

CATALOG

# Pressure Transmitter AT5020



- SIL2/3 certification
- Accuracy up to  $\pm 0.05\%$  FS
- 10-year stability of  $\pm 0.2\%$  of URL
- -100 kPa to 40 MPa (minimum range 0 to 1kPa)
- Intuitive interface and built-in buttons for quick commissioning of the device
- SS316L/HC/Tantalum/SS316L coated with PTFE/SS316L gold plated /Inconel 625, etc.
- HART 7.0/Modbus-RTU and others
- Multiple standard process connections, as well as filler fluids, enabling connection to various forms of piping, connection standards are according to EN, ASME/ANSI, GB, GOST, JIS etc.
- Optional gauge pressure, absolute pressure
- Convenient and user-friendly, wide options in forms and material
- Precision in measurement
- Exploration in our range of state-of-the-art pressure transmitters
- Features, specification and applications covered in detail
- **SIL, NACE, NEPSI, ATEX, CE, PMI, EN10204**

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## Product Overview

Pressure Transmitter  
AT5020

AT5020 monocrystalline silicon pressure transmitter is a high-performance pressure transmitter with internationally leading monocrystalline silicon sensor technology and patented packaging process. The monocrystalline silicon sensor is located at the top of the metal body, away from the contact surface of the medium, to achieve mechanical isolation and thermal isolation. The sintered glass integrated sensor leads achieve high-strength electrical insulation with a metal matrix, improving the electronic circuit's flexible performance and ability to withstand transient voltage protection. These monocrystalline silicon sensor packaging technologies ensure that AT5020 monocrystalline silicon pressure transmitter can handle complex chemical and mechanical loads, while providing strong electromagnetic interference resistance for demanding industrial environment applications.



## Main Parameters

- Monocrystalline silicon gauge pressure range: -100 kPa to 40 MPa (minimum range 0 to 1 kPa).
- Monocrystalline silicon absolute pressure range: 0 to 10 MPa (minimum range 0 to 20 kPa).
- Output signal: 4 to 20 mA and HART7, Modbus-RTU/RS485 and others.
- Reference accuracy:  $\pm 0.05\%$  FS. See specifications for details.

## Measuring Medium

Liquid, gas, steam and other medium which is suitable for wetted parts.

## Applications

Pressure, level

# Model Code

## Pressure Transmitter

| Model Type                      | Code | Description                                                                                   |
|---------------------------------|------|-----------------------------------------------------------------------------------------------|
| AT5020-                         |      | Pressure transmitter ( $\pm 0.05\%$ FS accuracy)                                              |
| Type                            | TG   | Monocrystalline silicon sensor (gauge pressure, -100 kPa to 40 MPa, minimum range 0 to 1 kPa) |
|                                 | TA   | Monocrystalline silicon sensor (absolute pressure, 0 to 10 MPa, minimum range 0 to 20 kPa)    |
| Range                           | 2    | 0 to 6 kPa (minimum range 0 to 1 kPa, $\pm 0.1\%$ accuracy)                                   |
|                                 | 3    | 0 to 40 kPa (0 to 40 kPa with the minimum range of 0 to 20 kPa absolute pressure)             |
|                                 | 4    | 0 to 250 kPa                                                                                  |
|                                 | 5    | 0 to 1 MPa                                                                                    |
|                                 | 6    | 0 to 3 MPa                                                                                    |
|                                 | 7    | 0 to 10 MPa                                                                                   |
|                                 | 8    | 0 to 40 MPa                                                                                   |
| Isolation diaphragms            | SS   | SS316L, silicon oil                                                                           |
|                                 | HS   | Hastelloy C, silicon oil                                                                      |
|                                 | GS   | SS316L, gold plated, silicone oil                                                             |
|                                 | X    | More optional materials                                                                       |
| Sealing method                  | W    | Stainless steel welded seals                                                                  |
| Electrical connection & housing | -E1  | Aluminum housing, polyurethane coating, 1/2 NPT F, cable entry                                |
|                                 | -E2  | Aluminum housing, polyurethane coating, M20 $\times$ 1.5 F, cable entry                       |
|                                 | -E3  | SS316 housing, 1/2 NPT F, cable entry                                                         |
|                                 | -E4  | SS316 housing, M20 $\times$ 1.5 F, cable entry                                                |
| Output signal                   | S7   | 24 V DC loop power supply, 4 to 20 mA, HART 7, two-wire                                       |
|                                 | R    | Modbus RTU, four-wire, 24 V DC loop power supply                                              |
| Display mode                    | M0   | Without display                                                                               |
|                                 | M5   | LCD with backlight display module, physical buttons and magnetic bar                          |
| Process connection              | -S6  | SS316 (excluding flange material)                                                             |
| Process connectors              | M1   | M20 $\times$ 1.5 M with $\Phi 3$ impulse hole, GB/T193-2003                                   |
|                                 | G1   | G1/2 M with $\Phi 3$ impulse hole, EN837                                                      |
|                                 | R1   | 1/2-14 NPT M with $\Phi 3$ impulse hole, ANSI/ASME B1.20.1                                    |
|                                 | H10  | HG/T 20592-2009 DN25 RF, PN10 to PN40 (straight thread and flange) SS304                      |
|                                 | H20  | HG/T 20592-2009 DN50 RF, PN10 to PN40 (straight thread and flange) SS304                      |
|                                 | H30  | HG/T 20592-2009 DN80 RF, PN10 (straight thread and flange) SS304                              |
|                                 | H31  | HG/T 20592-2009 DN80 RF, PN16 to PN40 (straight thread and flange) SS304                      |
|                                 | X    | Optional flange                                                                               |
| Mounting bracket                | -B04 | U and L bracket, 2" pipe                                                                      |
|                                 | NA   | Unavailable                                                                                   |

|                                     |     |                                                                                                                    |
|-------------------------------------|-----|--------------------------------------------------------------------------------------------------------------------|
| <b>Process connection accessory</b> | Z1  | M20×1.5 F with impulse pipe $\Phi 14 \times 2 \times 30$ mm, SS304                                                 |
|                                     | RG  | Syphon, M20 × 1.5 F to M20 × 1.5 M, SS304, applicable medium temperature -40 to 150°C                              |
|                                     | RP  | Heat sink, M20 × 1.5 F to M20 × 1.5 M, SS304, applicable medium temperature -40 to 150°C                           |
|                                     | LP  | Extra-long heat sink, two RP radiators stacked and connected in series, applicable medium temperature -40 to 315°C |
|                                     | NA  | Unavailable                                                                                                        |
| <b>Anti-explosion</b>               | d   | ExdbIICT6 Gb, NEPSI                                                                                                |
|                                     | i   | ExialICT4 Ga, NEPSI                                                                                                |
|                                     | NA  | Unavailable                                                                                                        |
| <b>Special treatment</b>            | T   | Degreasing (removing oil and grease from product surface)                                                          |
|                                     | NA  | Unavailable                                                                                                        |
| <b>Extended warranty</b>            | 2W  | 2-year warranty                                                                                                    |
|                                     | 3W  | 3-year warranty                                                                                                    |
| <b>Value manifold</b>               | 2M  | Two-way manifold                                                                                                   |
| <b>Subsidiary requirements</b>      | E   | English stainless steel nameplate                                                                                  |
|                                     | R   | Russian stainless steel nameplate                                                                                  |
|                                     | E5  | Anti-explosion cable gland, SS316, 1/2 NPT, cable diameter 6 to 8 mm, optional 11 to 17 mm                         |
|                                     | E6  | Anti-explosion cable gland, SS316, M20 × 1.5, cable diameter 6 to 8 mm, optional 11 to 17 mm                       |
|                                     | E7  | Nickel plated brass cable gland, 1/2 NPT, cable diameter 6 to 8 mm, optional 11 to 17 mm                           |
|                                     | E8  | Nickel plated brass cable gland, M20 × 1.5, cable diameter 6 to 8 mm, optional 11 to 17 mm                         |
| <b>Report</b>                       | R   | Calibration certificate                                                                                            |
| <b>Special certifications</b>       | SIL | SIL                                                                                                                |
|                                     | Ad  | ATEX Exd                                                                                                           |
|                                     | Ai  | ATEX Exia                                                                                                          |
|                                     | CE  | Certificate of Compliance                                                                                          |
|                                     | Id  | IEC Exd                                                                                                            |
|                                     | li  | IEC Exia                                                                                                           |
|                                     | N   | NACE                                                                                                               |
|                                     | P   | PMI certificate                                                                                                    |
|                                     | E   | EN10204                                                                                                            |
| <b>Alarm output</b>                 | HH  | NAMUR NE43 analog output, high alarm, 20.8 mA                                                                      |
|                                     | LL  | NAMUR NE43 analog output, low alarm, 3.8 mA                                                                        |
|                                     | NA  | Unavailable                                                                                                        |

## Product Overview

### Single Flange Pressure Transmitter AT5020

With internationally leading monocrystalline silicon sensor technology and patented packaging process, AT5020 single flange pressure transmitter is a high-performance pressure transmitter. The monocrystalline silicon sensor is located at the top of the metal body, away from the contact surface of the medium, to achieve mechanical isolation and thermal isolation. The sintered glass integrated sensor leads achieve high-strength electrical insulation with a metal matrix, improving the electronic circuit's flexible performance and ability to withstand transient voltage protection. The monocrystalline silicon sensor packaging technologies ensure that AT5020 single flange pressure transmitter can handle complex chemical and mechanical loads while providing strong electromagnetic interference resistance for demanding industrial environment applications.



## Main Parameters

- Monocrystalline silicon gauge pressure range: -100 kPa to 25 MPa (minimum range 0 to 10kPa).
- Monocrystalline silicon absolute pressure range: 0 to 10 MPa (minimum range 0 to 20 kPa).
- Output signal: 4 to 20 mA and HART7, Modbus -RTU/RS485 and others.
- Reference accuracy:  $\pm 0.2\%$  FS upper range limit,  $\pm 0.1\%$  FS upper range limit (optional). See specifications for details.

## Measuring Medium

Liquid, gas, steam and other medium which is suitable for wetted parts.

## Applications

Pressure, level

# Model Code

## DN25 Single Flange

| Model Type                      | Code | Description                                                                                                            |
|---------------------------------|------|------------------------------------------------------------------------------------------------------------------------|
| AT5020-                         |      | DN25 single flange pressure transmitter ( $\pm 0.2\%$ FS accuracy)                                                     |
| Type                            | YTG  | Monocrystalline silicon sensor (gauge pressure, -100 kPa to 25 MPa, minimum range 0 to 10 kPa)                         |
|                                 | YTA  | Monocrystalline silicon sensor (absolute pressure, 0 kPa to 10 MPa, minimum range 0 to 20 kPa)                         |
| Range                           | 3    | 0 to 40 kPa with the minimum range of 0 to 10 kPa(0 to 40 kPa with the minimum range of 0 to 20 kPa absolute pressure) |
|                                 | 4    | 0 to 250 kPa                                                                                                           |
|                                 | 5    | 0 to 1 MPa                                                                                                             |
|                                 | 6    | 0 to 3 MPa                                                                                                             |
|                                 | 7    | 0 to 10 MPa                                                                                                            |
|                                 | 8    | 0 to 25 MPa                                                                                                            |
| Sealing method                  | W    | Stainless steel welded seals                                                                                           |
| Electrical connection & housing | -E1  | Aluminum housing, polyurethane coating, 1/2 NPT F, cable entry                                                         |
|                                 | -E2  | Aluminum housing, polyurethane coating, M20 $\times$ 1.5 F, cable entry                                                |
|                                 | -E3  | SS316 housing, 1/2 NPT F, cable entry                                                                                  |
|                                 | -E4  | SS316 housing, M20 $\times$ 1.5 F, cable entry                                                                         |
| Output signal                   | S7   | 24 V DC loop power supply, 4 to 20 mA, HART 7, two-wire                                                                |
|                                 | R    | Modbus RTU, four-wire, 24 V DC loop power supply                                                                       |
| Display mode                    | M0   | Without display                                                                                                        |
|                                 | M5   | LCD with backlight display module, physical buttons and magnetic bar                                                   |
| Process flange                  | -S4  | SS304                                                                                                                  |
|                                 | -S6  | SS316                                                                                                                  |
|                                 | -X   | More optional materials                                                                                                |
| Connection type                 | SC   | Standard connection, applicable medium temperature -25 to 85°C                                                         |
|                                 | HC   | Heat sink connection, applicable for medium temperature -40 to 150°C                                                   |
|                                 | LC   | Extra-long heat sink connection, applicable medium temperature -40 to 315°C                                            |
| Isolation fluid                 | S    | Normal temperature silicone oil, temperature range -40 to 205°C                                                        |
|                                 | H    | High temperature silicone oil, temperature range 0 to 315°C                                                            |
| Isolation diaphragms            | A    | SS316L                                                                                                                 |
|                                 | C    | Tantalum (SS316 for process connections, not available with capillary tube)                                            |
|                                 | P    | SS316 and PTFE coating (range $\geq 50$ kPa, not available with capillary tube)                                        |
|                                 | H    | Hastelloy C (SS316 for process connections, not available with capillary tube)                                         |
|                                 | G    | SS316L gold plated                                                                                                     |
|                                 | X    | More optional materials                                                                                                |

|                                |     |                                                                                              |
|--------------------------------|-----|----------------------------------------------------------------------------------------------|
| <b>Process connection</b>      | H10 | HG/T 20592-2009 DN25 RF, PN10 to PN40                                                        |
|                                | H11 | HG/T 20592-2009 DN25 RF, PN64                                                                |
|                                | H12 | HG/T 20592-2009 DN25 RF, PN100                                                               |
|                                | H13 | HG/T 20592-2009 DN25 RF, PN250                                                               |
|                                | X   | Optional flange                                                                              |
| <b>Anti-explosion</b>          | d   | ExdbIICT6 Gb, NEPSI                                                                          |
|                                | i   | ExialIICT4 Ga, NEPSI                                                                         |
|                                | NA  | Unavailable                                                                                  |
| <b>Special treatment</b>       | T   | Degreasing (removing oil and grease from product surface)                                    |
|                                | NA  | Unavailable                                                                                  |
| <b>Mounting bracket</b>        | B01 | U and L bracket, 2" pipe                                                                     |
|                                | NA  | Without bracket (optional when no capillary pipe)                                            |
| <b>Capillary</b>               | NA  | Capillary-free                                                                               |
|                                | 01  | 1 m capillary tube, PVC sheath and armored SS316                                             |
|                                | 02  | 2 m capillary tube, PVC sheath and armored SS316                                             |
|                                | 03  | 3 m capillary tube, PVC sheath and armored SS316                                             |
|                                | 04  | 4 m capillary tube, PVC sheath and armored SS316                                             |
|                                | 05  | 5 m capillary tube, PVC sheath and armored SS316                                             |
| <b>Extended warranty</b>       | 2W  | 2-year warranty                                                                              |
|                                | 3W  | 3-year warranty                                                                              |
| <b>Flushing ring</b>           | R25 | DN25, SS316, clamping type                                                                   |
| <b>Subsidiary requirements</b> | E   | English stainless steel nameplate                                                            |
|                                | R   | Russian stainless steel nameplate                                                            |
|                                | E5  | Anti-explosion cable gland, SS316, 1/2 NPT, cable diameter 6 to 8 mm, optional 11 to 17 mm   |
|                                | E6  | Anti-explosion cable gland, SS316, M20 × 1.5, cable diameter 6 to 8 mm, optional 11 to 17 mm |
|                                | E7  | Nickel plated brass cable gland, 1/2 NPT, cable diameter 6 to 8 mm, optional 11 to 17 mm     |
|                                | E8  | Nickel plated brass cable gland, M20 × 1.5, cable diameter 6 to 8 mm, optional 11 to 17 mm   |
| <b>Report</b>                  | R   | Calibration certificate                                                                      |
| <b>Special certifications</b>  | SIL | SIL                                                                                          |
|                                | Ad  | ATEX Exd                                                                                     |
|                                | Ai  | ATEX Exia                                                                                    |
|                                | CE  | Certificate of Compliance                                                                    |
|                                | Id  | IEC Exd                                                                                      |
|                                | Ii  | IEC Exia                                                                                     |
|                                | N   | NACE                                                                                         |
|                                | P   | PMI certificate                                                                              |
|                                | E   | EN10204                                                                                      |
| <b>Alarm output</b>            | HH  | NAMUR NE43 analog output, high alarm, 20.8mA                                                 |
|                                | LL  | NAMUR NE43 analog output, low alarm, 3.8 mA                                                  |
|                                | NA  | Unavailable                                                                                  |

# ModelCode

## DN50 Single Flange

| Model Type                                 | Code | Description                                                                                                             |
|--------------------------------------------|------|-------------------------------------------------------------------------------------------------------------------------|
| <b>AT5020-</b>                             |      | DN50 single flange pressure transmitter ( $\pm 0.2\%$ FS accuracy)                                                      |
| <b>Type</b>                                | YTG  | Monocrystalline silicon sensor (gauge pressure, -100 kPa to 25 MPa, minimum range 0 to 10kPa)                           |
|                                            | YTA  | Monocrystalline silicon sensor (absolute pressure, 0 kPa to 10 MPa, minimum range 0 to 20 kPa)                          |
| <b>Range</b>                               | 3    | 0 to 40 kPa with the minimum range of 0 to 10 kPa (0 to 40 kPa with the minimum range of 0 to 20 kPa absolute pressure) |
|                                            | 4    | 0 to 250 kPa                                                                                                            |
|                                            | 5    | 0 to 1 MPa                                                                                                              |
|                                            | 6    | 0 to 3 MPa                                                                                                              |
|                                            | 7    | 0 to 10 MPa                                                                                                             |
|                                            | 8    | 0 to 25 MPa                                                                                                             |
| <b>Sealing method</b>                      | W    | Stainless steel welded seals                                                                                            |
| <b>Electrical connection &amp; housing</b> | -E1  | Aluminum housing, polyurethane coating, 1/2 NPT F, cable entry                                                          |
|                                            | -E2  | Aluminum housing, polyurethane coating, M20 $\times$ 1.5 F, cable entry                                                 |
|                                            | -E3  | SS316 housing, 1/2 NPT F, cable entry                                                                                   |
|                                            | -E4  | SS316 housing, M20 $\times$ 1.5 F, cable entry                                                                          |
| <b>Output signal</b>                       | S7   | 24 V DC loop power supply, 4 to 20 mA, HART 7, two-wire                                                                 |
|                                            | R    | Modbus RTU, four-wire, 24 V DC loop power supply                                                                        |
| <b>Display mode</b>                        | M0   | Without display                                                                                                         |
|                                            | M5   | LCD with backlight display module, physical buttons and magnetic bar                                                    |
| <b>Process flange</b>                      | -S4  | SS304                                                                                                                   |
|                                            | -S6  | SS316                                                                                                                   |
|                                            | -X   | More optional materials                                                                                                 |
| <b>Connection type</b>                     | SC   | Standard connection, applicable medium temperature -25 to 85°C                                                          |
|                                            | HC   | Heat sink connection, applicable for medium temperature -40 to 150°C                                                    |
|                                            | LC   | Extra-long heat sink connection, applicable medium temperature -40 to 315°C                                             |
| <b>Isolation fluid</b>                     | S    | Normal temperature silicone oil, temperature range -40 to 205°C                                                         |
|                                            | H    | High temperature silicone oil, temperature range 0 to 315°C                                                             |
| <b>Isolation diaphragms</b>                | A    | SS316L                                                                                                                  |
|                                            | C    | Tantalum (SS316 for process connections)                                                                                |
|                                            | P    | SS316 and PTFE coating (range $\geq 50$ kPa)                                                                            |
|                                            | H    | Hastelloy C (SS316 for process connections)                                                                             |
|                                            | G    | SS316L gold plated                                                                                                      |
|                                            | X    | More optional materials                                                                                                 |
| <b>Process connection</b>                  | H20  | HG/T 20592-2009 DN50 RF, PN10 to PN40                                                                                   |
|                                            | H21  | HG/T 20592-2009 DN50 RF, PN64                                                                                           |
|                                            | H22  | HG/T 20592-2009 DN50 RF, PN100                                                                                          |
|                                            | H23  | HG/T 20592-2009 DN50 RF, PN250                                                                                          |
|                                            | X    | Optional flange                                                                                                         |

|                                |     |                                                                                              |
|--------------------------------|-----|----------------------------------------------------------------------------------------------|
| <b>Anti-explosion</b>          | d   | ExdbIICT6 Gb, NEPSI                                                                          |
|                                | i   | ExialICT4 Ga, NEPSI                                                                          |
|                                | NA  | Unavailable                                                                                  |
| <b>Special treatment</b>       | T   | Degreasing (removing oil and grease from product surface)                                    |
|                                | NA  | Unavailable                                                                                  |
| <b>Mounting bracket</b>        | B01 | U and L bracket, 2" pipe                                                                     |
|                                | NA  | Without bracket (optional when no capillary pipe)                                            |
| <b>Capillary</b>               | NA  | Capillary-free                                                                               |
|                                | 01  | 1 m capillary tube, PVC sheath and armored SS316                                             |
|                                | 02  | 2 m capillary tube, PVC sheath and armored SS316                                             |
|                                | 03  | 3 m capillary tube, PVC sheath and armored SS316                                             |
|                                | 04  | 4 m capillary tube, PVC sheath and armored SS316                                             |
|                                | 05  | 5 m capillary tube, PVC sheath and armored SS316                                             |
|                                | 06  | 6 m capillary tube, PVC sheath and armored SS316                                             |
|                                | 07  | 7 m capillary tube, PVC sheath and armored SS316                                             |
|                                | 08  | 8 m capillary tube, PVC sheath and armored SS316                                             |
|                                | 09  | 9 m capillary tube, PVC sheath and armored SS316                                             |
|                                | 10  | 10 m capillary tube, PVC sheath and armored SS316                                            |
| <b>Extended warranty</b>       | 2W  | 2-year warranty                                                                              |
|                                | 3W  | 3-year warranty                                                                              |
| <b>Flushing ring</b>           | R50 | DN50, SS316, clamping type                                                                   |
| <b>Subsidiary requirements</b> | E   | English stainless steel nameplate                                                            |
|                                | R   | Russian stainless steel nameplate                                                            |
|                                | E5  | Anti-explosion cable gland, SS316, 1/2 NPT, cable diameter 6 to 8 mm, optional 11 to 17 mm   |
|                                | E6  | Anti-explosion cable gland, SS316, M20 × 1.5, cable diameter 6 to 8 mm, optional 11 to 17 mm |
|                                | E7  | Nickel plated brass cable gland, 1/2 NPT, cable diameter 6 to 8 mm, optional 11 to 17 mm     |
|                                | E8  | Nickel plated brass cable gland, M20 × 1.5, cable diameter 6 to 8 mm, optional 11 to 17 mm   |
| <b>Report</b>                  | R   | Calibration certificate                                                                      |
| <b>Special certifications</b>  | SIL | SIL                                                                                          |
|                                | Ad  | ATEX Exd                                                                                     |
|                                | Ai  | ATEX Exia                                                                                    |
|                                | CE  | Certificate of Compliance                                                                    |
|                                | Id  | IEC Exd                                                                                      |
|                                | Ii  | IEC Exia                                                                                     |
|                                | N   | NACE                                                                                         |
|                                | P   | PMI certificate                                                                              |
|                                | E   | EN10204                                                                                      |
| <b>Alarm output</b>            | HH  | NAMUR NE43 analog output, high alarm, 20.8 mA                                                |
|                                | LL  | NAMUR NE43 analog output, low alarm, 3.8 mA                                                  |
|                                | NA  | Unavailable                                                                                  |

# Model Code

## DN80 Single Flange

| Model Type                                 | Code | Description                                                                                                             |
|--------------------------------------------|------|-------------------------------------------------------------------------------------------------------------------------|
| <b>AT5020-</b>                             |      | DN80 single flange pressure transmitter ( $\pm 0.2\%$ FS accuracy)                                                      |
| <b>Type</b>                                | YTG  | Monocrystalline silicon sensor (gauge pressure, -100 kPa to 10 MPa, minimum range 0 to 10 kPa)                          |
|                                            | YTA  | Monocrystalline silicon sensor (absolute pressure, 0 kPa to 10 MPa, minimum range 0 to 20 kPa)                          |
| <b>Range</b>                               | 3    | 0 to 40 kPa with the minimum range of 0 to 10 kPa (0 to 40 kPa with the minimum range of 0 to 20 kPa absolute pressure) |
|                                            | 4    | 0 to 250 kPa                                                                                                            |
|                                            | 5    | 0 to 1 MPa                                                                                                              |
|                                            | 6    | 0 to 3 MPa                                                                                                              |
|                                            | 7    | 0 to 10 MPa                                                                                                             |
| <b>Sealing method</b>                      | W    | Stainless steel welded seals                                                                                            |
| <b>Electrical connection &amp; housing</b> | -E1  | Aluminum housing, polyurethane coating, 1/2 NPT F, cable entry                                                          |
|                                            | -E2  | Aluminum housing, polyurethane coating, M20 $\times$ 1.5 F, cable entry                                                 |
|                                            | -E3  | SS316 housing, 1/2 NPT F, cable entry                                                                                   |
|                                            | -E4  | SS316 housing, M20 $\times$ 1.5 F, cable entry                                                                          |
| <b>Output signal</b>                       | S7   | 24 V DC loop power supply, 4 to 20 mA, HART 7, two-wire                                                                 |
|                                            | R    | Modbus RTU, four-wire, 24 V DC loop power supply                                                                        |
| <b>Display mode</b>                        | M0   | Without display                                                                                                         |
|                                            | M5   | LCD with backlight display module, physical buttons and magnetic bar                                                    |
| <b>Process flange</b>                      | -S4  | SS304                                                                                                                   |
|                                            | -S6  | SS316                                                                                                                   |
|                                            | -X   | More optional materials                                                                                                 |
| <b>Connection type</b>                     | SC   | Standard connection, applicable medium temperature -25 to 85°C                                                          |
|                                            | HC   | Heat sink connection, applicable for medium temperature -40 to 150°C                                                    |
|                                            | LC   | Extra-long heat sink connection, applicable medium temperature -40 to 315°C                                             |
| <b>Isolation fluid</b>                     | S    | Normal temperature silicone oil, temperature range -40 to 205°C                                                         |
|                                            | H    | High temperature silicone oil, temperature range 0 to 315°C                                                             |
| <b>Isolation diaphragms</b>                | A    | SS316L                                                                                                                  |
|                                            | C    | Tantalum (SS316 for process connections)                                                                                |
|                                            | P    | SS316 and PTFE coating (range $\geq 50$ kPa)                                                                            |
|                                            | H    | Hastelloy C (SS316 for process connections)                                                                             |
|                                            | G    | SS316L gold plated                                                                                                      |
|                                            | X    | More optional materials                                                                                                 |
| <b>Process connection</b>                  | H30  | HG/T 20592-2009 DN80 RF, PN10                                                                                           |
|                                            | H31  | HG/T 20592-2009 DN80 RF, PN16                                                                                           |
|                                            | H32  | HG/T 20592-2009 DN80 RF, PN40                                                                                           |
|                                            | H33  | HG/T 20592-2009 DN80 RF, PN64                                                                                           |
|                                            | H34  | HG/T 20592-2009 DN80 RF, PN100                                                                                          |
|                                            | X    | Optional flange                                                                                                         |

|                                |     |                                                                                              |
|--------------------------------|-----|----------------------------------------------------------------------------------------------|
| <b>Anti-explosion</b>          | d   | ExdbIICT6 Gb, NEPSI                                                                          |
|                                | i   | ExialICT4 Ga, NEPSI                                                                          |
|                                | NA  | Unavailable                                                                                  |
| <b>Special treatment</b>       | T   | Degreasing (removing oil and grease from product surface)                                    |
|                                | NA  | Unavailable                                                                                  |
| <b>Mounting bracket</b>        | B01 | U and L bracket, 2" pipe                                                                     |
|                                | NA  | Without bracket (optional when no capillary pipe)                                            |
| <b>Capillary</b>               | NA  | Capillary-free                                                                               |
|                                | 01  | 1 m capillary tube, PVC sheath and armored SS316                                             |
|                                | 02  | 2 m capillary tube, PVC sheath and armored SS316                                             |
|                                | 03  | 3 m capillary tube, PVC sheath and armored SS316                                             |
|                                | 04  | 4 m capillary tube, PVC sheath and armored SS316                                             |
|                                | 05  | 5 m capillary tube, PVC sheath and armored SS316                                             |
|                                | 06  | 6 m capillary tube, PVC sheath and armored SS316                                             |
|                                | 07  | 7 m capillary tube, PVC sheath and armored SS316                                             |
|                                | 08  | 8 m capillary tube, PVC sheath and armored SS316                                             |
|                                | 09  | 9 m capillary tube, PVC sheath and armored SS316                                             |
|                                | 10  | 10 m capillary tube, PVC sheath and armored SS316                                            |
| <b>Extended warranty</b>       | 2W  | 2-year warranty                                                                              |
|                                | 3W  | 3-year warranty                                                                              |
| <b>Flushing ring</b>           | R80 | DN80, SS316, clamping type                                                                   |
| <b>Subsidiary requirements</b> | E   | English stainless steel nameplate                                                            |
|                                | R   | Russian stainless steel nameplate                                                            |
|                                | E5  | Anti-explosion cable gland, SS316, 1/2 NPT, cable diameter 6 to 8 mm, optional 11 to 17 mm   |
|                                | E6  | Anti-explosion cable gland, SS316, M20 × 1.5, cable diameter 6 to 8 mm, optional 11 to 17 mm |
|                                | E7  | Nickel plated brass cable gland, 1/2 NPT, cable diameter 6 to 8 mm, optional 11 to 17 mm     |
|                                | E8  | Nickel plated brass cable gland, M20 × 1.5, cable diameter 6 to 8 mm, optional 11 to 17 mm   |
| <b>Report</b>                  | R   | Calibration certificate                                                                      |
| <b>Special certifications</b>  | SIL | SIL                                                                                          |
|                                | Ad  | ATEX Exd                                                                                     |
|                                | Ai  | ATEX Exia                                                                                    |
|                                | CE  | Certificate of Compliance                                                                    |
|                                | Id  | IEC Exd                                                                                      |
|                                | Ii  | IEC Exia                                                                                     |
|                                | N   | NACE                                                                                         |
|                                | P   | PMI certificate                                                                              |
|                                | E   | EN10204                                                                                      |
| <b>Alarm output</b>            | HH  | NAMUR NE43 analog output, high alarm, 20.8 mA                                                |
|                                | LL  | NAMUR NE43 analog output, low alarm, 3.8 mA                                                  |
|                                | NA  | Unavailable                                                                                  |

## Certifications

| Name   | Description                                                                                                                             |
|--------|-----------------------------------------------------------------------------------------------------------------------------------------|
| NEPSI  | NEPSI explosive-proof Ex db IIC T4...T6 Gb<br>Application standard: GB/T 3836.1-2021, GB/T 3836.2-2021, GB/T 3836.31-2021               |
|        | NEPSI dust explosion prevention Ex tb IIIC T80°C T130 Db<br>Application standard: GB/T 3836.1-2021, GB/T 3836.2-2021, GB/T 3836.31-2021 |
|        | NEPSI intrinsically safe Ex ia IIC T4 Ga<br>Application standard: GB/T 3836.1-2021, GB/T 3836.4-2021, GB/T 3836.20-2010                 |
| NACE   | NACE Component & Brinell Hardness<br>Application standard: NACE MR0175                                                                  |
|        | NACE Component & Vickers Hardness<br>Application standard: NACE MR0175                                                                  |
|        | NACE Hydrogen-Induced Cracking (HIC)<br>Application standard: NACE MR0175, NB/T 47010-2017                                              |
|        | NACE Sulfide Stress Corrosion Cracking (SSC)<br>Application standard: NACE MR0175, NB/T 47010-2017                                      |
| SIL    | The measuring instrument can be used as a pressure monitoring system, up to SIL2/3                                                      |
| HART   | Measurement system can meet HART7, equipment can be used with the certified equipment of other suppliers (interoperability)             |
| Modbus | Modbus-RTU/RS485                                                                                                                        |
| CE     | Certificate of Compliance, EN IEC 61326-1:2021, electromagnetic compatibility directive 2014/30/EU                                      |
| ATEX   | ATEX Exd, ATEX Exia                                                                                                                     |
| IEC Ex | IEC Exd, IEC Exia                                                                                                                       |
| PMI    | PMI verification and certificate                                                                                                        |
| EN     | EN10204                                                                                                                                 |

## Appendix Table of Anti-corrosion Properties of Commonly Used Metal Materials

A - Excellent B - Possible C - Poor X - Unavailable

| Type           | Medium Name          | Concentration/% | Temperature/°C | SS316/SS316L | Hastelloy C | Tantalum |
|----------------|----------------------|-----------------|----------------|--------------|-------------|----------|
| Inorganic acid | Sulfuric acid        | 5               | 25             | A            | A           | A        |
|                |                      |                 | 100            | C            | B           | A        |
|                |                      | 10              | 25             | C            | A           | A        |
|                |                      |                 | 100            | C            | C           | A        |
|                |                      | 20              | 25             | B            | A           | A        |
|                |                      |                 | 100            | C            | C           | A        |
|                |                      | 60              | 25             | C            | A           | A        |
|                |                      |                 | 100            | ×            | C           | A        |
|                |                      | 80              | 25             | A            | A           | A        |
|                |                      |                 | 100            | C            | C           | B        |
|                |                      | 98              | 25             | B            | A           | A        |
|                |                      |                 | 100            | ×            | A           | A        |
|                | Fuming sulfuric acid | 25              | C              | B            | C           |          |
|                |                      | 100             | C              | B            | C           |          |
|                | Carbamide            | 10              | 25             | A            | B           | A        |
|                |                      |                 | 100            | A            | B           | A        |
|                |                      | 30              | 25             | A            | B           | A        |
|                |                      |                 | 100            | B            | C           | A        |
|                |                      | 68              | 25             | A            | A           | A        |
|                |                      |                 | 100            | ×            | ×           | A        |
|                | Fuming               | 25              | ×              | ×            | A           |          |
|                | Hydrochloric acid    | 5               | 25             | C            | B           | A        |
|                |                      |                 | 100            | C            | C           | A        |
|                |                      | 10              | 25             | C            | B           | A        |
|                |                      |                 | 100            | C            | C           | A        |
|                |                      | 20              | 25             | C            | B           | A        |
|                |                      |                 | 100            | C            | C           | A        |
|                |                      | 35              | 25             | C            | B           | A        |
|                |                      |                 | 100            | C            | C           | A        |
|                | Sodium pyrophosphate | 20              | 25             | A            | A           | A        |
|                |                      |                 | 100            | A            | A           | A        |
|                |                      | 30              | 25             | A            | A           | A        |
|                |                      |                 | 100            | B            | A           | A        |
|                |                      | 50              | 25             | A            | A           | A        |
|                |                      |                 | 100            | B            | A           | A        |
|                |                      | 70              | 25             | A            | A           | A        |
|                |                      |                 | 100            | C            | B           | A        |
|                |                      | 85              | 25             | A            | A           | A        |
|                |                      |                 | 100            | C            | C           | A        |
|                |                      | 90              | 25             | C            | B           | A        |
|                |                      |                 | 100            | C            | B           | A        |
|                | Hydrofluoric acid    | 5               | 25             | C            | C           | C        |
|                |                      |                 | 100            | C            | C           | C        |
|                |                      | 40              | 25             | C            | A           | ×        |
|                |                      |                 | 100            | C            | C           | ×        |
|                |                      | 90              | 25             | C            | B           | ×        |
|                |                      |                 | 100            | C            | ×           | ×        |

| Type                 | Medium Name         | Concentration/% | Temperature/°C | SS316/SS316L | Hastelloy C | Tantalum |
|----------------------|---------------------|-----------------|----------------|--------------|-------------|----------|
| Inorganic acid       | Hydrobromic acid    | <60             | 25             | C            | ×           | A        |
|                      |                     |                 | 100            | C            | ×           | A        |
|                      | Hydrocyanic acid    |                 | 25             | B            | B           | A        |
|                      |                     |                 | 100            | B            | B           | A        |
|                      | Argon-sulfuric acid |                 | 25             | B            | B           | A        |
|                      |                     |                 | 100            | B            | B           | A        |
|                      | Guanosine           | 10              | 25             | B            | A           | A        |
|                      |                     |                 | 100            | C            | ×           | A        |
|                      |                     | 100             | 25             | A            | A           | A        |
|                      |                     |                 | 100            | A            | ×           | A        |
|                      | Chromate            | <50             | 25             | C            | B           | A        |
|                      |                     |                 | 100            | C            | B           | A        |
|                      |                     | >50             | 25             | C            | B           | A        |
|                      |                     |                 | 100            | C            | ×           | A        |
|                      | Chlorate            | 10              | 25             | C            | B           | A        |
|                      |                     |                 | 100            | C            | ×           | A        |
|                      | Hypochlorous acid   |                 | 25             | C            | A           | A        |
|                      |                     |                 | 100            | C            | ×           | A        |
|                      | Boric acid          | 0-100           | 25             | A            | A           | A        |
|                      |                     |                 | 100            | A            | A           | A        |
|                      | Chlorosulfonic acid | 10              | 25             | C            | B           | A        |
|                      |                     |                 | 100            | C            | ×           | A        |
|                      |                     | 100             | 25             | B            | A           | A        |
|                      |                     |                 | 100            | B            | A           | A        |
|                      | Chrome water        | 20              | 25             | ×            | A           | A        |
|                      |                     |                 | 100            | ×            | ×           | A        |
|                      | Aqua regia          |                 | 25             | C            | C           | A        |
|                      |                     |                 | 100            | C            | C           | ×        |
| Bases and hydroxides | Caustic soda        | 10              | 25             | A            | A           | C        |
|                      |                     |                 | 100            | A            | A           | C        |
|                      |                     | 20              | 25             | A            | B           | A        |
|                      |                     |                 | 100            | A            | B           | B        |
|                      |                     | 40              | 25             | A            | B           | C        |
|                      |                     |                 | 100            | A            | B           | C        |
|                      |                     | 70              | 25             | A            | A           | C        |
|                      |                     |                 | 100            | B            | A           | C        |
|                      | potassium hydroxide | <60             | 25             | A            | B           | C        |
|                      |                     |                 | 100            | A            | B           | C        |
|                      |                     | 100             | 25             | A            | B           | C        |
|                      |                     |                 | 100            | A            | ×           | C        |
|                      | Ammonium hydroxide  | 0-100           | 25             | A            | A           | ×        |
|                      |                     |                 | 100            | B            | A           | ×        |
|                      | slaked lime         | <50             | 25             | A            | A           | A        |
|                      |                     |                 | 100            | A            | A           | A        |
|                      | magnesium hydroxide | 100             | 25             | A            | A           | A        |
|                      |                     |                 | 100            | A            | A           | A        |
|                      | Lithium hydroxide   | 10              | 25             | B            | B           | ×        |
|                      |                     |                 | 100            | B            | B           | ×        |
|                      | Aluminum hydroxide  | 10              | 25             | A            | B           | A        |
|                      |                     |                 | 100            | A            | B           | A        |

| Type         | Medium Name                                                | Concentration/% | Temperature/°C | SS316/SS316L | Hastelloy C | Tantalum |
|--------------|------------------------------------------------------------|-----------------|----------------|--------------|-------------|----------|
| Organic acid | Carboxylic acid                                            | 10              | 25             | ×            | A           | A        |
|              |                                                            |                 | 100            | ×            | A           | A        |
|              |                                                            | 100             | 25             | ×            | A           | A        |
|              |                                                            |                 | 100            | ×            | A           | A        |
|              | Acetic acid                                                | <100            | 25             | A            | A           | A        |
|              |                                                            |                 | 100            | A            | A           | A        |
|              |                                                            | 10              | 25             | B            | A           | A        |
|              |                                                            |                 | 100            | B            | A           | A        |
|              | Propanoic acid                                             | 60-90           | 25             | B            | A           | A        |
|              |                                                            |                 | 100            | B            | A           | A        |
|              | Butyric acid                                               |                 | 25             | A            | A           | A        |
|              |                                                            |                 | 100            | A            | A           | A        |
|              | Butenoic acid                                              |                 | 25             | B            | B           | A        |
|              |                                                            |                 | 100            | B            | B           | A        |
|              | Stearate                                                   |                 | 25             | A            | A           | A        |
|              |                                                            |                 | 100            | A            | A           | A        |
|              | Fatty acids                                                |                 | 25             | A            | A           | A        |
|              |                                                            |                 | 100            | A            | A           | A        |
|              | Glycolic acid C <sub>2</sub> H <sub>4</sub> O <sub>3</sub> |                 | 25             | B            | B           | A        |
|              |                                                            |                 | 100            | B            | B           | A        |
|              | Pyromellitate                                              | 10              | 25             | A            | B           | A        |
|              |                                                            |                 | 100            | A            | ×           | A        |
|              |                                                            | 100             | 25             | B            | A           | A        |
|              |                                                            |                 | 100            | ×            | ×           | A        |
|              | Monochloroacetic acid                                      | <70             | 25             | C            | B           | A        |
|              |                                                            |                 | 100            | C            | B           | A        |
|              |                                                            | 100             | 25             | B            | A           | A        |
|              |                                                            |                 | 100            | ×            | A           | A        |
|              | Lactic acid                                                | <20             | 25             | A            | B           | A        |
|              |                                                            |                 | 100            | B            | B           | A        |
|              |                                                            | >70             | 25             | A            | B           | A        |
|              |                                                            |                 | 100            | B            | B           | A        |
|              | Oxalic acid C <sub>2</sub> H <sub>2</sub> O <sub>4</sub>   | 10              | 25             | B            | B           | A        |
|              |                                                            |                 | 100            | C            | B           | B        |
|              | Succinic acid                                              | <50             | 25             | B            | B           | A        |
|              |                                                            |                 | 100            | B            | B           | A        |
|              |                                                            | 100             | 25             | B            | B           | A        |
|              |                                                            |                 | 100            | B            | B           | A        |
|              | Benzoic acid C <sub>6</sub> H <sub>5</sub> COOH            | <70             | 25             | B            | A           | A        |
|              |                                                            |                 | 100            | B            | A           | A        |
|              | Citrate                                                    | 0-100           | 25             | A            | A           | A        |
|              |                                                            |                 | 100            | A            | A           | A        |
|              | Salicylate                                                 |                 | 25             | B            | B           | A        |
|              |                                                            |                 | 100            | B            | ×           | A        |
|              | Mminobenzoic acid                                          |                 | 25             | B            | B           | A        |
|              |                                                            |                 | 100            | B            | B           | A        |
|              | Benzenesulfonic acid                                       | 0-100           | 25             | B            | B           | A        |
|              |                                                            |                 | 100            | ×            | B           | A        |
|              | Naphthalene sulfonic acid                                  | 100             | 25             | B            | A           | C        |
|              |                                                            |                 | 100            | ×            | A           | C        |

| Type | Medium Name                                 | Concentration/% | Temperature/°C | SS316/SS316L | Hastelloy C | Tantalum |
|------|---------------------------------------------|-----------------|----------------|--------------|-------------|----------|
| Salt | Ammonium sulfate                            | <40             | 25             | B            | B           | A        |
|      |                                             |                 | 100            | B            | B           | A        |
|      | Ammonium nitrate                            | 10              | 25             | A            | B           | A        |
|      |                                             |                 | 100            | A            | B           | A        |
|      | Ammonium carbonate                          | 100             | 25             | B            | B           | A        |
|      |                                             |                 | 100            | B            | B           | A        |
|      | Ammonium chloride                           | <40             | 25             | A            | A           | A        |
|      |                                             |                 | 100            | A            | A           | A        |
|      |                                             | 100             | 25             | ×            | B           | A        |
|      |                                             |                 | 100            | ×            | B           | A        |
|      | Ammonium acetate                            | 0-100           | 25             | A            | A           | ×        |
|      |                                             |                 | 100            | A            | A           | ×        |
|      | Ammonium sulfite                            | <30             | 25             | B            | B           | A        |
|      |                                             |                 | 100            | B            | B           | A        |
|      | Sodium sulfate                              | <40             | 25             | ×            | ×           | A        |
|      |                                             |                 | 100            | ×            | B           | A        |
|      | Soda                                        | 10              | 25             | A            | A           | A        |
|      |                                             |                 | 100            | A            | A           | A        |
|      |                                             | 100             | 25             | B            | B           | A        |
|      |                                             |                 | 100            | B            | B           | A        |
|      | Sodium hypochlorite (hypochlorite NaOH)     | <20             | 25             | C            | B           | A        |
|      |                                             |                 | 100            | C            | B           | A        |
|      | Sodium chloride                             | <30             | 25             | B            | B           | A        |
|      |                                             |                 | 100            | C            | B           | A        |
|      | Sodium bicarbonate                          | <30             | 25             | A            | B           | A        |
|      |                                             |                 | 100            | C            | B           | A        |
|      | sodium nitrite                              |                 | 25             | A            | A           | A        |
|      |                                             |                 | 100            | A            | A           | A        |
|      | sodium acetate (chemistry)                  | <60             | 25             | A            | B           | A        |
|      |                                             |                 | 100            | A            | B           | A        |
|      | Sodium benzoate, E211 (a food preservative) | <60             | 25             | B            | B           | B        |
|      |                                             |                 | 100            | B            | B           | B        |
|      | Potassium sulfate                           | <20             | 25             | A            | A           | A        |
|      |                                             |                 | 100            | A            | A           | A        |
|      | Potassium nitrate                           | <100            | 25             | B            | B           | A        |
|      |                                             |                 | 100            | ×            | ×           | A        |
|      | Potassium carbonate                         | <50             | 25             | B            | B           | ×        |
|      |                                             |                 | 100            | B            | B           | C        |
|      | Potassium perchlorate                       | 10              | 25             | B            | B           | ×        |
|      |                                             |                 | 100            | B            | B           | ×        |
|      | Dicalcium phosphate                         | <30             | 25             | A            | B           | A        |
|      |                                             |                 | 100            | A            | B           | A        |
|      | Potassium bromide                           | <30             | 25             | B            | B           | A        |
|      |                                             |                 | 100            | B            | B           | A        |
|      | Potassium chromate                          | <30             | 25             | B            | A           | A        |
|      |                                             |                 | 100            | B            | A           | A        |

| Type                                          | Medium Name                                    | Concentration/% | Temperature/°C | SS316/SS316L | Hastelloy C | Tantalum |
|-----------------------------------------------|------------------------------------------------|-----------------|----------------|--------------|-------------|----------|
| Salt                                          | Potassium permanganate                         | 10              | 25             | B            | B           | ×        |
|                                               |                                                |                 | 100            | B            | B           | ×        |
|                                               | Aluminum sulfate                               | <50             | 25             | A            | A           | A        |
|                                               |                                                |                 | 100            | A            | A           | A        |
|                                               | Aluminum chloride                              | 0-100           | 25             | B            | A           | A        |
|                                               |                                                |                 | 100            | ×            | A           | A        |
|                                               | Magnesium sulfate                              | <30             | 25             | A            | A           | A        |
|                                               |                                                |                 | 100            | A            | A           | A        |
|                                               | Magnesium nitrate                              |                 | 25             | B            | B           | A        |
|                                               |                                                |                 | 100            | B            | B           | A        |
|                                               | Magnesium chloride                             | <40             | 25             | B            | A           | A        |
|                                               |                                                |                 | 100            | B            | A           | A        |
|                                               | Calcium sulfate                                | 10              | 25             | A            | B           | A        |
|                                               |                                                |                 | 100            | A            | B           | A        |
|                                               |                                                | 100             | 25             | B            | B           | A        |
|                                               |                                                |                 | 100            | B            | B           | A        |
|                                               | Talc                                           | 100             | 25             | B            | B           | A        |
|                                               |                                                |                 | 100            | ×            | B           | A        |
|                                               | Calcium phosphate                              | 10              | 25             | B            | B           | A        |
|                                               |                                                |                 | 100            | B            | B           | A        |
|                                               | Calcium chloride                               | <80             | 25             | B            | A           | A        |
|                                               |                                                |                 | 100            | B            | A           | A        |
|                                               | Ferric chloride                                | 30              | 25             | C            | B           | A        |
|                                               |                                                |                 | 100            | C            | C           | A        |
| Elements, gases and their inorganic compounds | Chlorine                                       | Dry air         | 25             | B            | A           | A        |
|                                               |                                                |                 | 100            | B            | B           | A        |
|                                               |                                                | Wet air         | 25             | C            | B           | A        |
|                                               |                                                |                 | 100            | C            | C           | A        |
|                                               | Chlorine water                                 | Saturated       | RT             | C            | B           | A        |
|                                               | Bromine                                        | Dry             | 25             | C            | A           | A        |
|                                               |                                                |                 | 100            | C            | B           | A        |
|                                               |                                                | Wet             | 25             | ×            | A           | A        |
|                                               |                                                |                 | 100            | ×            | A           | A        |
|                                               | Phosphorus                                     |                 | 25             | A            | A           | ×        |
|                                               |                                                |                 | 100            | A            | ×           | ×        |
|                                               | Sodium                                         |                 | 270            | A            | A           | A        |
|                                               | Hydrogen chloride                              | 100             | 25             | A            | A           | A        |
|                                               |                                                |                 | 100            | A            | A           | A        |
|                                               | Sulfur dioxide                                 | 10              | 25             | A            | A           | ×        |
|                                               |                                                |                 | 100            | A            | A           | ×        |
|                                               |                                                | 90-100          | 25             | B            | B           | ×        |
|                                               |                                                |                 | 100            | B            | B           | ×        |
|                                               | Phosphorous trichloride                        | Dry             | 25             | A            | A           | A        |
|                                               |                                                |                 | 100            | ×            | A           | A        |
|                                               | Arsenic trichloride                            | 10              | 25             | C            | B           | ×        |
|                                               |                                                |                 | 100            | C            | B           | ×        |
|                                               | Sodium peroxide Na <sub>2</sub> O <sub>2</sub> | 10              | 25             | A            | B           | ×        |
|                                               |                                                |                 | 100            | A            | B           | ×        |
|                                               | Sulfur dichloride                              | Wet             |                | A            | ×           | A        |
|                                               | Hydrogen sulfide                               | Wet             | 25             | A            | ×           | A        |
|                                               | Methyl alcohol                                 |                 | 25             | A            | A           | A        |
|                                               |                                                |                 | 100            | A            | A           | A        |
|                                               | Ethanol                                        |                 | 25             | A            | A           | A        |
|                                               |                                                |                 | 100            | A            | A           | A        |
|                                               | Formaldehyde                                   | <70             | 25             | A            | B           | A        |
|                                               |                                                |                 | 100            | A            | B           | A        |

| Type                                                  | Medium Name                             | Concentration/% | Temperature/°C | SS316/SS316L | Hastelloy C | Tantalum |
|-------------------------------------------------------|-----------------------------------------|-----------------|----------------|--------------|-------------|----------|
| Alcohols,<br>aldehydes,<br>ethers,<br>ketones, lipids | Acetaldehyde                            |                 | 25             | A            | A           | A        |
|                                                       |                                         |                 | 100            | A            | ×           | A        |
|                                                       | (ii) Methyl ether                       |                 | 25             | B            | B           | A        |
|                                                       |                                         |                 | 100            | B            | B           | A        |
|                                                       | (ii) Ether                              |                 | 25             | A            | B           | A        |
|                                                       |                                         |                 | 100            | A            | B           | A        |
|                                                       | Acetone                                 |                 | 25             | A            | A           | A        |
|                                                       |                                         |                 | 100            | A            | A           | A        |
|                                                       | Butanone                                | <100            | 25             | B            | B           | A        |
|                                                       |                                         |                 | 100            | B            | B           | A        |
|                                                       | Formic acid methyl ester<30             |                 | 25             | B            | B           | B        |
|                                                       |                                         |                 | 100            | B            | B           | B        |
|                                                       | Ethyl acetate                           |                 | 25             | A            | B           | A        |
|                                                       |                                         |                 | 100            | B            | B           | A        |
| Hydrocarbons<br>and petroleum<br>products             | Methane CH <sub>4</sub>                 |                 | 25             | A            | A           | A        |
|                                                       |                                         |                 | 100            | A            | A           | A        |
|                                                       | Benzene                                 |                 | 25             | B            | B           | A        |
|                                                       |                                         |                 | 100            | B            | B           | A        |
|                                                       | Toluene                                 |                 | 25             | A            | A           | A        |
|                                                       |                                         |                 | 100            | A            | A           | A        |
|                                                       | Phenol                                  | 90              | 25             | B            | A           | A        |
|                                                       |                                         |                 | 100            | B            | A           | A        |
| Hydrocarbons<br>and petroleum<br>products             | Acrylonitrile                           |                 | 25             | A            | A           | A        |
|                                                       |                                         |                 | 100            | A            | A           | A        |
|                                                       | Urea (NH <sub>2</sub> ) <sub>2</sub> CO | <50             | 25             | B            | B           | A        |
|                                                       |                                         |                 | 100            | B            | B           | A        |
|                                                       | Nitroglycerine                          |                 | 25             | A            | A           | A        |
|                                                       |                                         |                 | 100            | A            | ×           | A        |
|                                                       | Nitrotoluene                            |                 | 25             | A            | B           | A        |
|                                                       |                                         |                 | 100            | A            | B           | A        |
| Others                                                | Sea water                               |                 | 25             | A            | A           | A        |
|                                                       |                                         |                 | 80             | A            | A           | A        |
|                                                       | Salted water                            |                 | 25             | B            | A           | A        |
|                                                       |                                         |                 | 80             | B            | A           | A        |
| Mixers                                                | 35%HCL +65%HN03                         |                 | 25             | ×            | ×           | A        |
|                                                       | 90%H2S04 +10%HN03                       |                 | 25             | ×            | ×           | A        |
|                                                       | 70%H2S04 +30%HN03                       |                 | RT             | ×            | ×           | A        |
|                                                       | 50%H2S04 +50%HN03                       |                 | RT             | ×            | ×           | A        |



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