

NON-SPARKING SAFETY SET - 17PCS V1

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NON-SPARKING TOOLS

ZONES 1, 2 (gas) & 21, 22 (dust)

17 pcs Non-sparking tool set, made of Copper-Beryllium (Cu-Be) or Aluminium-Bronze (Al-Bron) alloys, suitable for use in potentially explosive atmospheres.

The Non-sparking tools that compose this set are certified by the BAM Certification Body, stating that the materials from which they are made are suitable for use in potentially explosive atmospheres, in zones 1 and/or 21 of all explosion groups (I, IIA, IIB and IIC).



- Non-sparking tools can not reach the hardness of conventional tools. For this reason, special care must be taken when using them, avoiding heavy stress and high temperatures.

- If for all wrench/screwdriver it is imperative to use the size corresponding to the nut or screw, in the case of anti-spark spanners is even more so, since if a wrench/screwdriver of a different size is used improperly, the shearing effect that would be caused, would lead to its deterioration.

- The use of anti-spark tools should not be the only preventive measure in areas where they are designed for this purpose. Other objects, such as clothing or other materials must also be suitable for anti-spark applications.

COPPER BERYLLIUM ALLOY						
Designation:	Content:	Item No.:	Content:	Item No.:	Weight:	Item No.:
SAFETY SET 17 PCS CU-BE	Round nose pliers 160mm	11A70104	Slotted screwdriver 6x150mm	11A72267	3,6 Kg.	11A74388
	Flat nose pliers 160mm	11A70103	Philips screwdriver PH0	11A72909		
	Diagonal cutting pliers 160mm	11A70107	Philips screwdriver PH1	11A71595		
	Combination pliers 160mm	11A70100	Ballpoint hexagonal key 3mm	11A70410		
	PNeat tips tweezers	11A70115	Ballpoint hexagonal key 4mm	11A70411		
	Wirestripper 170mm	11A73903	Ballpoint hexagonal key 5mm	11A70412		
	Adjustable wrench 6"	11A71448	Knife 250mm	11A71613		
	Slotted screwdriver 3x75mm	11A72260	Scissors 225mm	11A70529		
	Slotted screwdriver 4x100mm	11A72263	ABS tool case 464x335x142mm	11A50994		

ALUMINIUM BRONZE ALLOY						
Designation:	Content:	Item No.:	Content:	Item No.:	Weight:	Item No.:
SAFETY SET 17 PCS AL-BRON	Round nose pliers 160mm	11A70534	Slotted screwdriver 6x150mm	11A72288	3,6 Kg.	11A74389
	Flat nose pliers 160mm	11A70533	Philips screwdriver PH0	11A72910		
	Diagonal cutting pliers 160mm	11A70537	Philips screwdriver PH1	11A71599		
	Combination pliers 160mm	11A70530	Ballpoint hexagonal key 3mm	11A71354		
	PNeat tips tweezers	11A70547	Ballpoint hexagonal key 4mm	11A71355		
	Wirestripper 170mm	11A73904	Ballpoint hexagonal key 5mm	11A71356		
	Adjustable wrench 6"	11A71451	Knife 250mm	11A71614		
	Slotted screwdriver 3x75mm	11A72281	Scissors 225mm	11A70546		
	Slotted screwdriver 4x100mm	11A72284	ABS tool case 464x335x142mm	11A50994		

IMPORTANT CONSIDERATION:

The hardness and resistance that can be achieved with the materials used to manufacture non-sparking tools is significantly lower than that which can be obtained in tools made of steel. Due to these special characteristics of the material employed, non sparking tools can not be guaranteed against any deformation or breakage. Non sparking tools will be replaced under guarantee only when the hardness of the damaged tool does not reach (or exceeds) the one indicated in our catalogue: 283-365 Brinell for those made in copper-beryllium and 229-291 Brinell for those made in aluminum bronze.

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MATERIALS		
Copper-Beryllium Alloy		
Composition:	Be	1.8 % - 2 %
	Ni+Co	0.2 % - 1.2 %
	Other	<0.5 %
	Rest	Cu
Hardness:	283-365 Brinell	
Tensile strength:	1250 N/mm²	
Aluminium-Bronze Alloy		
Composition:	Al	10 % - 12 %
	Ni	4 % - 6 %
	Fe+Mn	<5.8 %
	Other	<0.5 %
	Rest	Cu
Hardness:	229-291 Brinell	
Tensile strength:	800 N/mm²	

PROPERTIES AND CHARACTERISTICS	
Property:	Application or benefit:
Non-sparking	Suitable for potentially explosive environments.
Non-magnetic safety	Essential for equipments that require complete non-magnetic safety
Corrosion resistant	Specially well suited for applications in corrosive environments like encountered in marine works or fire-fighting applications
Forged after casting	Provides higher mechanical properties and better finishing.
Ergonomic designs	The use of bi-material anti-slippery handles, dipping anti-slippery handles, totally ergonomic designs make operations easier, more comfortable and master.
CAUTION:	
These tools are not classified as anti-static because they do conduct electricity. Do not use high copper content tools (>65%) in direct contact with acetylene due to the possible formation of explosive acetylide, specially in the presence of moisture.	

DIFFERENCES AND CORRECT CHOICE		
Concept:	COPPER-BERILLIUM Cu-Be	ALUMINIO-BRONCE Al-Bron
Hardness:	283-365 Brinell.	229-291 Brinell.
Magnetism:	Non ferrous substance in the composition makes it safer when non-magnetic applications are required.	Minimum ferrous component makes them not 100% non-magnetic, although its low magnetism make it appropriate for non critical non-magnetic applications.
Durability:	Much higher due to the higher hardness and tensile strength. Higher efforts can be made.	Not as much as Cu-Be.
Price:	Higher price due to the special raw material used.	Around 30 % lower price.

MAIN APPLICATION FIELDS			
Petrochemicals	Plastic manufacturing	Breweries	Air Forces
Refineries	Pharmaceutical Industry	Alcohol processing industries	Navy
Oil Companies	Fireworks Industry	Distilleries	Weapon & ammunition fabrication
Gas & oil pipe lines	Chemical Industry	Fire-fighters	Aerospace industry
Power Stations	Paper making Industries	Mines	Automobile Industry
Paint Manufacturing	Flour silos and mills	Defence	Etc.