

NON-SPARKING SAFETY SET - 37PCS

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NON-SPARKING TOOLS

37 PCS SAFETY SET

37 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.

BERYLLIUM COPPER ALLOY

Non ferrous substance in the composition makes it safer when non-magnetic applications are required.

ALUMINIUM BRONZE ALLOY

Minimum ferrous component makes them not 100% non-magnetic, although its low magnetism make it appropriate for non critical non-magnetic applications.

BERYLLIUM COPPER ALLOY

Designation:	Content:	Item No.:	Content:	Item No.:	Weight:	Item No.:
SAFETY SET 37 PCS CU-BE	Combination wrench 10mm	11A70174	Hexagonal key 8mm	11A70397	13 Kg.	11A74384
	Combination wrench 11mm	11A70175	Hexagonal key 10mm	11A70399		
	Combination wrench 12mm	11A70176	Combination pliers 200mm	11A70102		
	Combination wrench 13mm	11A70177	Diagonal cutting pliers 160mm	11A70107		
	Combination wrench 14mm	11A70178	Swedish pipe wrench 45° 1.1/2"	11A70129		
	Combination wrench 15mm	11A70179	Adjustable wrench 10"	11A70118		
	Combination wrench 17mm	11A70181	Adjustable wrench 12"	11A70119		
	Combination wrench 19mm	11A70183	German type hammer 310mm	11A70497		
	Combination wrench 22mm	11A70186	Stoning hammer 2 Kg	11A70513		
	Combination wrench 24mm	11A70188	Electrician screwdriver 5x100mm	11A72306		
	Groove joint 10"	11A70110	Electrician screwdriver 8x150mm	11A71585		
	Knife 250mm	11A71613	Philips screwdriver PH1	11A71595		
	Scraper 50mm	11A70474	Philips screwdriver PH3	11A71597		
	Brush 4x16x240mm	11A61581	Cylindrical cold chisel 20x200mm	11A73796		
	Hexagonal key 2mm	11A70391	Cross cutting chisel 200mm	11A73780		
	Hexagonal key 3mm	11A70392	Taper punch 5, 150x10mm	11A70429		
	Hexagonal key 4mm	11A70393	Taper punch 10, 150x14mm	11A70434		
	Hexagonal key 5mm	11A70394	Scissors 225mm	11A70529		
	Hexagonal key 6mm	11A70395	ABS tool case 464x335x212mm	11A50995		

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ALUMINIUM BRONZE ALLOY						
Designation:	Content:	Item No.:	Content:	Item No.:	Weight:	Item No.:
SAFETY SET 37 PCS AL-BRON	Combination wrench 10mm	11A70686	Hexagonal key 8mm	11A71293	13 Kg.	11A74385
	Combination wrench 11mm	11A70687	Hexagonal key 10mm	11A71295		
	Combination wrench 12mm	11A70688	Combination pliers 200mm	11A70532		
	Combination wrench 13mm	11A70689	Diagonal cutting pliers 160mm	11A70537		
	Combination wrench 14mm	11A70690	Swedish pipe wrench 45° 1.1/2"	11A71466		
	Combination wrench 15mm	11A70691	Adjustable wrench 10"	11A71453		
	Combination wrench 17mm	11A70693	Adjustable wrench 12"	11A71454		
	Combination wrench 19mm	11A70695	German type hammer 310mm	11A71752		
	Combination wrench 22mm	11A70698	Stoning hammer 2 Kg	11A71768		
	Combination wrench 24mm	11A70700	Electrician screwdriver 5x100	11A72308		
	Groove joint 10"	11A70540	Electrician screwdriver 8x150	11A71592		
	Knife 250mm	11A71614	Philips screwdriver PH1	11A71599		
	Scraper 50mm	11A71624	Philips screwdriver PH3	11A71601		
	Brush 4x16x240mm	11A61581	Cylindrical cold chisel 20x200	11A73797		
	Hexagonal key 2mm	11A71287	Cross cutting chisel 200mm	11A73781		
	Hexagonal key 3mm	11A71288	Taper punch 5, 150x10	11A71475		
	Hexagonal key 4mm	11A71289	Taper punch 10, 150x14	11A71480		
	Hexagonal key 5mm	11A71290	Scissors 225mm	11A70546		
	Hexagonal key 6mm	11A71291	ABS tool case 464x335x212mm	11A50995		



Non-Sparking Tools cannot reach the hardness of conventional tools. For this reason, the use of Non-Sparking Tools has to be carried out with special care, avoiding overstraining, heating, etc.

To avoid damage being caused to both tool and fastener, it is necessary to always ensure that the correctly sized spanner/wrench/screwdriver is selected. Due to the reduced strength and wear resistance of Non-Sparking alloys selecting the correctly sized tools becomes essential to avoid premature wear and early deterioration of the tool.

Non-Sparking Tools must not be the only preventive measure in areas which the items are designed for. Other items, clothes or present material must also be adequate for non-sparking purposes.



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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 ²	
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 ²	

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.