# Beverage Capability





## Also available from Parker domnick hunter



- Complete Process Product Filtration Range
- Process Filter Datasheets
- Full Range of Process Housings
- Integrity Testing Equipment



- Parker domnick hunter Complete Product Range
- Process Filter Datasheets
- Full Range of Process Housings
- Integrity Testing Equipment



- Full TSG Capability
- Dedicated Support Team
- Contract Support
- Technical Analysis

For more information please contact:

0191 410 5121

dhprocess@parker.com www.domnickhunter.com



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# **Process Filtration**

### ....providing complete filtration solutions

Parker domnick hunter specialises in the manufacture and supply of high quality products for the clarification, stabilisation and sterilisation of liquids and gases, providing full scaleability from membrane flat stock discs to multi-element filter systems. Each filter range has been specifically developed for industry requirements.

We have a vast range of filtration experience enabling us to provide innovative and cost effective solutions for all your filtration requirements.

Parker domnick hunter's commitment to service is reflected in our comprehensive before and after sales service.

Our worldwide assistance extends to on-site evaluations, design, manufacture, validation, quality control and ongoing support long after the filters are installed.

We supply the best products for you, when and where you need them.

In 2005 domnick hunter, became part of the Parker Hannifin Corporation, with annual sales exceeding \$10 billion, Parker Hannifin is the world's leading diversified manufacturer of motion and control technologies and systems.

We have a vast range of filtration experience enabling us to provide cost effective solutions for all your filtration requirements. We have the capability to work across application areas including:

- Biopharmaceutical
- Beverage
- Chemical
- Electronics
- Fermentation

- Food and Dairy
- Healthcare and Cosmetics
- Hospita
- Paints and Inks
- Petrochemical





# Water

## clear options, clear results

Water is an essential but expensive commodity. It has many uses within beverage production and the level of treatment required differs according to the source and quality of the incoming water, as well as the application that it is to be used for.

Water for general use will require coarse clarification to remove larger particles. This can be economically achieved using general clarification filters from the PROSPUN or PROPLEAT ranges. The other extreme is that water used for bottle washing or for blending should be sterile to ensure that no extraneous microorganisms are introduced. The BEVPOR range of polyethersulphone (PES) membrane filters can be used for water sterilisation. For intermediate production stages and make-up of CIP solutions, where the water is used to clean and sanitise pipework, bottling equipment and process filters, fine clarification offered by PREPOR GF and PEPLYN range filters are ideal.

- Wide range of retention ratings provides coarse and fine clarification and sterilising options.
- Options to suit filtration-only and multi-barrier treatment.
- High mechanical strength and chemical resistance enable washing and regeneration of the filters to increase service life.
- Positive impact on quality assurance and HACCP frameworks.





# Steam

## for general plant and culinary applications

Steam used to sterilise product contact surfaces should be of culinary quality to ensure that it does not contaminate the product with particles or chemicals that could be damaging to the quality of the product or hazardous to the consumer. The water quality used for culinary steam generation is addressed in The Food and Drugs Administration's Code of Federal Regulations. The quality of the water and permitted boiler additives are addressed specifically in the following Code of Federal Regulations:

### Water Quality: CFR Title 40 Parts 141,142 and 143

and

Boiler Additives: CFR Title 21 Chapter 1, Section 173.310

Other aspects to it's treatment are provided in 3-A standard 609-03. This states that pipework and associated equipment should be constructed from 300-series stainless steel and that filters used for particulate removal should be capable of retaining >95% of particles of size 2 micron or larger.

**Parker domnick hunter** 1 micron rated sintered and stainless steel filter elements meet and exceed the requirements for culinary grade steam quality. In addition Parker domnick hunter provides a number of steam filtration options for general and culinary use together with a comprehensive guide to their selection.

- Stainless steel housing and filter cartridges for general or culinary use.
- Sintered and pleated fibre options provide wide sizing options.
- Jumbo range for high volume applications.
- Comprehensive guide to steam quality guidelines, filter selection and sizing.



	Model	With	Without	Nitrogen Outlet Flowrate – Nm3/hr (ATP) v Oxygen Content						
		Compressor	Compressor	10ppm	100ppm	0.1%	0.5%	1%	2%	3%
MAXIGAS MIDI	N2MID350		٠	0.6	1.0	16	2.6	3 1	4.0	N/A
	N2MID351	•		0.0	1.0	1.0	2.0	5.1	4.0	N/A
	N2MID600		•	0.9	1.5	2.6	3.9	4.6	6.1	N/A
	N2MID601	•								
SINGLE BANK MAXIGAS	N2MAX104		•	1.3	2.2	4.5	7.6	9.0	11.8	13.8
	N2MAX106		•	1.9	3.2	6.7	11.4	13.5	17.7	20.7
	N2MAX108		٠	2.6	4.4	9.0	15.3	18.0	23.6	27.6
	N2MAX110		٠	3.2	5.3	11.3	19.1	22.6	29.5	34.5
	N2MAX112		٠	5.2	8.4	18.4	30.8	36.4	41.2	47.8
	N2MAX116		٠	6.9	11.2	24.5	41.0	48.5	52.9	61.4

Performance data based on 6 barg (87 psig) air inlet pressure, 20 °C – 25 °C (68 °F – 77 °F) ambient temperature. Consult Parker domnick hunter for performance under other specific conditions.



# Modified Atmosphere Packaging

## improving product quality and extending shelf-life

MAP or 'gas flushing' as it is also known, is an increasingly popular technique used to easily and economically improve product guality and extend shelf-life.

Flushing packaged food and beverage with inert high purity nitrogen retards aerobic spoilage and oxidative deterioration by typically reducing the oxygen level in the product to below 1% so that food tastes as good as the day it was packaged.

Nitrogen is primarily used to reduce the oxygen content within packaging and to avoid product deterioration. A secondary reason for using nitrogen is as a filler gas to provide a pressurised atmosphere that prevents package collapse, this is an important consideration for consumer brands.

#### Why MAXIGAS?

MAXIGAS is a cost effective alternative to other nitrogen sources with no on-going costs such as refills, order processing or delivery charges. It is also a safer alternative to manual handling of high-pressure nitrogen gas cylinders.

Production downtime is minimised due to the permanent availability of an on-demand nitrogen supply, giving manufacturers increased control. MAXIGAS requires minimal maintenance and can also bring valuable space saving advantages.

The development of filling machines with integrated gas flushing capabilities and the supply of 'food grade' nitrogen by Parker domnick hunter allows food manufacturers and beverage to enhance the quality of their products.





![](_page_14_Figure_0.jpeg)

# Carbon Dioxide

## ensuring freshness from bulk storage to uncorking the bottle

Carbon dioxide is used within beverage production for carbonation of the finished product and for inert storage of flavourings.

Quality Guidelines for producers of beverage  $CO_2$  are issued by organisations such as the International Society of Beverage Technologists (ISBT) in the US and the European Industrial Gases Association (EIGA). However, potential  $CO_2$  impurities may still occur as a result of trace contaminants being carried over in the source gas or by being introduced into the bulk liquid  $CO_2$  during storage and transportation.

In response to increased awareness to the impact on beverage characteristics that potential impurities can have, Parker domnick hunter has developed a range of PCO2 carbon dioxide gas purifiers, designed to act as quality incident protection units to help in protecting the final beverage against possible flavour defects and hazards. Potential  $CO_2$  impurities known to have flavour impact on beverages include volatile organic compounds (VOCs), aromatic hydrocarbons, acetaldehyde and sulphur compounds.

Parker domnick hunter's unique PCO2 systems are recognised as the industry's preferred choice for  $CO_2$  polishing systems and are used in over 80 countries worldwide.

Installed downstream of a liquid CO<sub>2</sub> evaporator the PCO2 system provides;

- Added security of  $CO_2$  quality.
- Protection against impurities known to result in flavour defects.
- Effective at removing a combination of potential contaminants.
- Low cost, easy maintenance using disposable cartridge.
- Compact, modular design to simplify sizing and expansion.

![](_page_14_Picture_13.jpeg)

![](_page_15_Figure_1.jpeg)

# **Compressed Air**

## selecting the ideal management system for your needs

The quality of air required throughout a typical compressed air system can vary. The extensive range of purification equipment available from Parker domnick hunter is ideal for both centralised and decentralised compressed air systems. This allows the user to tailor the quality of air for each specific application, from general purpose ring main protection, through to critical clean dry air (CDA) point of use.

Parker domnick hunter can tailor its range of purification equipment to exactly match system requirements, ensuring both capital and operational costs are kept to a minimum.

To achieve the levels of cleanliness specified by ISO 8573.1 2001 a careful approach to system design, commissioning and operation must be employed.

It is highly recommended that the compressed air is treated prior to entry into the distribution system as well as at each usage point or application.

This approach to system design provides the most cost effective solution to system purification as it not only removes the contamination already in the distribution system, it ensures that only the most critical areas receive air treated to the highest level.

![](_page_16_Figure_7.jpeg)

To Application

- International system of air quality classification.
- From compressor house to point of application.
- See publication 17 400 4765 for detailed information.

![](_page_16_Picture_11.jpeg)

![](_page_17_Figure_0.jpeg)

# **Compressed Air Applications**

high quality compressed air from generation to application

Compressed air can be an expensive commodity if not efficiently managed. As well as the primary costs associated with the production of compressed air and losses from leaking distribution systems, poor management of compressed air can lead to a rapid deterioration of the distribution system, failure of equipment due to oil, water and particulate carry-over, and bacterial traps which cause sensory taints in the final product.

Management of compressed air falls into three main categories:

- Effective removal of all contamination in the form of dirt, oil, water and microorganisms.
- Minimising pressure losses between the compressor and the point of use.
- Eliminating losses from the system due to leaks, uneconomical regeneration of drying plant and inefficient condensate drains.

Parker domnick hunter offers unrivalled expertise in the purification of compressed air and works in partnership with many of the world's leading compressor manufacturers. In order to explain the various forms of compressed air treatments Parker domnick hunter has published a guide to ISO 8573.1:2001 Air Quality Classes. This provides an in-depth guide to identifying the air quality that best suits the needs of different applications.

![](_page_18_Figure_8.jpeg)

- **Easy to understand guide to air quality classes.**
- Filters for coalescing oil aerosols from the compressed air stream.
- Range of desiccant and refrigeration dryers to suit varied needs.
- Sterilising filters for high pressure (compressor) lines.
- Sterilising filters for low pressure (blower) applications.

![](_page_18_Picture_14.jpeg)

![](_page_19_Picture_0.jpeg)

![](_page_19_Figure_1.jpeg)

![](_page_19_Figure_2.jpeg)

# **Chilling** creating the right environment

Parker domnick hunter Hiross has more than 30 years experience in the manufacture of industrial cooling systems. In recent years a wide range of chillers for the production of chilled water has been introduced. Coupled with a sales and engineering team capable of providing customised solutions to meet individual needs, this provides a dedicated approach to the requirements of beverage applications.

The technology is characterised by a high refrigeration yield for low electrical consumption. Combined with a small footprint this leads to a compact, space-saving and energy efficient solution.

Chillers are available for internal and external installation and are equipped with microprocessor intelligence providing precise control and automatic function.

- Standard and custom designed options provide unrivalled choice.
- Wide range of cooling capacities.
- Minimal space-saving footprint.
- Low energy consumption.

![](_page_20_Picture_8.jpeg)

![](_page_21_Figure_0.jpeg)

![](_page_21_Figure_1.jpeg)

# **HACCP** and Integrity Testing

### monitoring critical control points

#### HACCP

If precautionary measures are not in place during production, products may be contaminated biologically, chemically or physically. "Hazard Analysis of Critical Control Points" (HACCP) is a food safety management system acknowledged by governments, regulatory control bodies and the food industry as a system that identifies and monitors specific food safety hazards and risks.

The HACCP programme should be applied from the production, supply and handling of unprocessed material, to the processing, distribution and consumption of the final product. Global markets are demanding more than ever that potential food safety risks are managed.

#### ASSURED PERFORMANCE

The ability to test the integrity of a filter provides a valuable quality assurance tool. A properly conducted integrity test provides assurance that the filter will fulfil the role that it was designed for, ensuring that it is fit for purpose BEFORE a process run is initiated. As well as installing confidence in the filter, recording integrity test results demonstrates sound process quality monitoring and provides a test protocol that fits well into a HACCP framework.

### VAL*AIR*DATA II

VALAIRDATA II is based on an aerosol integrity test, making it the most effective and practical integrity test for sterile gas filters.

### BEVCHECK

BEVCHECK is a hand-held instrument that provides a convenient and easy means of carrying out pressure decay and diffusional flow integrity tests, on liquid filters or sterile gas filters.

![](_page_22_Picture_11.jpeg)

![](_page_22_Picture_12.jpeg)

![](_page_23_Figure_0.jpeg)

# **Technical Support Group**

dedicated support team

**Parker domnick hunter** has a multi-disciplinary team of scientists and engineers dedicated to the technical support of our products. Situated at facilities around the globe including centres of excellence in Birtley, UK and Oxnard, USA.

Through the Technical Support Group (TSG) and Laboratory Service Group (LSG), our teams assist clients in the selection and design of filtration systems coupled with ongoing support including: validation services, instrument servicing and calibration, contract testing, delivery of training programmes, on-site support (system optimisation, trouble shooting) and an advisory service.

The commitment of our people is backed up by state-of-the-art facilities. Our Birtley site has been the subject of a major investment programme to extend existing laboratory, manufacturing and training capabilities. This supports our commitment to provide world-class products and support services.

- Filtration process validation.
- Industry tailored training.
- Process optimisation.
- Instrument support.

![](_page_24_Picture_9.jpeg)

		Products			<b>S</b>	Also available for sampling and small scale applications.
Liquid Prefilters	PEPLYN HD	PEPLYN HA	PREPOR GF	PROPLEAT	PROSPUN	BAG FILTERS
Clarification	S AL	SAL				
Filtration Media	Polypropylene	Polypropylene	Glass microfibre	Polypropylene	Polypropylene	Various
Retention Rating	5 – 35 microns absolute	3 - 100 microns absolute	2 – 10 microns absolute	1 - 75 microns	0.5 - 75 microns	Medium to coarse
Key Benefits	<ul> <li>Graded density and increased depth resulting in high dirt holding capacity</li> <li>Ideally suited to high volume, forward flow processes</li> </ul>	<ul> <li>Graded density results in high dirt holding capacity</li> <li>Optimised pleat configuration maximises backwash efficiency</li> <li>Wide range of chemical resistance improves chemical regeneration</li> </ul>	<ul> <li>High voids volume glass microfibre media provides high dirt holding capacity</li> <li>Higher flow than polypropylene media results in low pressure drop even in viscous liquids</li> </ul>	<ul> <li>Economical general clarification</li> <li>Higher area than spun products provides longer life to blockage</li> </ul>	<ul> <li>Economical general clarification</li> <li>Excellent first-stage protection of downstream processes</li> </ul>	<ul> <li>Economical general clarification in non-critical applications</li> </ul>

Liquid Prefilters	PREPOR GP	PREPOR PP	FILTER SHEETS	LENTICULAR FILTER	CARBOFLOW MX	
Stabilisation		SAL				
Filtration Media	Glass microfibre Polypropylene	Polypropylene	Cellulose / diatomaceous earth	Cellulose / diatomaceous earth	Extruded activated carbon	
Retention Rating	0.6 – 1.5 microns stabilising	0.6 – 1.5 microns stabilising	Stabilising – coarse and powder support grades	Stabilising - coarse	Adsorptive colour, odour and taste removal	
Key Benefits	<ul> <li>Composite media provides high strength and dirt holding capacity</li> <li>High efficiency removal of spoilage organisms and yeast</li> </ul>	<ul> <li>Maximised chemical and mechanical resistance for repeated regeneration</li> <li>Yeast removal and spoilage organism reduction</li> </ul>	<ul> <li>Adsorptive and mechanical filtration provides high clarity and physical stability</li> <li>Stabilising grades to remove yeast and spoilage organisms</li> </ul>	<ul> <li>Adsorptive and mechanical filtration provides high clarity and physical stability</li> <li>Stabilising grades to remove yeast and spoilage organisms</li> </ul>	<ul> <li>High capacity, long life</li> <li>Extruded media provides particulate reduction as well as adsorption</li> </ul>	
	<ul> <li>Improves filterability which increase the life to blockage of downstream membrane filters</li> </ul>	<ul> <li>Improves filterability which increase the life to blockage of downstream membrane filters</li> </ul>	yease and spondige organisms	<ul> <li>Convenient fully enclosed design</li> </ul>		

![](_page_26_Figure_0.jpeg)

![](_page_26_Picture_1.jpeg)

![](_page_26_Figure_2.jpeg)

For full range of Custom and Industry Specific Housings and Skids. Please contact Parker domnick hunter

### Products

# MAXIGAS

nitrogen generators

![](_page_27_Picture_3.jpeg)

- Convenient, Secure Supply
- The Safest Supply
- Generate The Right Purity
- Space Saving
- Easy to increase supply as required

You can now generate your own nitrogen gas at the press of a button – as much or as little as you need, at a fraction of the cost of your existing supply and at the purity your process requires. The generators are virtually maintenance free. Simply switch on and let your Parker domnick hunter nitrogen generator do the rest.

For more information publication number: 174004791

### ES2000 oil / water separators

![](_page_27_Picture_12.jpeg)

- Help to protect and maintain the environment
- Efficiently separate oil and water on-site and return up to 99.9% of the condensate to foul sewers
- Meet trade effluent discharge regulations
- Rapid payback over conventional disposal methods

Discharging oil contaminated condensate from compressed air systems is not only harmful to the environment, it is invariably illegal.

Oil spillages from industry do not have to be big to be serious. One litre of oil can cover 3500m<sup>2</sup> of water surface. One gallon of oil can cover 4 acres of water surface.

For more information publication number: 174004429

![](_page_27_Picture_20.jpeg)

OIL-X EVOLUTION has been designed from the outset with the key design focus concentrated in critical areas such as air flow management, filtration media selection and construction and the efficient removal of coalesced liquid. OIL-X EVOLUTION has also been designed to be fully compliant with the latest ISO8573.1 : 2001 air quality standards as well as the forthcoming ISO12500 standard for filter testing.

For more information publication number: 174004402

## **ED2000**

series condensate drains

![](_page_27_Picture_25.jpeg)

- Removes liquid condensate efficiently
- Saves valuable compressed air
- Protects downstream equipment and processes from condensate damage
- Help protect the environment

Consider the compressed air and energy losses associated with the common types of drain. What appears to be a good purchase could actually turn out to be the most expensive option. For example, a system using a single timed drain, could lose approximately  $0.062 \text{m}^3/\text{min}$  (2.18cfm) of air.

Over a full year of continuous operation that equates to approximately 32,798m<sup>3</sup> (1,142,669 ft<sup>3</sup>) of air lost! In energy terms that single drain would use 3,581 KW (4,804 hp) energy per year! Now multiply by every drain of that type in the system.

### Products

# **PNEUDRI**

desiccant dryers

![](_page_28_Picture_3.jpeg)

- Highest Quality Air
- Totally stops corrosion and damage
- Low installation costs
- Energy efficient

PNEUDRI cleans and dries compressed air down to -40 °C (-40 °F) PDP as standard and for critical applications, PNEUDRI can be supplied with a dewpoint of -70 °C (-100 °F) PDP.

Our award-winning modular design utilises Parker domnick hunter patented technology to provide the ultimate in uncompromising performance, security and reliability for your compressed air system.

For more information publication number: 174004759

### **CRD** refrigeration dryers

![](_page_28_Picture_12.jpeg)

- Environmentally friendly R407C refrigerant
- Energy efficient, low running costs
- Suitable for high ambient operating conditions up to 50°C (122°F) and inlet temperatures up to 60°C (140°F)

Remove water from any compressed system economically. Well proven refrigeration principles are at the heart of this reliable and complete product range.

Avoid corrosion, machinery failure and product spoilage. Reduce energy costs and improve productivity by installing a Parker domnick hunter refrigeration dryer with OIL-X EVOLUTION filtration.

Modern features include the latest technology ultra-compact modular aluminum cross flow heat exchangers with low differential pressure and energy efficient scroll compressors (most models).

## PCO2 carbon dioxide polishing filter

![](_page_28_Picture_20.jpeg)

- Ensures compliance with quality guidelines published by the International Society for Beverage Technologists (ISBT)
- Protects drinks manufacturing processes from vapour impurities

The Parker domnick hunter PCO2 range of carbon dioxide purifiers will remove harmful contaminants from  $CO_2$  used in the manufacture of beverages.

The PCO2 cartridge incorporates a mix of adsorbents that effectively remove the contaminants. The addition of a particulate retention filter, providing protection down to 0.01 micron, completes a package that will ensure  $CO_2$  conforms to the quality guidelines for carbon dioxide (published 1999) by the International Society for Beverage Technologists. (ISBT)

The Parker domnick hunter PCO2 Carbon Dioxide Polishing Filter, model: MF-5 is deigned to give point of use protection in draught dispense applications.

For more information publication number: 174004462

# HYPERCHILL

![](_page_28_Figure_28.jpeg)

- Standard custom designed options provide unrivalled choice
- Wide range of cooling capacities
- Minimal space-saving footprint
- Low energy consumption

Hyperchill is the new range of precision water chillers by Parker domnick hunter Hiross. The range covers cooling capacities from 2 to 360 kW. Each model is designed for safe and reliable operation, whatever the working conditions.

Flexibility and an extensive range of options ensure that Hyperchill operates continuously and efficiently whatever the conditions. All models accept water inlet temperatures up to 30 °C and water outlet temperatures down to 0 °C. Custom-designed alternatives for tower temperature glycol solutions are also available.

Australia, Victoria phone +61 (0)3 8720 9600 fax +61 (0)3 8720 9690 jason.cooney@domnickhunter.com

> China, Beijing fax +86 10 646 33521 china@parker.com

China, Shanghai fax +86 21 6283 8311 china@parker.com

India. New Dehli domnick@del3.vsnl.net.in

Japan, Kobe phone +81 (0)78 304 5351 fax +81 (0)78 304 5352

phone +86 21 5240 0220

phone +91 11 6166304 / 6188940

yumiko.sakai@domnickhunter.com

phone +86 10 646 33523

South Africa, Springs phone +27 (0)11 817 3600 fax +27 (0)11 817 3603 johan.botes@domnickhunter.com

USA, Oxnard phone +1 805 604 3400 fax +1 805 604 3401 toll free 1-877-784-2234 PAFsales@parker.com

Brazil. Sao Paulo phone +55 (0)11 3766 3977 fax +55 (0)11 3768 1421 hbdh@hbdh.com.br

Canada, Mississauga phone +1 905 820 7146 fax +1 905 820 5463 toll free: 1-888-342-2623

Puerto Rico. Ciales phone +1 787 871 5414 fax +1 787 871 4096

Sweden, Göteborg phone +46 (0)31 748 0610 fax: +46 (0)31 748 0621 soren.schou-jensen@parker.com

dh.iberica@domnickhunter.com

Denmark, Slangerup

fax +45 473 80643

phone +45 473 80644

skand@domnickhunter.com

phone +33 4 74 62 34 51

phone +49 (0)2154 48100

info@domnickhunter.com

fax +49 (0)2154 481010

phone +34 93 572 0050

fax +34 93 572 1585

fax +33 4 74 62 35 44

Germany, Willich

Spain, Barcelona

France, Villefranche sur Saône

info.france@domnickhunter.com

England, Birtley phone +44 (0)191 410 5121 fax: +44 (0)191 410 5312 dhprocess@parker.com

England, Sheffield phone +44 (0) 114 269 3999 fax: +44 (0) 114 269 1409 dhtechnologies@parker.com

Industrial Division England, Gateshead phone +44 (0)191 402 9000 fax: +44 (0)191 482 6296 dhindsales@parker.com

Fabrication England, Boldon phone +44 (0)191 519 0066

The Netherlands, Benelux phone +31 165 527 127 fax +31 165 394 461 benelux@domnickhunter.com

Italy, S. Angelo di Piove (PD) phone +39 049 971 2111 fax +39 049 970 1911

![](_page_29_Picture_32.jpeg)

Parker Hannifin Ltd Durham Road, Birtley, Co. Durham, England DH3 2SF Tel: +44 (0)191 410 5121 Fax: +44 (0)191 410 5312 Publication Reference: PD02/08 Rev. 2b

Malaysia, Petaling Jaya

phone +60 3 8024 3163

tan.cheng.hoe@domnickhunter.com

singapore@domnickhunter.com

enquirv@domnickhunter.co.th

fax +60 3 8024 3162

phone +65 6 744 4088

fax +65 6 744 9959

Thailand, Bangkok

fax +66 2 255 5340

phone +66 2 255 5305

Singapore

## www.domnickhunter.com

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