ESRG
European Solvent Recycler Group

TOGETHER FOR LESS

EUROPE´S GREEN AGENDA

THE EUROPEAN SOLVENT RECYCLER GROUP'S RESPONSE TO THE CIRCULAR ECONOMY

INNOVATIVE SOLVENT RECYCLING
FOR A SIGNIFICANT REDUCTION IN CO_2

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WHAT ARE SOLVENTS?

Solvents are substances that can dilute or dissolve liquids, solids, or gases without causing chemical reactions with the substance being dissolved.

Large amounts of solvents are used in industry and manufacturing. After use, most are simply contaminated rather than consumed.

- Solvents are required for many applications including the paint, printing, coating, pharmaceutical, chemical and food industries.

- One of the uses within the chemical industry is the production of chemical substances that are then used elsewhere as raw and auxiliary materials.

- As industrial cleaners, solvents are used to clean components, textiles, or buildings - in this case, the solvents help to remove contaminants from the surfaces of the material.

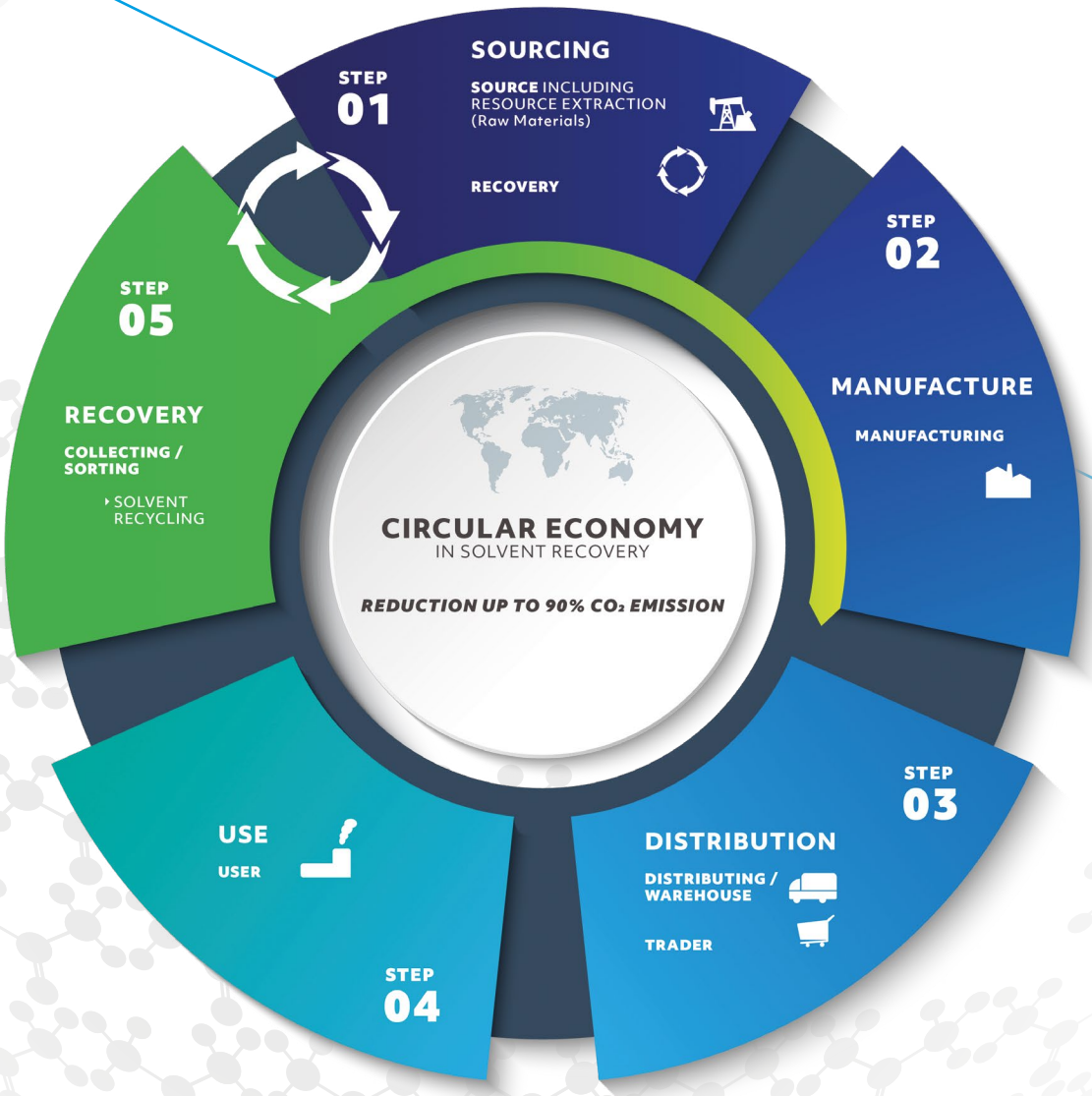
- In the field of surface treatment, solvents are used in coatings to offer corrosion protection, wear resistance or to improve the external appearance of a component.

SOLVENT RECYCLING

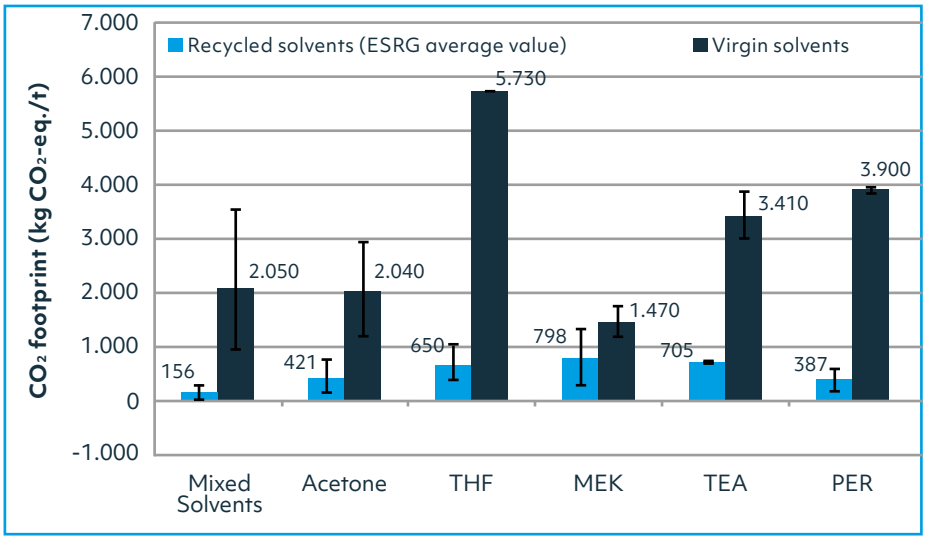
WHY?

THE MAJOR BENEFIT IS ...

... that solvent recycling reduces the use of resources and supports the legal requirement in European waste laws to consider a waste hierarchy that places recycling above energy recovery techniques.



- Through the policy of the Circular Economy the recycling of solvents contributes significantly to environmental protection and thus to sustainability. Our limited natural resources can be conserved through consistent recycling that makes it possible by avoiding the production of replacement materials, to reduce the energy used in the production of new goods that can help to avoid by up to 90% associated CO_2 emissions.



Compared with replacement new production of solvents, then solvent recycling supports the 'Circular Economy' and can avoid up to 90% of associated CO_2 emissions (THF: Tetrahydrofuran, MEK: Methyl Ethyl Ketone, TEA: Triethylamine, PERC: Perchloroethylene).

Source:
„Carbon Footprints of Recycled Solvents", Study for the European Solvent Recycler Group (ESRG), August 2013
https://esrg.de/pages/esrg-study-carbon-footprint.php

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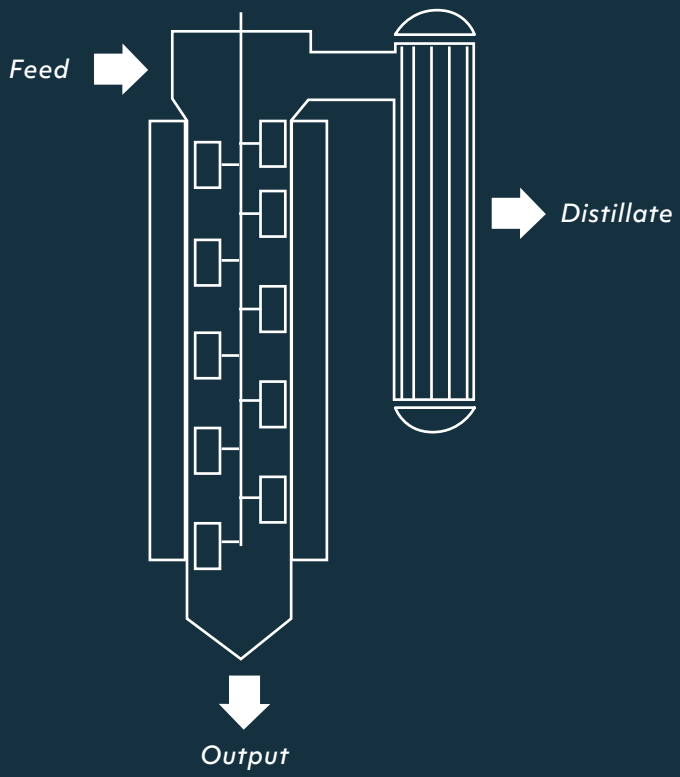
"Just because you can't see something, doesn't mean it's not there"
Willard Wigan

SERVICES

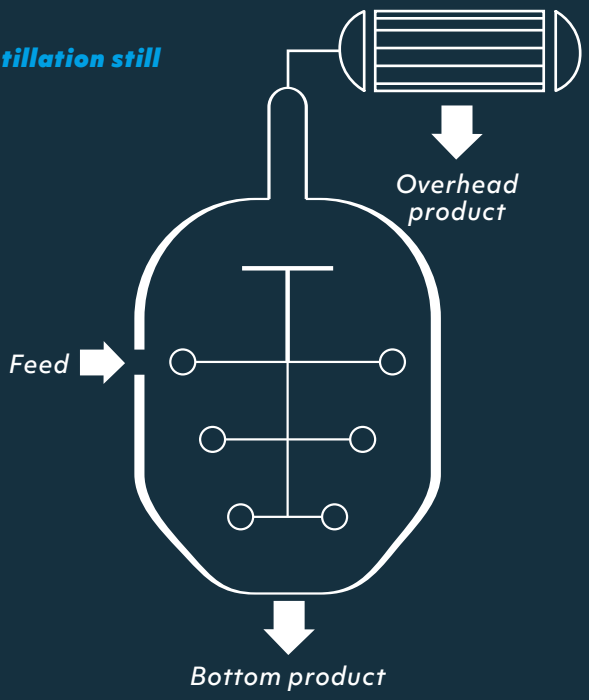
WE PROCESS FOR YOU

Typically, post use contaminated solvents arise from the chemical and pharmaceutical, paint and varnish, textile, and surface cleaning sectors. Depending on the type of solvent and the degree of contamination, various treatments, processing techniques and equipment are used in the regeneration process. Examples include vacuum distillation, fractional distillation, entrainer distillation, azeotropic distillation, short-path distillation. A distinction is usually made between continuous and discontinuous operation of the equipment.

Thin-film evaporator

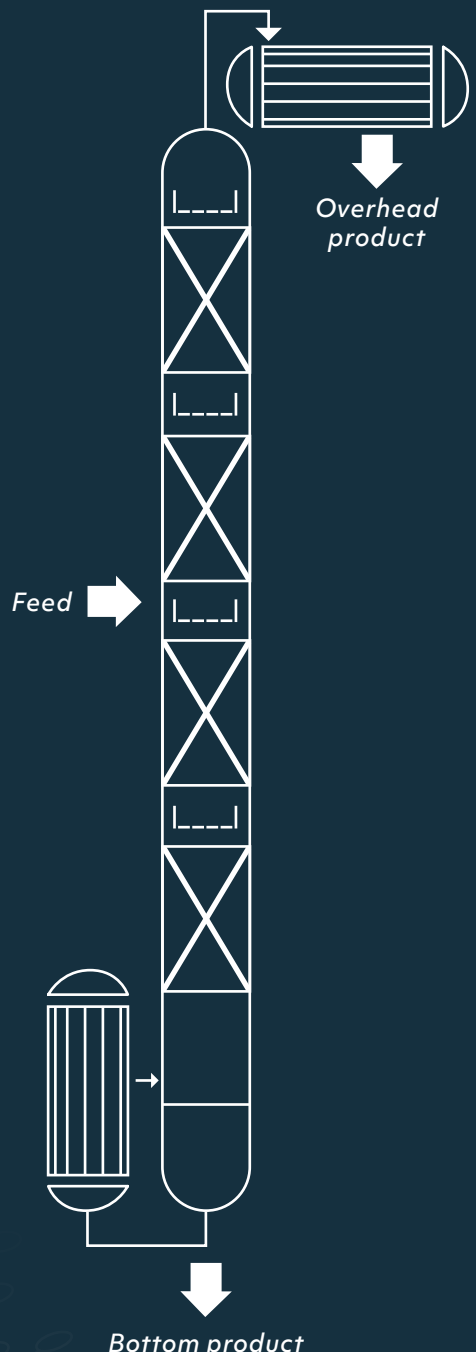


Distillation still

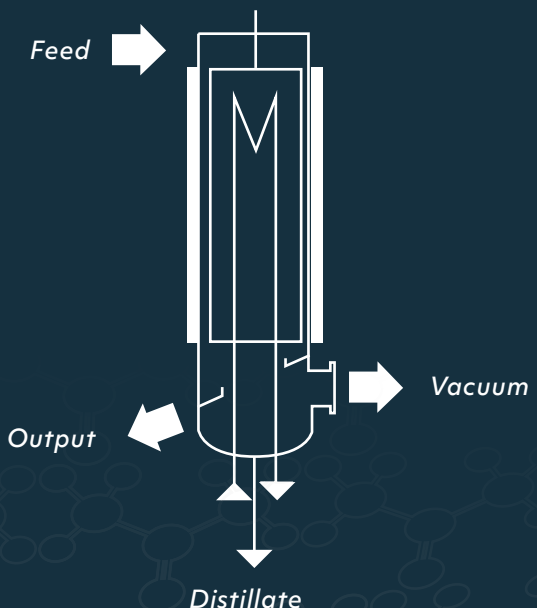


In addition to supporting the principle of sustainability in the context of the European Circular Economy Action Plan solvent recycling also has a very significant economic benefit: on the one hand, solvent distillates are usually more cost-effective than new materials, while on the other hand, solvent recycling can reduce the dependency on primary production and – related to this – on the availability of raw materials.

Distillation column

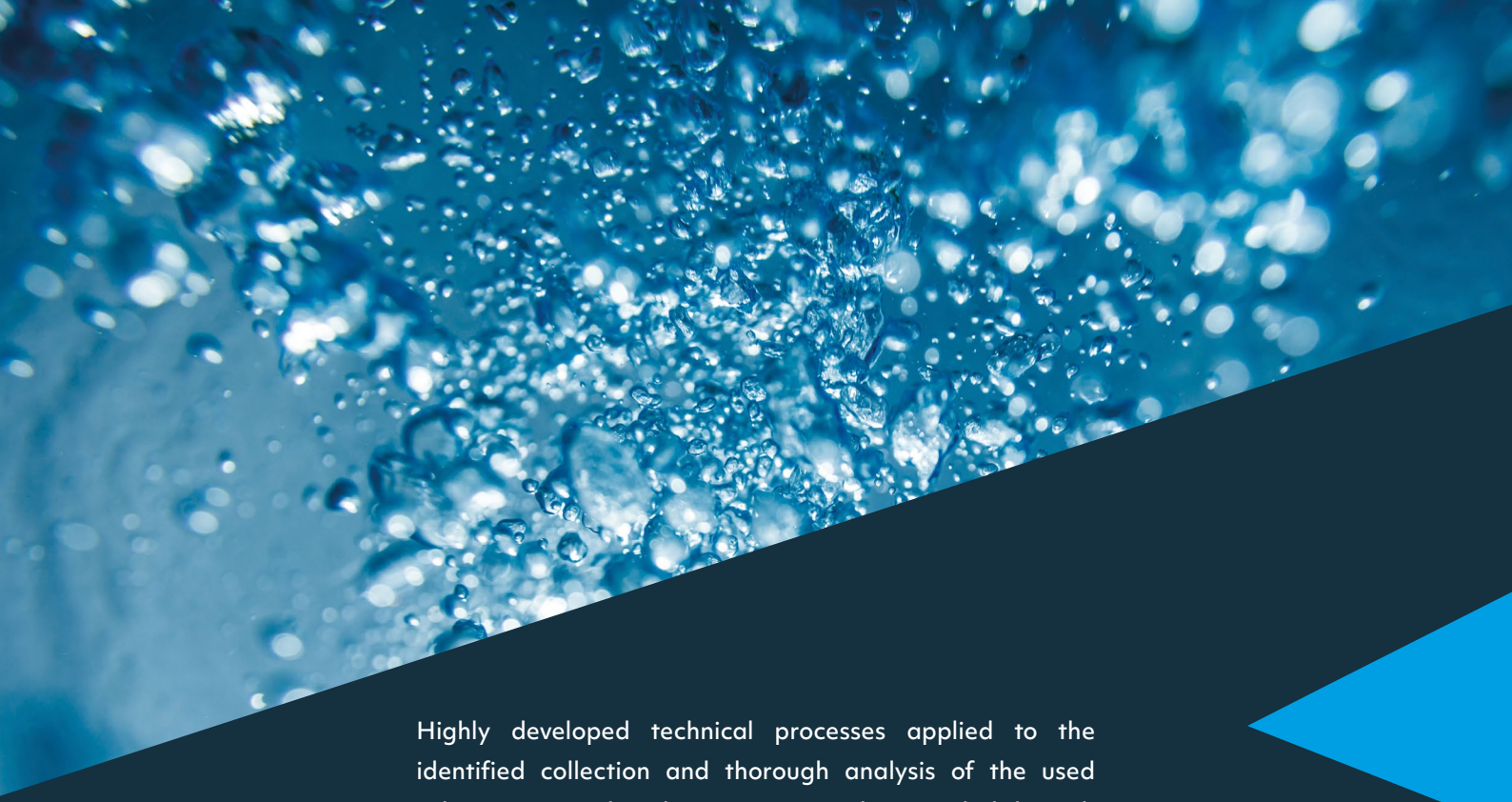


Short-path evaporator



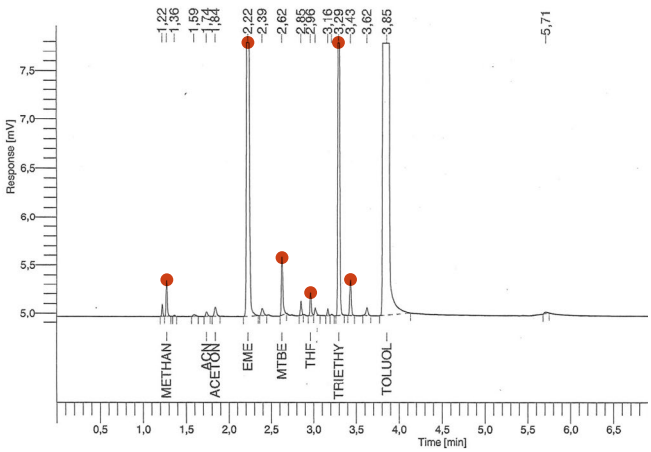
ENVIRONMENTAL PROTECTION

- Reputable solvent recyclers can ensure that all activities are carried out within the framework of the legal requirements of national and European waste law and that all relevant environmental and safety requirements are complied with. This means that the recycling and disposal routes must always be fully demonstrated and where appropriate meet the legislative requirements for cross-border waste shipment.

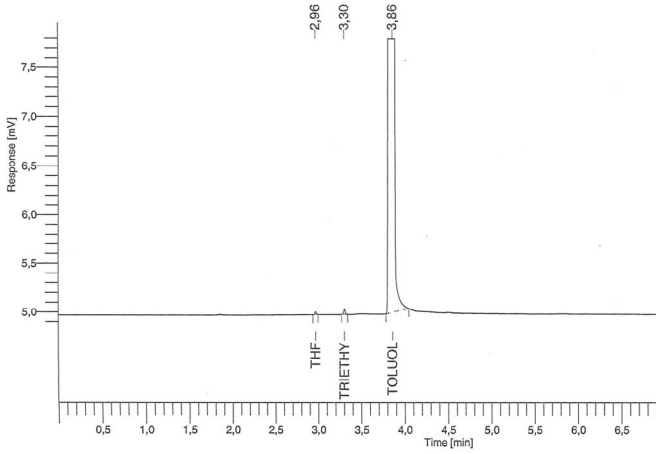


Highly developed technical processes applied to the identified collection and thorough analysis of the used solvents ensure that the customer can be provided through treatment with a recyclate of the quality desired. This is not usually inferior to the quality of the original substances. Impurities such as Carcinogenic, Mutagenic or Reproductive contaminating substances or other active ingredients can be specifically removed through recycling. The output thus corresponds to the substances previously registered under the requirements of the EU REACH Regulation. The recyclates, that are identical in material terms to the original substances, can thus be returned to the economic cycle after processing without the need for REACH re-registration.

USED PRODUCTS / DISTILLATES, USING TOLUENE AS AN EXAMPLE



Quality: 88,54 %



Quality: 99,97 %

EUROPEAN SOLVENT RECYCLER GROUP

ESRG

The European Solvent Recycler Group (ESRG) was founded in 2004 under the aegis of the VCH (German based chemical distributor association). Since then, the association has united the interests of European companies that are active in this industrial sector and represents them in interactions with the relevant European bodies.

The member companies of ESRG process hundreds of thousands of tons of solvents per year and offer their customers detailed product specifications for the redistillates they offer. The user is informed - via the safety data sheet about all legal and safety-relevant aspects of material classification and handling.

The aim is to promote the safe and economical management of used solvents and to make high-quality goods available for the market again.

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AN OUTLOOK

- Solvent recycling focuses on the resource-saving use of raw materials while supporting the legal requirement to consider a waste treatment hierarchy above that of energy recovery. Through their activities, the members of the ESRG contribute greatly to avoiding significant amounts of CO_2.

The common goal of ESRG is to increase recycling rates and to further reduce the amount of solvents lost to energy recovery and other combustion processes, during which a material is irretrievably lost. This requires that the used solvents be always directed to the best suitable reprocessing technique.

The recycling of solvents is being increasingly incorporated directly into industrial processes and has thus become an indispensable component of resource-saving production. This ESRG-objective is fully matched to support the current European waste law requirements for greater resource efficiency, which are now being implemented through the EU Circular Economy Action Plan. This is also of central importance in the EU Commission's new European Green Deal for Sustainability.

"Cradle to Cradle is like good gardening; it is not about 'saving' the planet but about learning to thrive on it."

Michael Braungart

OUR MEMBERS

TOGETHER FOR LESS

www.esrg-online.eu

www.esrg.de

ESRG
European Solvent Recycler Group (AISBL)
Boulevard Auguste Reyerslaan 80
B-1030 Brussels-Schaerbeck
Transparency-Register EU: Nr. 303140125180-29
www.esrg-online.eu - info@esrg-online.eu