



**CERTIFIED
PREMIUM
INDUSTRIAL
TOOLS**



WHITE PAPER

INOX TOOLS

Clean and durable

Building a safer world

EGA *Master*
ART IN INNOVATION

BE SAFE...BE EFFICIENT

INOX TOOLS

stainless steel

420 stainless steel contributes to lower contamination and rusting, in compliance with clean room environment requirements.

Health & Safety is already a priority that in most workplaces. In certain work environments, health & safety can be directly related to the equipment and tools used by the employees.

EGA Master has developed a new range of stainless steel, 420 stainless steel contributes to lower contamination and rusting, in compliance with clean room environment requirements.

Property required	Where needed	Sectors	Why not carbon steel	Why stainless steel
Zero or low tolerance to contamination and particles	Sterile production in critical environments	Laboratories	They can only be sterilized few dozens of times, as the chrome plating used to avoid rust will deteriorate and chip off with time, contaminating the process	Materials and finishing used in their production enables sterilizing them thousands of times
		Biotech and biomedical		
		Cleanrooms		
		Pharmaceutical		
		Nutrient production		
		Nuclear industry		
		Silicone wafer production		
		Food processing		
		Wet process facilities		
Avoiding premature rust of parts by particle contamination	Using tools on Stainless Steel components such as screws, nuts, washers, pipes, bars, etc	Ship building	Carbon steel tools can leave small particles on stainless steel components, which will get contaminated, and make them rust	Stainless steel tools will not contaminate other SS components and thus not make them get rusted
		Construction		
		Manufacturing		
		Automotive		
		Aeronautics		
		Marine applications		
		Power		
		Chemical Industries		
Increasing tool lifetime	Corrosive environments	Naval (vessels /ship maintenance)	Carbon steel tools, even when they are chrome plated, will rust quickly in highly corrosive areas, leaving them unusable and having to replace them frequently	Stainless steel is a low carbon steel enriched with above 10% chromium, which allows the formation of an invisible chromium oxide layer that protects the core from rusting. Even when the layer is damaged chemically or mechanically, the oxygen of the environment will repair the layer again
		Subaquatic		
		Offshore (Oil & Gas/ Wind Power...)		
		Nuclear Power plants		
		Chemical industries		
		Humid environments		
		Wet processing		
		Water desalination		
		Salt production		
		Water treatment plants		

Like with carbon steels, there are dozens of different stainless steels, each of them presenting different properties for different applications. Some are more resistant to rust, some other are stronger, some harder... But none of them is best in all properties.

EGA Master has chosen 420 Stainless steel for the manufacturing of its tools, since it is the one that offers the best combination of all properties important for the manufacturing and use of stainless steel tools:

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Hardness	38-48HRc
Tensile Strength	1200 – 1500 N/mm2 (MPa)

PROPERTIES	APPLICATION & BENEFITS
Avoiding contamination	No iron or chrome-nickel contamination
Sterilization	Thousands of sterilizing processes
Durability	Combination of hardness, resistance and antirust protection makes it most durable
Cost	Being a mass production alloy together with having good manufacturing properties makes it most cost effective for tool manufacturing

MAT: 420		
Composition	C	0,16-0,25%
	Mn	≤ 1,00%
	Si	≤ 1,00%
	Cr	12% – 14%

In EGA Master we believe that prevention is the most effective measure to increase safety and reduce costs and inefficiencies in workplace operations. Eliminating the risk of ferrous transfer is a key factor for increasing profitability on the long term, while keeping processes, and people, safe.

CAUTION 

These tools are not classified as non-magnetic but tools made of martensitic – ferromagnetic stainless steel whose magnetic permeability is much higher than the unit.



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QUESTIONS AND ANSWERS

1- What grade of Stainless Steel should be considered when purchasing INOX tools?

There are multiple types of stainless steel, some more resistant to rust, some other are stronger, some harder. There isn't a single type that is the best across all properties, so the application or field of use of the tool determines which is the best type for that application.

EGA Master's INOX range is manufactured with 420 Stainless Steel, which is the type that offers the most balanced combination of all properties. This range has been developed with the needs of food & beverage companies and laboratories in mind. The products are therefore more durable when used in activities that require sterilization.

2- Can handles used in INOX tools also be disinfected?

EGA Master's product range is the most complete in the industry. We always strive for offering a one stop solution to our customers, and therefore we offer different types of INOX tools, including those 100% made out of INOX material, and those that maintain plastic components such as, for example, plier or screwdriver handles.

For environments where the products need to be sterilized or disinfected, tools that are 100% made out of INOX would be the ones recommended.

3- Which are the main applications for INOX tools?

INOX tools are best suited for environments sterilization of the tools, need to avoid othe particle contamination or corrosive environments that involve soft acids.

Some of the industries that commonly have such requirements include the food and beverage, laboratories, pharmaceutical industry or the nuclear industry.

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4- Which are the main benefits of INOX tools Vs Carbon Steel tools?

The following are the main properties and benefits of INOX tools:

- Avoid contamination
- Resist thousands of sterilization processes
- Increased durability as a result of the hardness, resistance and anti-rust properties
- Good cost benefit ratio considering it is and allow that is mass produced and has good manufacturing properties.



PRESENTATION

EGA Master is a European manufacturer of Premium industrial tools for the most demanding industrial users. It offers a complete one-stop solution based on continuous innovation that significantly improves safety and efficiency.

The range currently includes Industrial tools, Pipe tools, 1000V Insulated tools, ESD Electro-Dissipative tools, Non-sparking tools, Titanium non-magnetic tools, Anti-drop tools, Stainless steel tools, Pneumatic tools, Hydraulic Tools, Underwater tools, ATEX-certified Intrinsically-Safe Explosion-Proof Instruments and Tool Control Systems.

EGA Master products and solutions are used by the most demanding industries such as aerospace, military, automotive, shipbuilding, railway, power, construction, oil & gas or mining.

Some end users of EGA Master are companies and institutions such as Exxon Mobil, Shell, Airbus, United Nations, NATO, Coca Cola, Audi, Volkswagen, Nissan-Renault, Mercedes-Benz, Siemens or Philips. You can find a list of our most important end users, as well as some case studies in the following link: (<https://www.egamaster.com/en/references>).

Relevant facts about EGA Master:

- Exports 90% of its production to over 150 countries across five continents.
- Is ISO 9001, ISO 14001, ISO 37001 and ISO 45001 certified.
- Offers unlimited life-time guarantee for its tools.
- Is the most awarded tool manufacturer, as evidenced by the attached long list of awards.



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SOME END USERS

ESAOTE MEDICAL

France

Riccardo Kance
Service manager

"We are satisfied with our collaboration with EGA Master since we had a specific need for the maintenance of our MRI machines, and their tools (titanium non-magnetic tools) and their advice helped us to create Special tools sets that we can use during our on-site interventions"

MSC MEDITERRANEAN SHIPPING COMPANY

Italy

Luigi Staccoli
Chief Procurement Officer

"Our business requires trustworthiness, flexibility and fast reactions. We have found all these traits in EGA Master and they are supporting our operations with quality products, tailor made solutions and state of the art service level"

COCA-COLA

Cabo Verde

António Barros
Technical Supervisor

We are very satisfied with the personalization by laser aster tools, as well as with the company's after-sales service"

NESTLÉ

Portugal

Miguel Pinto
Health and Safety Department

"Due to the various solutions, it presents, especially in terms of safety tools and even more so with control systems, meeting the requirements of Industry 4.0, EGA Master is undoubtedly an excellent partner when it comes to the areas of production and maintenance and safety"

TESTIMONIALS



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