# SAW-flux for un and low alloyed wires

| Brand<br>Standard AWS<br>Standard EN ISO | Main constituent: % | | | | Grain size / density | Characteristics and Applications |
|---|---|---|---|---|---|---|
| **UV 420 TTR /<br>UV 420 TTR-W**<br><br>EN ISO 14174:<br>SA FB 1 65 DC /<br>SA FB 1 65 AC | $SiO_2$+$TiO_2$<br>15 | CaO+MgO<br>35 | $Al_2O_3$+MnO<br>21 | $CaF_2$<br>26 | Grain size acc. EN ISO 14174: 3-20 (0.3-2.0mm) | UV 420 TTR is an agglomerated flux of fluoride basic type. It displays neutral metallurgical behaviour and is characterised by a high degree of purity. It is particularly suitable for welding hydrocrackers because of the low P pick up of 0.004% max. When used in combination with electrodes Union S 2 CrMo and Union S 1 CrMo 2 it is possible to meet the most stringent toughness requirements at sub zero temperatures even after step cooling treatment. UV 420 TTR-W permits sound welding on AC, by this achieving a higher level of toughness when welding with CrMo alloyed sub arc wires. |
| **UV 421 TT**<br><br>EN ISO 14174:<br>SA FB 1 55 AC H5 | $SiO_2$+$TiO_2$<br>15 | CaO+MgO<br>38 | $Al_2O_3$+MnO<br>20 | $CaF_2$<br>25 | Grain size acc. EN ISO 14174: 3-20 (0.3-2.0mm) | UV 421 TT is an agglomerated flux of fluoride basic type for joining and surfacing of high strength steels and cryogenic fine grained structural steels. The silicon and manganese pickups and burn off rates are neutral because of its metallurgical behaviour. The cryogenic toughness of the weld metal is very good. It can be welded with nearly every wire electrode. The flux can be used for tandem and multi wire welding with DC and AC. Very good slag detachability. |
| **MARATHON 543**<br><br>EN ISO 14174:<br>S A FB 1 55 DC H5 | $CaF_2$<br>21 | $SiO_2$<br>8 | $CaF_2$+CaO+MgO+MnO<br>62 | | Grain size acc.<br>EN ISO 14174: 3-20 (0.3-2.0mm) | Marathon 543 is an agglomerated fluoride-basic special welding flux with high basicity suitable for multi-run welding high creep resistant 9%Cr-steels like grade P91/T91, 1.4903 - X10CrMoVNb9-1, grade P92/T92, NF616 and 1.4905 - X11CrMoWVNb9-1-1. The metallurgical behaviour concerning Si and Mn is neutral. The flux produces well contoured and smooth welding beads with good slag release as well as appropriate weld metal ductility and impact behaviour after tempering. Marathon 543 is a hydrogen-controlled welding flux with hydrogen contents of maximum 5 ml / 100 gr weld deposit. |
| **UV C 418 TT-M**<br><br>EN ISO 14174:<br>SA FB 1 56 AC H5 | $SiO_2$ + $TiO_2$<br>15 | CaO + MgO<br>32 | $Al_2O_3$ + MnO<br>20 | $CaF_2$<br>28 | Grain size acc.<br>EN ISO 14174: 3-20 (0.3-2.0mm) | UV C 418 TT-M is an agglomerated flux of fluoride basic type for joining and surfacing applications. Mainly for high strength and cryogenic fine grained structural steels. Very good slag detachability. Excellent for narrow gap welding. The flux can be used for tandem and multi wire welding with DC+ and AC. |
| **UV C 418 TT**<br><br>EN ISO 14174:<br>SA FB 1 55 AC H5 | $SiO_2$ + $TiO_2$<br>16 | CaO + MgO<br>33 | $Al_2O_3$ + MnO<br>20 | $CaF_2$<br>27 | Grain size acc.<br>EN ISO 14174: 3-20 (0.3-2.0mm) | UV C 418 TT is an agglomerated flux of fluoride basic type for joining and surfacing applications. Mainly for high strength and cryogenic fine grained structural steels. It is characterized by its neutral metallurgical behaviour. Very good slag detachability. Excellent for narrow gap welding. The flux can be used for tandem and multi wire welding with DC+ and AC. |
| **UV 310 P**<br><br>EN ISO 14174:<br>S A AB 1 55 AC H5 | $SiO_2$ + $TiO_2$<br>18 | CaO + MgO<br>25 | $Al_2O_3$ + MnO<br>35 | $CaF_2$<br>17 | Grain size acc.<br>EN ISO 14174: 3-20 (0.3-2.0mm) | UV 310 P is an agglomerated aluminate-basic flux for submerged arc welding of unalloyed and low alloyed steel grades. The basic flux has a neutral metallurgical behaviour regarding to Mn and Si to avoid hard spots in the weld and is suitable for sour service applications.The flux has been optimised for the manufacture of pipes using the two-run technique and has a high current carrying capacity. Suitable for longitudinal pipe welding and spiral pipe welding with single wire, and especially multi-wire applications with 2-5 wires (DC+ / AC). Nice flat bead appearance with very good slag detachability. The flux generates a very low amount of diffusible hydrogen content HD <4 ml/100gr acc to ISO 3690 in the weld metal. During welding activities the flux shows a very low tendency concerning moisture pick-up and consequently a rapid increase of diffusible hydrogen in the weld metal is avoided. UV 310 P has a relative low sensitivity for possible negative effects of copper particles in the flux. UV 310 P has been designed to achieve best CTOD- and charpy toughness properties in two-run applications with wires like Union S 3 MoTiB, Union S 3 TiB (and Union S 2 Mo). Depending on wire selection and welding conditions the flux can be used for pipe steel grades acc. to API: Grade X 42 to X 80. |

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| **UV C 401**<br><br>EN ISO 14174:<br>SA AB 1 67 AC H5 | $SiO_2 + TiO_2$<br>19 | CaO + MgO<br>31 | $Al_2O_3$ + MnO<br>29 | $CaF_2$<br>20 | Grain size acc. EN ISO 14174: 3-20 (0.3-2.0mm) | UV C 401 is an agglomerated flux of aluminate basic type for joining and surfacing applications with general purpose structural steels, boiler and pipe steels. The flux is characterized by low Silicon and Moderate manganese pick up. The welding characteristics are good producing a smooth weld bead with excellent slag detachability. |
| **UV C 305**<br><br>EN ISO 14174:<br>SA AR 1 76 AC H5 | $SiO_2 + TiO_2$<br>28 | CaO + MgO<br>0 | $Al_2O_3$ + MnO<br>55 | $CaF_2$<br>10 | Grain size acc. EN ISO 14174: 4-14 (0.4-1.4mm) | UV C 305 is an agglomerated flux of aluminate rutile type for joining applications with general purpose steels. The flux is characterized by low silicon and moderate manganese pick up. The welding characteristics are good producing a smooth weld bead with excellent slag detachability. The flux is particulary well suited for single wire or twin arc fillet welding with small wire diameter (1.6-2.4 mm) with high welding speed. Wall thickness <10 mm. |

## SAW-flux for high alloyed wires

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|---|---|---|---|---|---|---|
| **AVESTA C 807**<br><br>EN ISO 14174:<br>SA FB 2 | $SiO_2 + TiO_2$<br>10 | | $Al_2O_3$<br>38 | $CaF_2$<br>50 | Grain size acc. EN ISO 14174: 3-16 (0.3-1.6mm) | AVESTA C 807 is specially designed for joining stainless steels which is used for austenitic stainless wires type 308L, 316L and 309L for applications where high impact strength values and high corrosion resistance is required. It can also be used for cladding unalloyed or low alloy steel. Very good welding properties and easy slag removal. |
| **AVESTA C 805-D**<br><br>EN ISO 14174:<br>SA AF 2 56 55 Mo DC | $SiO_2 + TiO_2$<br>10 | CaO+MgO<br>0 | $Al_2O_3$+MnO<br>40 | $CaF_2$<br>50 | Grain size acc. EN ISO 14174: 3-16 (0.3-1.6mm) | Avesta C 805-D is an agglomerated flux of aluminate fluoride basic type. Flux 805-D is specially designed for joining duplex stainless steels but can also be used for austenitic stainless wires type 308L, 316L and 309L for applications where high corrosion resistance is required. Very good welding properties and easy slag removal. |
| **MARATHON 431**<br><br>EN ISO 14174:<br>SA FB 2 DC | $CaF_2$<br>52 | $SiO_2$<br>8 | $CaF_2$+CaO+MgO+MnO<br>52 | | Grain size acc. EN ISO 14174: 3 – 16 (0.3 – 1.6 mm); 4 – 14 (0.4 – 1.4 mm) | Marathon 431 is a fluoride-basic agglomerated flux for submerged arc welding of stabilized and unstabilized standard CrNi(Mo) and duplex stainless steel grades. The flux can be applied in multi-pass and single pass welding procedures. For a nice welding performance combined with good mechanical properties. Thin fluid slag which is self-releasing after solidification. The weld seams become smooth and finely rippled without any slag residues. Marathon 431 provides a high degree of purity in the weld metal ensuring good mechanical properties with good corrosion resistance. The flux does not compensate chromium loss. |