



Shuttle service

Sustainability - Safety - Quality



CARLO ERBA Reagents

Chemicals, Labware and Life Sciences for Laboratories and Industry

CARLO ERBA Reagents, a well-known brand with 150 years of history, operates at an International level in Analytical, Research and Industrial sectors with laboratories, development and production.

CARLO ERBA Reagents owns advanced manufacturing plants including three business premises in Italy, France and Spain.



Shuttle service

Stainless steel returnable containers to optimize solvent quality and the management of packaging waste

■ Improved safety

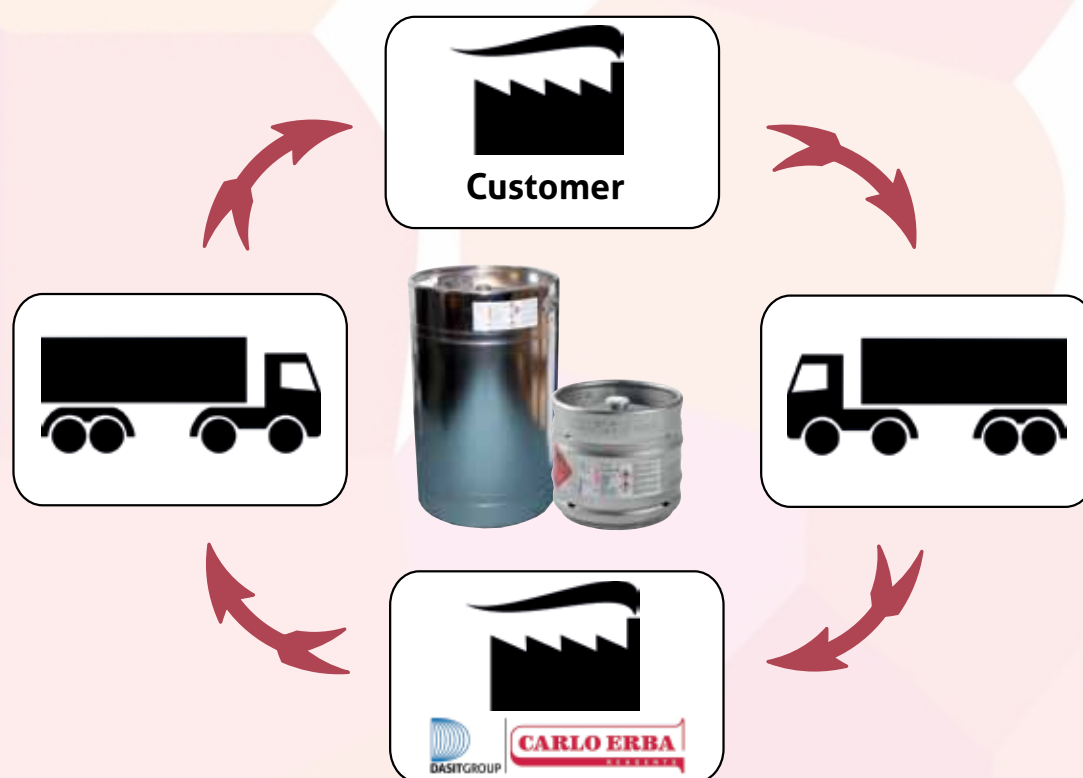
Easier handling and sampling thanks to a wide choice of connections.

An improved safety for the operators as well as for the process by reducing the exposure to solvents, No contaminated package waste to dispose of.

■ Environmental impact

Zero packaging waste, reduced environmental footprint.

Economy on the regulated destruction of disposable containers.



■ Quality preserved

The chemical compatibility in stainless steel shuttles is same as in glass and better than metal or plastic. Our stainless steel shuttle drums are fully welded, without crimping, a potential source of solvent contamination. All solvents are compatible with stainless steel, even for the highest qualities. They are very suitable for conventional HPLC or gradient qualities and solvents for analyzing pesticide residues. Reduction of the number of controls by increasing the size of the batch.

■ Efficient logistic

Each packaging is assigned to a single product and a single customer to reduce the risk of cross contamination. A defined number of shuttle drums is assigned to you based on your needs with regular rotations between your plant and ours.

It is calculated on the amount of product required for your usage, the number of workstations, the duration of storage and the rotation frequency. We handle the return of empty shuttle containers on a simple call from you.

Productivity gain

Production

- Allocation of the packaging for the product / customer
- Integration into the production cycle in the laboratory or workshop
- Easy emptying : by decanting (gravity), pumping or siphoning
- Original option of emptying by nitrogen pressure
- Customisation of volumes/weights per shuttle (pre-weighing) in order to match to the production batch size and reduce wastes.

Storage

- Best ratio volume/space
- Less withdrawals
- For IBC, monthly rental allows great flexibility for irregular needs
- Maneuverability
- The only technical solution for large volumes of high-purity solvents.

Quality

- Respect of the purity of the product contained due to the chemical inertness of the stainless steel
- Reduce the number of controls by increasing the size of the container
- Possibility to deliver containers with a representative sample for analysis
- No corrosion
- Easy care
- Customization possible
- Management of regulatory approvals

Transportation

- UN approval for each individual package, no overpack for shuttle drums over 10l
- Better mechanical protection, more security
- Small footprint
- Maneuverability



5 & 10l Stainless steel shuttle drums

- Compact
- Very handy with its handle
- Unbreakable
- Tamper-proof cap with Teflon® seal
- Possibility to use different delivery devices
- Certificate of analysis in each shuttle box



Technical data

Maximum pressure : 0.3 bar

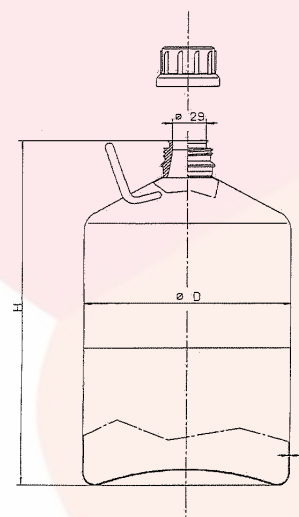
Material : AISI 304 stainless steel

Sheet thickness 1 mm

Closure : GL45 cap in PP plastic with tamper-evident seal and PTFE disc

Each shuttle of 5 and 10 liters is approved for the transport of dangerous materials (UN) and has an individual transport license.

Kind of packaging	Capacity (l)	D (mm)	H (mm)	Tare (kg)
5l	6,1	181	300	1,6
10l	12,2	229	365	2,4



25, 50 & 200l Stainless steel shuttle drums

Used in the laboratory as in production, stainless steel drums can be stacked, mounted on steel pallet and bring benefits such as :

- Fewer bottles to handle
- No breakage of the glass bottles
- Decreasing the number of sampling and analysis control
- Decreased level of solvent vapor in the laboratory
- Possibility of sealing or inviolability of bungs
- Significant reduction of storage space



Technical data

Maximum pressure : 0.5 bar

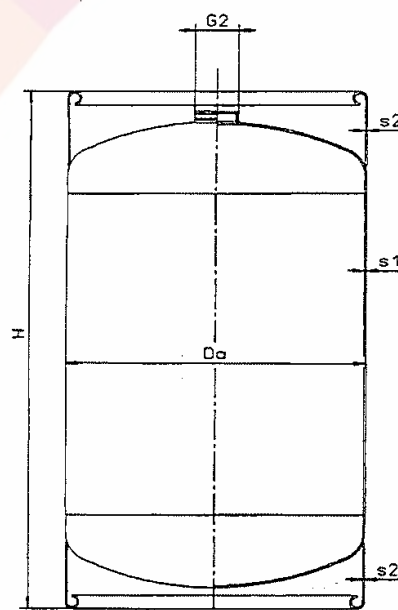
Material : AISI 304 stainless steel (316 on request)

2 side handles

Sheet thickness 1,7 mm

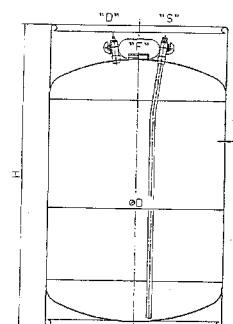
Closure : Central bung 2 "with screw cap, PTFE seal

Kind of packaging	Capacity (l)	D (mm)	H (mm)	Tare (kg)
25 l	33	400	365	9,5
50 l	50	396	530	12
100 l	110	457	880	30
200 l	225	600	960	43



Some 25 to 200 L stainless steel drums offer integrated draw-off equipment. They convey your solvent towards the process, machine or intermediate packaging:

- Under the action of an inert gas, with stainless steel or Téflon® piping
- Neutralising pollution risk
- With the possibility of adaptation with a level indicator or balance
- Reducing operator exposition to the vapors



IBC and Tankers from 500 to 30 000 l

A wide choice of IBC to meet precisely your requirements

The product type and usage determine the type of IBC of the material.

Stainless steel : for solvents from technical to the highest qualities

HDPE : for acid solutions, bases and aqueous mixtures

We offer you to fill up your own containers or to rent ours for a period suitable to you:

- IBCs in stainless steel (AISI 304 or 316) or HDPE
- Specific stainless steel IBCs for ammonia
- Pressurizable IBCs (4 bars)

and to benefit from our services :

- Certificate of analysis of the container
- Representative sample delivered with the IBC under request
- Computerized tracing of the maintenance and transport
- Full traceability of the product

We determine with you the choice of options to suit your needs.

Possible options:

- High Part : valve, additional stitching for various connections (nitrogen, temperature sensor, level sensor, etc .), input
- Lower part : valves (ball or butterfly), DIN connectors 40" or 50", reducers, quick couplings kind Swagelok ®, Staubli ®.



Aseptic IBC Type 460 C

Pressure tank



IBC Tankgo®

Accessories and withdrawal systems

CARLO ERBA Reagents offers a set of standard accessories and withdrawal systems including "on request" distribution or continuous push with nitrogen.

Several possibilities exist :

- Quick couplings to prevent venting solvents
- Tapping pipe

Standard Withdrawal systems

Withdrawal systems for 5 & 10 l stainless steel shuttles

- With push valve or ball valve or length of flexible pipe with dispenser
- Tapping pipe
- Nitrogen inlet
- Quick coupling with safety valve 1 bar



Example : For the distribution of several solvents at low pressure nitrogen - quality compatible HPLC

Accessories and withdrawal systems

Withdrawal systems for 25 to 200 l stainless steel shuttles

- Nitrogen inlet
- With a flexible or rigid pipe
- With rigid spout or flexible valve



System with quick coupling



Ref PEMFP48 for 25l shuttle drums
Ref PEMPF100 for 100l shuttle drums
Ref PEMPF200 for 200l shuttle drums

- Quick connector with push tap barrel with integrated dip tube.



Product list

- Please find below a non-exhaustive list of molecules that CARLO ERBA Reagents currently offers with shuttle service. The most common solvents are available in 5 to 200l shuttle drums and IBC. CARLO ERBA Reagents can supply various qualities from technical grade to the highest specific one (HPLC Isocratic to HPLC-MS, Pestipur® for determination of pesticides residue, Atrasol® for traces analysis, Spectrosol®, Anhydrous, Peptide synthesis, ERBApharm,) thanks to the compatibility with stainless steel packaging.

Product	Product
Acetone	Acetonitrile
Butanol-2	tert-Butylmethyl ether
Chlorobenzene	Chloroform stabilized with amylene or ethanol
Cyclohexane	Dichloromethane stabilized with amylene or ethanol
Diethanolamine 98%	Diethyl ether
Diisopropylether	n,n-Dimethylformamide
Dimethylsulfoxide	Ethanol 70%
Ethanol 95 denaturated	Ethanol 96
Ethanol absolute anhydrous	Ethanol absolute denaturated with 2% methylethylketone
Ethylbenzene	Ethyle acetate
Formaldehyde 10% v/v	Formaldehyde 35% m/m
Formic acid 80%	n-Heptane 99
n-Heptane mix of isomers	n-Hexane 95
n-Hexane 99	n-Hexane mix of isomers
Isohexane	Isooctane
Isopropyle acetate	Methanol
Methylcyclohexane	Methylpyrrolidone
n-Pentane 95%	n-Pentane 99%
Petroleum ether 35°-60°	Petroleum ether 40°-65°
Propanol-1	Propanol-2
Pyridine	Tetrahydrofuranne
Toluene	Water
Xylene	

- Example of mixtures and mobile phases that can be provided in stainless steel shuttle drums and IBCs from technical grade to HPLC, Pestipur® grade,....., according to your requirements.

Product	Product
Mobile phase Acetonitrile / Methanol	Mobile phase Acetonitrile / Propanol-2
Mobile phase Acetonitrile / TFA	Mobile phase Acetonitrile / Water
Mobile phase Acetonitrile with 0.1% (v/v) TFA	Mixture Dichloromethane / Methanol 80/20 v/v
Mobile phase Heptane/Ethanol absolute 50/50	Mixture Heptane/Ethanol absolute 70/30
Mobile phase Heptane/Propanol-2 30/70 v/v	Mixture Heptane/Propanol-2 50/50
Mobile phase Heptane/Propanol-2 60/40 v/v	Mixture Heptane/Propanol-2 80/20 v/v
Mobile phase Water / TFA	



Product list

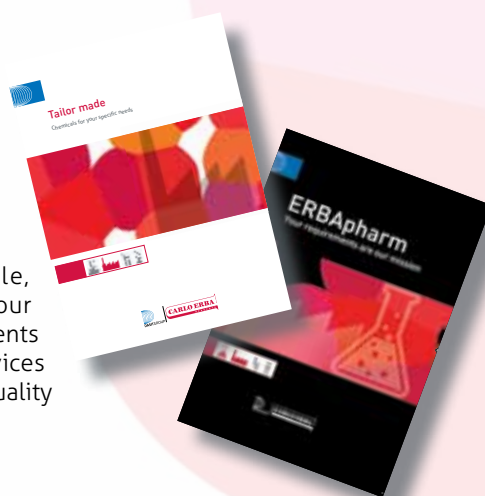
■ Products in specific IBC

Due to the specificity of some products, CARLO ERBA Reagents can also offer specific kind of IBCs. Our Tailor-made service studies the best solution considering regulatory requirements, chemicals properties of the product and safety of end user.

Examples

Product	Kind of packaging
Ammoniaque 32%	Pressured IBC
Ammonium hydroxide 20%	HDPE IBC
Sodium hydroxide 35%	Lost HDPE IBC
Sulfuric acid 94%	Lost HDPE IBC

Thanks to its own production sites easily adaptable, CARLO ERBA Reagents is also a partner of choice for your industrial needs in customised mixtures and packaging of solvents and salts and in purification of high purity solvents. These services can be linked to our dedicated shuttles service and to an exigent quality control able to fit your specific analysis requirements.



CARLO ERBA Reagents also offers in its Labware catalog complementary solutions to use, store and transport your solvents in-house in our daily business, as for the stainless steel safety containers described hereafter.

RÖTZMEIER
SICHERHEITSBEHÄLTER

- **Safety cans** : for in-plant use, designed for handling of small quantities (1 to 5 liters) - we offer metering cans (with precise metering device) and storage/screw cans (with screw cap), each of them in laboratory edition (polished surface) and industrial edition (unpolished).
- **Safety canister** : for in-plant use, designed for handling of medium quantities (5 to 20 liters) - we offer metering canisters (with self-closing metering device), storage/screw canisters (with screw cap) and tap canisters (with self-closing tap).





Shuttle service



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