMPOSITION (W%) TYPICAL WIRE

| Al | Si | Fe | Cu | Mn | Mg | Cr | Zn | Ti | Be |
|------|-------|----------|-----------|-----------|------|----|-----------|----|-------------|
| bal. | 11-13 | max. 0.8 | max. 0.30 | max. 0.15 | 0.10 | 0 | max. 0.20 | 0 | max. 0.0003 |

Notes : Unspecified elements should not exceed a total of 0.15%

MECHANICAL PROPERTIES, TYPICAL, ALL WELD METAL

| | Shielding gas | Condition | Yield strength [N/mm ²] | Tensile strength [N/mm ²] | Elongation [%] |
|----------------|---------------|-----------|-------------------------------------|---------------------------------------|----------------|
| Typical values | It | AW | 60-80 | 130-190 | 5-20 |

PHYSICAL PROPERTIES

Melting range : 573 - 585°C

Density : approximately 2680 kg/m³

APPLICATIONS

For welding 6XXX alloys, and most casting alloys
Cryogenic tanks
Automotive components, radiators and air conditioning

PACKAGING AND AVAILABLE SIZES

| Diameter [mm] | 0.8 | 1.0 | 1.2 | 1.6 | 2.4 | Other sizes and packaging on request |
|---------------------------|-----|-----|-----|-----|-----|--------------------------------------|
| 0.5 kg plastic spool S100 | X | X | X | X | | |
| 7.26 kg spool S300 | X | X | X | X | X | |
| 7.0 kg spool BS300 | X | X | X | X | X | |
| 23-27 kg wooden reel | | X | X | X | X | |
| 136 kg Accupak | | | X | X | | |
| 159kg wooden reel | | X | X | X | X | |
| 227 kg wooden reel | | X | X | X | X | |

Superglaze® MIG 5087: rev. C-EN03-01/02/16

SuperGlaze® MIG 5087

CLASSIFICATION

| | | | |
|-----------|--------------------------------------|---------------|--------|
| | | A-Nr | - |
| ISO 18273 | S Al 5087 (AlMg _{4,5} MnZr) | F-Nr | 22 |
| EN 573.3 | EN AW-AlMg _{4,5} MnZr | Mat-Nr | 3.3546 |

GENERAL DESCRIPTION

Designed to meet the tensile strength requirements of high magnesium alloys
For base metals with a max. of 5% Mg
The presence of Zirconium produces a fine-grained weld metal structure
Reduced tendency of solidification cracking in highly restrained welds

WELDING POSITIONS (ISO/ASME)



PA/1G



PB/2F



PC/2G



PD/4F



PE/4G



PF/3Gu

SHIELDING GASES (ACC. ISO 14175)

| | |
|------------------|--------------------------|
| I1 | Inert gas Ar (100%) |
| I3 | Inert gas Ar+ 0.5-95% He |
| Flow rate | 14.2 - 23.6L/min |

APPROVALS

| | | | | |
|----|----|----|-----|-------|
| GL | LR | DB | TÜV | WlWeb |
|----|----|----|-----|-------|

| | | | | |
|---|---|---|---|---|
| + | + | + | + | + |
|---|---|---|---|---|

**(Valid for I1 and I3 gases)*

CHEMICAL COMPOSITION (W%) TYPICAL WIRE

| Al | Si | Fe | Cu | Mn | Mg | Cr | Zn | Ti | Zr | Be |
|------|-----------|----------|-----------|---------|---------|-----------|-----------|-----------|-----------|-------------|
| bal. | max. 0.25 | max. 0.4 | max. 0.05 | 0.7-1.1 | 4.5-5.2 | 0.05-0.25 | max. 0.25 | max. 0.15 | 0.10-0.20 | max. 0.0003 |

Notes : Unspecified elements should not exceed a total of 0.15%

MECHANICAL PROPERTIES, TYPICAL, ALL WELD METAL

| | Shielding gas | Condition | Yield strength [N/mm ²] | Tensile strength [N/mm ²] | Elongation [%] |
|----------------|---------------|-----------|-------------------------------------|---------------------------------------|----------------|
| Typical values | I1 | AW | 125-140 | 275-300 | 17-30 |

PHYSICAL PROPERTIES

Melting range : 568 - 638°C
Density : approximately 2660 kg/m³

APPLICATIONS

Marine fabrication and repair
Cryogenic tanks
Shipbuilding and other high strength structural aluminium applications

Railway Industry
Automotive Industry
Trailer Industry and Offshore

PACKAGING AND AVAILABLE SIZES

| Diameter (mm) | 0.8 | 1.0 | 1.2 | 1.6 | 2.4 | Other sizes and packaging on request |
|---------------------------|-----|-----|-----|-----|-----|--------------------------------------|
| 0.5 kg plastic spool S100 | X | X | X | X | | |
| 726 kg spool S300 | X | X | X | X | X | |
| 70 kg spool B5300 | X | X | X | X | X | |
| 23-27 kg wooden reel | | X | X | X | X | |
| 136 kg Accupak | | | X | X | | |
| 159kg wooden reel | | X | X | X | X | |
| 227 kg wooden reel | | X | X | X | X | |

Superglaze® MIG 5087: rev. C-EN03-01/0216

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Fumes: Safety Data Sheets (SDS) are available on our website.

SuperGlaze® MIG 5183

CLASSIFICATION

| | | | |
|------------------|-----------------------------|---------------|--------|
| AWS 5.10 | ER5183 | A-Nr | - |
| ISO 18273 | S Al 5183 (AlMg4.5Mn0.7(A)) | F-Nr | 22 |
| EN 573.3 | EN AW-AlMg4.5Mn | Mat-Nr | 3.3548 |

GENERAL DESCRIPTION

Designed to meet the tensile strength requirements of magnesium alloys
For base materials 5083 and 5654

WELDING POSITIONS (ISO/ASME)



PA/1G



PB/2F



PC/2G



PD/4F



PE/4G



PF/3Gu

SHIELDING GASES (ACC. ISO 14175)

| | |
|------------------|--------------------------|
| I1 | Inert gas Ar (100%) |
| I3 | Inert gas Ar+ 0.5-95% He |
| Flow rate | 14.2 - 23.6L/min |

APPROVALS

| | | | | | | | |
|------------|-----------|-----------|-----------|------------|------------|-----------|--------------|
| ABS | GL | LR | DB | TÜV | DNV | BV | WIWeb |
| + | + | + | + | + | + | + | + |

CHEMICAL COMPOSITION (W%) TYPICAL WIRE

| | | | | | | | | | |
|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-------------|
| Al | Si | Fe | Cu | Mn | Mg | Cr | Zn | Ti | Be |
| bal. | max. 0.4 | max. 0.4 | max. 0.1 | 0.5-1.0 | 4.3-5.2 | 0.05-0.25 | max. 0.25 | max. 0.15 | max. 0.0003 |

Notes : Unspecified elements should not exceed a total of 0.15%

MECHANICAL PROPERTIES, TYPICAL, ALL WELD METAL

| | Shielding gas | Condition | Yield strength (N/mm ²) | Tensile strength (N/mm ²) | Elongation (%) |
|-----------------------|---------------|-----------|-------------------------------------|---------------------------------------|----------------|
| Typical values | I1 | AW | 125-165 | 270-290 | 16-25 |

PHYSICAL PROPERTIES

| | |
|----------------------|--|
| Melting range | : 568 - 638°C |
| Density | : approximately 2660 kg/m ³ |

APPLICATIONS

| | |
|--|-------------------------------|
| Marine fabrication and repair | Military Industry |
| Cryogenic tanks | Railway & Automotive Industry |
| Shipbuilding and other high strength structural aluminium applications | Trailer Industry and Offshore |

PACKAGING AND AVAILABLE SIZES

| Diameter (mm) | 0.8 | 1.0 | 1.2 | 1.6 | 2.4 | Other sizes and packaging on request |
|----------------------------------|-----|-----|-----|-----|-----|--------------------------------------|
| 0.5 kg plastic spool S100 | X | X | X | X | | |
| 726 kg spool S300 | X | X | X | X | X | |
| 70 kg spool BS300 | X | X | X | X | X | |
| 23-27 kg wooden reel | | X | X | X | X | |
| 136 kg Accupak | | | | X | | |
| 159kg wooden reel | | X | X | X | X | |
| 227 kg wooden reel | | X | X | X | X | |

Superglaze® MIG 5183: rev. C-EN24-01/02/16

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Fumes: Safety Data Sheets (SDS) are available on our website.

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SuperGlaze® MIG 5356

CLASSIFICATION

| | | | |
|-----------|------------------------|--------|--------|
| AWS 5.10 | ER5356 | A-Nr | - |
| ISO 18273 | S Al 5356 (AlMg5Cr(A)) | F-Nr | 22 |
| EN 573.3 | EN AW-AlMg5 | Mat-Nr | 3.3556 |

GENERAL DESCRIPTION

General purpose filler alloy for welding 5XXX series alloys when 276 MPa tensile strength is not required.
Excellent colour match after anodizing

WELDING POSITIONS (ISO/ASME)



PA/1G

PB/2F

PC/2G

PD/4F

PE/4G

PF/3Gu

SHIELDING GASES (ACC. ISO 14175)

| | |
|-----------|--------------------------|
| I1 | Inert gas Ar (100%) |
| I3 | Inert gas Ar+ 0.5-95% He |
| Flow rate | 14.2 - 23.6L/min |

APPROVALS

| | | | | | | |
|-----|----|----|----|-----|-----|----|
| ABS | GL | LR | DB | TÜV | DNV | BV |
| + | + | + | + | + | + | + |

CHEMICAL COMPOSITION (W%) TYPICAL WIRE

| Al | Si | Fe | Cu | Mn | Mg | Cr | Zn | Ti | Be |
|------|-----------|----------|----------|----------|---------|-----------|----------|----------|-------------|
| bal. | max. 0.25 | max. 0.4 | max. 0.1 | 0.05-0.2 | 4.5-5.5 | 0.05-0.20 | max. 0.1 | 0.06-0.2 | max. 0.0003 |

Notes : Unspecified elements should not exceed a total of 0.15%

MECHANICAL PROPERTIES, TYPICAL, ALL WELD METAL

| | Shielding gas | Condition | Yield strength (N/mm ²) | Tensile strength (N/mm ²) | Elongation [%] |
|----------------|---------------|-----------|-------------------------------------|---------------------------------------|----------------|
| Typical values | I1 | AW | 110-120 | 240-296 | 17-26 |

PHYSICAL PROPERTIES

| | |
|---------------|--|
| Melting range | : 562 - 633°C |
| Density | : approximately 2640 kg/m ³ |

APPLICATIONS

Structural frames in the shipbuilding industry
Furniture. Storage tanks
Railway industry

Automotive and trailer industry
Formed truck panels
Automotive bumpers and supports

PACKAGING AND AVAILABLE SIZES

| Diameter (mm) | 0.8 | 0.9 | 1.0 | 1.2 | 1.6 | 2.4 | Other sizes and packaging on request |
|---------------------------|-----|-----|-----|-----|-----|-----|--------------------------------------|
| 0.5 kg plastic spool S100 | X | | X | X | X | | |
| 7.26 kg spool S300 | X | | X | X | X | X | |
| 7.0 kg spool BS300 | X | | X | X | X | X | |
| 23-27 kg wooden reel | | | X | X | X | X | |
| 136kg Gem-Pak | | X | | X | X | | |
| 159kg wooden reel | | | X | X | X | X | |
| 227 kg wooden reel | | | X | X | X | X | |

Superglaze® MIG 5356: rev. C-EN24-01/02/16

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SuperGlaze® MIG 5356 TM™

CLASSIFICATION

| | | | |
|------------------|---------------------|-------------|----|
| AWS 5.10 | ER5356 | A-Nr | - |
| ISO 18273 | S Al 5356 (AlMg5Cr) | F-Nr | 22 |

GENERAL DESCRIPTION

Superior Wetting – Unparalleled bead profile and appearance which are critical for groove and fillet welds on aluminium trailer beds.
Enhanced Puddle Clarity and Control
Maximum Arc Performance and Stability

WELDING POSITIONS (ISO/ASME)



PA/1G

PB/2F

PC/2G

PD/4F

PE/4G

PF/3Gu

SHIELDING GASES (ACC. ISO 14175)

| | |
|------------------|--------------------------|
| I1 | Inert gas Ar (100%) |
| I3 | Inert gas Ar+ 0.5-95% He |
| Flow rate | 14.2 - 23.6L/min |

APPROVALS

| | | |
|-----------|------------|------------|
| DB | TÜV | CWB |
| + | + | + |

CHEMICAL COMPOSITION (W%) TYPICAL WIRE

| Al | Si | Fe | Cu | Mn | Mg | Cr | Zn | Ti | Be |
|------|-----------|----------|----------|----------|---------|-----------|----------|----------|-------------|
| bal. | max. 0.25 | max. 0.4 | max. 0.1 | 0.05-0.2 | 4.5-5.5 | 0.05-0.20 | max. 0.1 | 0.06-0.2 | max. 0.0008 |

Notes : Unspecified elements should not exceed a total of 0.15%

MECHANICAL PROPERTIES, TYPICAL, ALL WELD METAL

| | Shielding gas | Condition | Yield strength (N/mm ²) | Tensile strength (N/mm ²) | Elongation (%) |
|-----------------------|---------------|-----------|-------------------------------------|---------------------------------------|----------------|
| Typical values | I1 | AW | 110-120 | 240-296 | 17-26 |

PHYSICAL PROPERTIES

| | |
|----------------------|--|
| Melting range | : 562 - 633°C |
| Density | : approximately 2640 kg/m ³ |

APPLICATIONS

High speed groove welds on formed truck panels
Multi-pass fillet and lap welds on 6XXX series base materials
Robotic fillet welds on trailer tanks requiring minimal post-weld clean up

PACKAGING AND AVAILABLE SIZES

| Diameter (mm) | 0.9 | 1.2 | 1.6 | Other sizes and packaging on request |
|--------------------------|-----|-----|-----|--------------------------------------|
| 70 kg spool BS300 | X | X | X | |
| 136kg Gem-Pak | X | X | X | |

Superglaze® MIG 5356TM™: rev. C-EN02-01/02/16

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SuperGlaze® MIG 5556

CLASSIFICATION

| | | | |
|-----------|-----------------------|------|----|
| AWS 5.10 | ER5556 | A-Nr | - |
| ISO 18273 | S Al 5556 (AlMg5MnTi) | F-Nr | 22 |

GENERAL DESCRIPTION

Contains Increased amounts of magnesium and manganese.
Provides weld deposits matching tensile strengths for the 5xxx series alloys such as 5083 and 5684
The weld metal is sea water resistant

WELDING POSITIONS (ISO/ASME)



PA/1G

PB/2F

PC/2G

PD/4F

PE/4G

PF/3Gu

SHIELDING GASES (ACC. ISO 14175)

| | |
|-----------|--------------------------|
| I1 | Inert gas Ar (100%) |
| I3 | Inert gas Ar+ 0.5-95% He |
| Flow rate | 14.2 - 23.6L/min |

APPROVALS

ABS

+

CHEMICAL COMPOSITION (W%) TYPICAL WIRE

| Al | Si | Fe | Cu | Mn | Mg | Cr | Zn | Ti | Be |
|------|-----------|----------|----------|---------|---------|-----------|-----------|-----------|-------------|
| bal. | max. 0.25 | max. 0.4 | max. 0.1 | 0.5-1.0 | 4.7-5.5 | 0.05-0.20 | max. 0.25 | 0.05-0.20 | max. 0.0003 |

Notes : Unspecified elements should not exceed a total of 0.15%

MECHANICAL PROPERTIES, TYPICAL, ALL WELD METAL

| | Shielding gas | Condition | Yield strength (N/mm ²) | Tensile strength (N/mm ²) | Elongation (%) |
|----------------|---------------|-----------|-------------------------------------|---------------------------------------|----------------|
| Typical values | I1 | AW | 125-145 | 275-295 | 17-25 |

PHYSICAL PROPERTIES

Melting range : 562 - 633°C
Density : approximately 2660 kg/m³

APPLICATIONS

Structural frames in the shipbuilding industry
Furnitures. Storage tanks
Railway Industry

Automotive and trailer Industry
Formed truck panels
Automotive bumpers and supports

PACKAGING AND AVAILABLE SIZES

| Diameter (mm) | 0.8 | 1.0 | 1.2 | 1.6 | 2.4 | Other sizes and packaging on request |
|---------------------------|-----|-----|-----|-----|-----|--------------------------------------|
| 0.5 kg plastic spool S100 | X | X | X | X | | |
| 726 kg spool S300 | X | X | X | X | X | |
| 70 kg spool BS300 | X | X | X | X | X | |
| 23-27 kg wooden reel | | X | X | X | X | |
| 136 kg Accupak | | | X | X | | |
| 159kg wooden reel | | X | X | X | X | |
| 227 kg wooden reel | | X | X | X | X | |

Superglaze® MIG 5556: rev. C-EN02-01/02/16

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Fumes: Safety Data Sheets (SDS) are available on our website.

SuperGlaze® MIG 5556A

CLASSIFICATION

| | | | |
|-----------|----------------------|------|----|
| ISO 18273 | S Al 5556A (AlMg5Mn) | A-Nr | - |
| EN 573.3 | EN AW AlMg5Mn | F-Nr | 22 |

GENERAL DESCRIPTION

High Magnesium alloyed wire

The elements are controlled to obtain increased weld strength over the 5356 alloy

Good ductility and improved crack resistance

WELDING POSITIONS (ISO/ASME)



PA/1G



PB/2F



PC/2G



PD/4F



PE/4G



PF/3Gu

SHIELDING GASES (ACC. ISO 14175)

| | |
|-----------|--------------------------|
| I1 | Inert gas Ar (100%) |
| I3 | Inert gas Ar+ 0.5-95% He |
| Flow rate | 14.2 - 23.6L/min |

CHEMICAL COMPOSITION (W%) TYPICAL WIRE

| Al | Si | Fe | Cu | Mn | Mg | Cr | Zn | Ti | Be |
|------|-----------|----------|----------|---------|---------|-----------|----------|-----------|-------------|
| bal. | max. 0.25 | max. 0.4 | max. 0.1 | 0.6-1.0 | 5.0-5.5 | 0.05-0.20 | max. 0.2 | 0.05-0.20 | max. 0.0003 |

Notes : Unspecified elements should not exceed a total of 0.15%

MECHANICAL PROPERTIES, TYPICAL, ALL WELD METAL

| | Shielding gas | Condition | Yield strength (N/mm ²) | Tensile strength (N/mm ²) | Elongation % |
|----------------|---------------|-----------|-------------------------------------|---------------------------------------|--------------|
| Typical values | I1 | AW | 125-140 | 275-300 | 15-17 |

PHYSICAL PROPERTIES

Melting range : 562 - 633°C

Density : approximately 2660 kg/m³

APPLICATIONS

Aircraft and Military Industry

PACKAGING AND AVAILABLE SIZES

| Diameter (mm) | 0.8 | 1.0 | 1.2 | 1.6 | 2.4 |
|---------------------------|-----|-----|-----|-----|-----|
| 0.5 kg plastic spool S100 | X | X | X | X | |
| 726 kg spool S300 | X | X | X | X | X |
| 7.0 kg spool BS300 | X | X | X | X | X |
| 23-27 kg wooden reel | | X | X | X | X |
| 136 kg Accupak | | | X | X | |
| 159kg wooden reel | | X | X | X | X |
| 227 kg wooden reel | | X | X | X | X |

Other sizes and packaging on request

SuperGlaze® MIG 5556A: rev. C-EN02-01/02/16

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LINCOLN
ELECTRIC
THE WELDING EXPERTS®

SuperGlaze® MIG 5754

CLASSIFICATION

| | | | |
|-----------|-------------------|---------------|--------|
| | | A-Nr | - |
| ISO 18273 | S Al 5754 (AlMg3) | F-Nr | 22 |
| EN 573.3 | EN AW AlMg3 | Mat-Nr | 3.3536 |

GENERAL DESCRIPTION

Magnesium alloyed aluminium for welding of alloys with a maximum of 3.5% Mg
 Good corrosion resistance and excellent colour match after anodizing
 Suitable for a wide range of applications in general construction and structural industry

WELDING POSITIONS (ISO/ASME)



PA/1G

PB/2F

PC/2G

PD/4F

PE/4G

PF/3Gu

SHIELDING GASES (ACC. ISO 14175)

| | |
|------------------|--------------------------|
| I1 | Inert gas Ar (100%) |
| I3 | Inert gas Ar+ 0.5-95% He |
| Flow rate | 14.2 - 23.6L/min |

APPROVALS

TÜV

+

CHEMICAL COMPOSITION (W%) TYPICAL WIRE

| Al | Si | Fe | Cu | Mn | Mg | Cr | Zn | Ti | Be | Mn+Cu |
|------|----------|----------|----------|----------|---------|----------|-----------|-----------|-------------|----------|
| bal. | max. 0.4 | max. 0.4 | max. 0.1 | max. 0.5 | 2.6-3.6 | max. 0.3 | max. 0.20 | max. 0.15 | max. 0.0003 | 0.10-0.6 |

Notes: Unspecified elements should not exceed a total of 0.15%

MECHANICAL PROPERTIES, TYPICAL, ALL WELD METAL

| | Shielding gas | Condition | Yield strength (N/mm ²) | Tensile strength (N/mm ²) | Elongation [%] |
|-----------------------|---------------|-----------|-------------------------------------|---------------------------------------|----------------|
| Typical values | I1 | AW | 70-80 | 180-200 | 15-20 |

PHYSICAL PROPERTIES

Melting range : 580 - 642°C

Density : approximately 2660 kg/m³

APPLICATIONS

General Construction Industry
 Automotive bumpers and supports

PACKAGING AND AVAILABLE SIZES

| Diameter (mm) | 0.8 | 1.0 | 1.2 | 1.6 | 2.4 | |
|---------------------------|-----|-----|-----|-----|-----|--------------------------------------|
| 0.5 kg plastic spool S100 | X | X | X | X | | Other sizes and packaging on request |
| 726 kg spool S300 | X | X | X | X | X | |
| 70 kg spool BS300 | X | X | X | X | X | |
| 23-27 kg wooden reel | | X | X | X | X | |
| 136 kg Accupak | | | X | X | | |
| 159kg wooden reel | | X | X | X | X | |
| 227 kg wooden reel | | X | X | X | X | |

Superglaze® MIG 5754: rev. C-EN02-01/02/16

LNM 420FM

CLASSIFICATION

EN 14700 S Fe8 Mat-Nr 1.4718

GENERAL DESCRIPTION

Solid wire for wear resistant overlays
 High resistance against corrosion, abrasion and impact deformation
 Hardness approximately 55-60HRC
 Optimal weldability
 Ferritic and martensitic structure

WELDING POSITIONS (ISO/ASME)



PA/1G



PB/2F



PC/2G



PD/4F



PE/4G



PF/3Gu

SHIELDING GASES (ACC. ISO 14175)

M21 : Mixed gas Ar+ >15-25% CO₂

CHEMICAL COMPOSITION (W%) TYPICAL WIRES

| C | Mn | Cr | Si |
|-----|-----|-----|-----|
| 0.5 | 0.4 | 9.0 | 3.0 |

MECHANICAL PROPERTIES, TYPICAL, ALL WELD METAL

2 Layers, AW
 heat resistant to 450°C

Typical hardness values
 : approx. 60 HRC

APPLICATION

Dies
 Matrix
 Parts for agricultural machinery
 Transport rolls
 Sand pumps

PACKAGING AND AVAILABLE SIZES

| Diameter (mm) | 1.0 | 1.2 |
|--------------------------------------|-----|-----|
| 15 kg spool B300 | X | X |
| Other sizes and packaging on request | | |

LNM 420FM; rev. C-EN24-01/02/16

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LINCOLN
ELECTRIC
 THE WELDING EXPERTS®

LNM 4M

CLASSIFICATION

EN 14700 S Fe2 Mat-Nr 1.8405

GENERAL DESCRIPTION

Solid wire for hardfacing applications
 Hardness approximately HB 325-375
 Optimal welding characteristics
 Martensitic structure

WELDING POSITIONS (ISO/ASME)



PA/1G



PB/2F



PC/2G



PD/4F



PE/4G



PF/3Gu

SHIELDING GASES (ACC. ISO 14175)

M21 : Mixed gas Ar+ >15-25% CO₂

CHEMICAL COMPOSITION (W%) TYPICAL WIRES

| C | Mn | Si | Cr |
|-----|-----|-----|-----|
| 0.7 | 1.9 | 0.5 | 1.0 |

MECHANICAL PROPERTIES, TYPICAL, ALL WELD METAL

2 Layers, AW
 Typical hardness values
 : approx. 38 HRC

APPLICATION

Forming dies
 Dies
 Impact resistance tools

PACKAGING AND AVAILABLE SIZES

Diameter (mm) 1.2

15 kg spool B300 X

Other sizes and packaging on request

LNM 4M: rev. C-EN24-01/02/16