

# NON-SPARKING SAFETY SET - 17PCS V2

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## NON-SPARKING TOOLS

## 17 PCS SAFETY SET (v2)

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 anti-spark tools that compose this kit are certified by BAM Institute, which is approved by the European Union to certify on the basis of the 94/9/EC directive.



- 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	Wrecking bar 19x900mm	11A71576	Arched scraper 100x210mm	11A73767	23 Kg.	11A74390
	Adjustable wrench 10"	11A70118	Slotted screwdriver 10x200mm	11A72272		
	Adjustable wrench 12"	11A70119	Slotted screwdriver 10x300mm	11A72273		
	Adjustable wrench 15"	11A70120	Hexagonal cold chisel 18x160mm	11A73815		
	Ball pein hammer 310mm	11A70489	Cylindrical cold chisel 24x250mm	11A73798		
	Ball pein hammer 350mm	11A70491	Heavy Duty pipe wrench 8"	11A70121		
	Chipping hammer 355mm	11A70519	Heavy Duty pipe wrench 10"	11A70122		
	Sledge hammer 900mm	11A70505	Heavy Duty pipe wrench 14"	11A70124		
	Long blade scraper 48x300mm	11A73747	Aluminium Tool Case with Foam 1350x356x114mm	11A51055		

### ALUMINIUM BRONZE ALLOY

Designation:	Content:	Item No.:	Content:	Item No.:	Weight:	Item No.:
SAFETY SET 17 PCS AL-BRON	Wrecking bar 19x900mm	11A71577	Arched scraper 100x210mm	11A73768	23 Kg.	11A74391
	Adjustable wrench 10"	11A71453	Slotted screwdriver 10x200mm	11A72293		
	Adjustable wrench 12"	11A71454	Slotted screwdriver 10x300mm	11A72294		
	Adjustable wrench 15"	11A71455	Hexagonal cold chisel 18x160mm	11A73816		
	Ball pein hammer 310mm	11A71744	Cylindrical cold chisel 24x250mm	11A73799		
	Ball pein hammer 350mm	11A71746	Heavy Duty pipe wrench 8"	11A71458		
	Chipping hammer 355mm	11A71774	Heavy Duty pipe wrench 10"	11A71459		
	Sledge hammer 900mm	11A71760	Heavy Duty pipe wrench 14"	11A71461		
	Long blade scraper 48x300mm	11A73749	Aluminium Tool Case with Foam 1350x356x114mm	11A51055		

### 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/mm <sup>2</sup>	
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/mm <sup>2</sup>	

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.