recovery systems for solvents and water

OFRU RECYCLING®

References AEG Kabel AG · AGFA GAEFERT AG · BASF Farben und Lacke · Carl Zeiss AG · Degussa AG · AKZO-Nobel Du Pont · Ericsson Telecom AB · Rodenstock Optic · Rehau AG & Co. · Siemens AG · Siemens-Nixdorf AG · Tetra Pak · Philips · Eisenmann Maschinenbau KG

OFRU Recycling Specialist in Solvent Recovery

Broad-based Level of Experience

OFRU Recycling manufactures a large selection of plants for recovery of organic/flammable and water based solvents.We have become famous world wide through creative solutions in environmental technology – as a specialist for the treatment of soiled solvents. In partnership-based cooperation with our customers, we develop treatment solutions for exquisite industrial sectors today. With over 30 years of experience in different branches and applications, we can competently fulfil specific demands.
In case of large recycling projects you will reckon OFRU Recycling as a competent and strong partner.
The recovery plants manufactured by OFRU Recycling are based on the principle of vacuum distillation. Soiled solvents become evaporated under all safety specification parameters, finally condensed and thus separated from impurities. Besides many other separation processes, distillation is considered as the process with the best product result and a high recovery rate.

Individual Client Solutions

OFRU Recycling offers treatment systems of all capacity classes. They are designed according to individual specification to find an optimum customer solution. Our sales engineers do not only coordinate, but also work responsibly on the customer's solution. The OFRU laboratory provides different plants for testing purposes. Your soiled solvent serves as a basis for a test series, where the optimum process is determined very quickly.

Range of Application and Trade

Automotive industry
Chemical industry
Printing industry
Electronics
General industry
Machinery industry
Plastic industry
Paint and colour industry
Paper industry
Cosmetic industry
Pharma industry

Hand work shops
Optic industry
Environmental
Professional disposal and recycling
Textile industry
Packaging industry
Raw materials
Navy
Mechanical industry
Metal working
Wood and furniture industry
Aerospace

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Customer Benefits

Your benefits with own recycling

- Recycling of valuable raw materials with high yield
- Independence from external reclaiming companies
- Certainty of keeping your own original solvents in same quality
- Always clean high quality solvents available
- Reduction of purchase and disposal costs up to 95%
- Low operating costs
- A short pay-back time (ROI), usually < 1 year
- Reduction of bound capital due to the reduction of stored solvents
- Confirmation with environmental pollution control (benefit for ISO certificate)

Products and Quality

- Most modern distillation plants world wide
- Unique integrated steam heating method at series DSC and ASC, laid out on complete solvent filling level
- High technical standard and manufacturing quality
- Most comprehensive product line with more than 20 different machines
- Low maintenance
- Reliable in operation
- Safe and controlled, in close cooperation with the Germany TÜV Technical Control Board (EC-Certificate according to

OFRU in the market

- Pioneer in developing solvent recovery units
- Great customer acceptance for more than 30 years
- Well known for high-performance, professional machines.
- World wide references
- OFRU® is a world wide recognized brand

OFRU's organization

- Well trained staff and international sales organization
- Reliable and responsible processing of your enquiry
- Quick and competent after sales support
- Own technical service hotline in English and German
- Many local partners and distributors world wide

Our focus is the development of professional machines for professional companies.

OFRU's manufacturing goals are to produce superior, high performance distillation plants in excellent quality and with up-to-date technical process standard. We run a own process engineering and design department and continuously improve our products.

Safety comes first.

Security has a great importance with the choice of a suitable distilling plant. OFRU Recycling has a long term history regarding the treatment of burnable solvents. Traditional "Made in Germany" is combined with the implementation of up-to-date techniques and legal requirements of the European Union.

The development of reliable quality products is always the center of attention.

OFRU customers profit from it: The products provide a safe and reliable production.

BS-21 / BS-31 Solvent Recovery Plant

Ideal small recycling equipment for workshops and small users. Easy to install and simple in the operation.

Technical data	BS-21 / BS-31
Total vessel volume	25 / 40 l
Filling volume constantly, level controlled	21 / 31 l
Distillation rate approx.	5 l/hr *
Heating up time approx.	1 hr *
Heating temperature	Max. 200 °C
Vacuum abs. (optional)	Max. 250 mbar
Electrical connection	230 V / 50 Hz
Power consumption thermal oil heater	2 kW
Power consumption vacuum unit	-
(Vacuum) Cons. air pressure approx.	6-9 bar max., 200 l/min
Consumption cooling water (8-12° C) approx.	-
Width x Depth x Hight approx.	0,6 x 0,8 x 1,3 [m]
Weight approx.	80 kg / 118 kg

* Abhängig vom Lösemitteltyp / Dependent on type of solvent, **Begleitenden Depotstelle nach RL 94/9/EG, depositary, notified body acc. RL 94/9/EG

The BS solvent recycling equipment is recommended for daily volumes from 5-30 litre and has a permanently built-in distillation tank made of stainless steel.
This series was developed for smaller or occasional solvent user. Treatment of soiled solvents takes place through distillation in a solvent and thermal resistant plastic bag. The distillation unit is heated by a electric thermal oil heater. The large evaporator surface and good heat balance facilitate quick distillation of small quantities without changing appliance's settings. After manual solvent filling and starting the plant, the soiled solvent is evaporated and finally condensed.
Condensed solvent is clear, clean and can be used again immediately. The process is stopped automatically by a timer. Thermostats control the heating and distillation temperature. For installation of an air-cooled unit, only a connected current of 230V is necessary.
All models are fitted with an Ex-proof electric control for installation in explosion-proof areas according to Class 1.
For high boiling point solvents the BS can be equipped with a vacuum unit. The plant is delivered with a bag-holder and 3 distillation bags and is ready for
immediate operation.
Typical area of application: 10-30 l / shift

Product benefits

- Ex-proof
- Short heating and treatment time
- Small and room saving
- Design with tilted frame for a quick residue removal
- Soiled solvents can be distilled in a plastic bag: Simple lifting out of the residue from the unit, no laborious tank cleaning
- High-quality components and processing
- Low operating costs
- Easy operation and installation

CE ATEX Ex

COMPACT Solvent Recovery Plant

Easy and safe distillation

Technical data	COMPACT
Total vessel volume	70 l
Filling volume constantly, level controlled	35 l
Distillation rate approx.	7-20 l/hr *
Heating up time approx.	0,50 hr *
Heating temperature	Max. 200 °C
Vacuum abs. (optional)	Max. 50 mbar
Electrical connection	380-410 V / 50 Hz / 3Ph
Power consumption thermal oil heater	6 kW
Power consumption vacuum unit (opt.)	1,1 kW
Consumption air pressure approx.	6 bar max., 50 l/min
Consumption cooling water (8-12° C) approx.	0,5 m³/hr
Width x Depth x Hight approx.	1,2 x 0,8 x 1,6 [m]
Weight approx.	140 kg

* Abhängig vom Lösemitteltyp / Dependent on type of solvent, **Begleitenden Depotstelle nach RL 94/9/EG, depositary, notified body acc. RL 94/9/EG

The Ex-proof OFRU distillation unit „COMPACT“ is developed for daily volumes from 60-400 litre and consists of a thermal oil heated horizontal distillation vessel made of stainless steel, in which the soiled solvent is regenerated. The COMPACT unit operates fully automatic and fills itself continuously with an integrated membrane pump or with the option vacuum unit. Every few minutes the machine refills itself and can be used for 24hr operation. During the automatic distillation process the level in the distillation tank remains constant, where as the evaporated quantity of the solvent will be replaced by new soiled solvent all the time. That means, manual filling by hand is not necessary. Indicating instruments inside the front plate give information about boiling/vapour temperature of the solvent, the process pressure inside the distillation boiler and the nominal/actual values of the heating temperature. The electrical control system monitors all safety relevant parameters and switches the plant automatically off in case of fault. The automatic feeding mode realizes when the dirty solvent storage tank is empty. Then the SIEMENS micro processor stops feeding and switches to the final „sump distillation mode“. During the sump distillation mode, solvent will be evaporated and the remaining residue will be concentrated into an adjustable viscosity. Afterwards the machine stops for drainage of the residue, which is easily done through the large front door. The „Compact“ is equipped with a certificated inside explosion-proof control board. For solvents with a high boiling point >150°C a optional vacuum unit is available. This option consists of a electrical high performance vacuum pump and generates a vacuum from –0,9 to –0,95 bar. Thus the boiling point of the solvents is deeply reduced. The heating temperature can be adjusted smaller, which safes energy. The installation and start-up can be carried out easily by the customer within short time. All connections are placed on one side of the machine.
COMPACT – dangerous pouring of solvents by hand belongs to the past.
Typical area of application: 60-160 l / shift

Product benefits

- Automatic and continuous solvent filling: No pour of solvents by hand any more
- Filling level is controlled always constant = Mostly constant output
- Horizontal distillation vessel: Easy cleaning of vessel, no expensive plastic bags any more, no tilting of whole machine necessary
- Small distillation vessel of 70l: Fast heating up of solvents, high distillation rate with small machine size
- Water cooling: Optimal condensation of solvent vapours even at high ambient temperature
- Explosion proof electric panel with SIEMENS digital control inside
- Automatic operation
- Auto-stop: When dirty solvent drum is empty, when over temperature, when no thermal oil existent, when no cooling water flow
- Built according to newest European regulations: High safety and operation standard

CE ATEX Ex TÜV**

Series ASC Professional Solvent Recycling

ASC, one of the most modern distillation plants world wide, constructed in intentionally small vessel size, powerful and very comfortable in operation.

The OFRU distillation plant ASC was specially developed for customers with large quantities of soiled solvents, e.g. 300-20.000 l/day. The plant is equipped with a conical distillation vessel in stainless steel with a integrated high capacity steam generator for powerful distillation. The heat is produced by electrical energy 380-410 Volt. Alternatively, other heat carriers, (e.g. oil/hot water) can be connected. The plant is normally connected to a tank for soiled and purified solvents.

An Ex-proof level control system keeps the solvent quantity always constant inside the evaporator system and guarantees continuous 24hr-operation. A vacuum pump conveys the soiled solvent into the evaporator. A vacuum unit reduces the boiling temperature and thus prevents undesired decomposition of the solvent or pollution. Solvent vapours are condensed inside the water cooled condenser and are collected in a tank, for reuse.

A slow moving scraper device, with self-adjusting scraper blades, maintains the vessel walls free of crust formation during distillation. The combination of uniformly stirring and perfect scraper blades in the side vessel wall ensure optimum heat transfer into the solvent. The result of many construction details are a fast heat up of the solvent and high solvent output even with a compact machine size and vessel/filling volume.

The whole distillation process is controlled and monitored by a SIEMENS micro processor. At the end of the continuous operation the automatic sump distillation is started. The residue is thickened to a predetermined viscosity, controlled by a timer. Afterwards the plant is automatically switched off and ready for drainage. The Drainage of the viscous residues occurs via a sliding valve at the bottom end of the conical vessel. The rotating scraper and the conical vessel design supports the easy drainage of the sludge in the center of the vessel. Cleaning duties are no longer necessary.

The plant is then ready for the next continuous operation again. ASC, a professional and comfortable recovery plant for high volumes, 300-20.000 l/day.

Receive best performance

- Fast and powerful heating up of the machine. This saves time and money.
- High outputs possible (litre per hour)
- Constructed acc. to latest EU directives: High levels of operational safety
- Low space requirement

ASC-100 **ASC-150** **ASC-300** **ASC-500** **ASC-1500**

Series ASC Professional Solvent Recycling

Product benefits

- Product-affected parts in stainless steel
- Automatic and continuous feeding with dirty solvents
- Filling level is kept constant. Plant distills always further, no batch operation
- Conical distillation vessel in stainless steel AISI 304 with lathe and plain surface: Easy and complete drainage of vessel content by natural gravity and scraper support
- Perfect scraper system: Blades keep free the evaporator walls from settlements, no re-adjustment necessary, guarantee an optimal and real cleaning effect.
- Water cooling: Optimal condensation of solvent vapours even at high ambient temperature
- Electric panel with SIEMENS digital control inside
- Automatic operation
- Auto-stop: When dirty solvent drum is empty, when over temperature, when no thermal heating media existent, when no cooling water flow
- Constructed according to latest EU directives: High levels of operational safety

Integrated modern steam heating (ASC-150 to ASC-1500)

- Solvent is heated up faster than with conventional thermal oil heating systems
- No oil change necessary = saves money and maintenance
- No incrustation of heating elements any more, always constant heating power
- No oil sludge in the machine
- Closed system: No corrosion of vessel because of air moisture

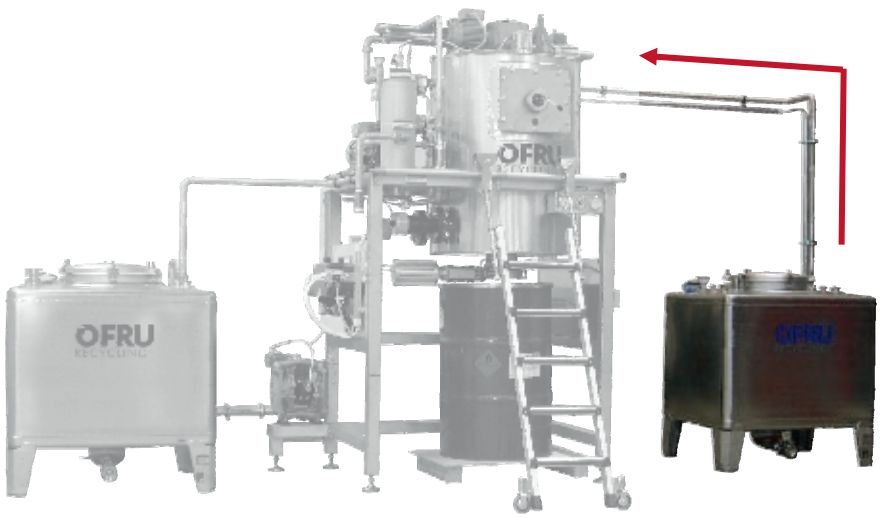
CE ATEX **

Technical Data	ASC-100	ASC-150	ASC-300	ASC-500	ASC-1500	ASC-3000	ASC-4000	ASC-6000
Vessel volume	140 l	160 l	300 l	500 l	1500 l	3000 l	4000 l	6000 l
Filling volume constantly, level controlled	65 l	75 l	150 l	250 l	750 l	15250 l	2.400 l	3.000 l
Distillation rate approx.	20-60 l/hr*	40-90 l/hr*	60-140 l/hr*	100-220 l/hr*	200-450 l/hr*	400-800 l/hr*	600-1.200 l/hr*	> 1.000 l/hr*
Heating up time approx.	1 hr*	0,5 hr*	0,5 hr*	1 hr*	1 hr*	1 hr*	1 hr*	1 hr*
Heating temperature	Max. 200 °C				Max. 180 °C			
Vacuum abs.				Max. 50 mbar				
Electrical connection				380-410 V / 50 Hz / 3 Ph +N				
Power consumption heating	6 kW 12 kW Option	12 kW 24 kW Option	12 kW 24 kW Option	24 kW	48 kW	100 kW	150 kW	200 kW
Power consumption vacuum unit	1,1 kW	1,1 kW	1,1 kW	1,1 kW	1,1 kW	3,6 kW	3,6 kW	3,6 kW
Consumption air pressure approx.				6 bar, Max. 50 l/min.				
Consumption cooling water (8-13° C) approx.	0,6 m³/hr	0,8 m³/hr	1,2 m³/hr	1,5 m³/hr	3 m³/hr	5 m³/hr	>7 m³/h	>9 m³/h
Width x Depth x Hight approx. [m]	With high rack: 1,65 x 0,93 x 2,65 W/O high rack: 1,65 x 0,93 x 1,95	1,5 x 1,05 x 2,65	1,95 x 1,29 x 2,9	2,2 x 1,1 x 3,2	3,1 x 1,95 x 4,5	3,5 x 2,4 x 5,5	3,9 x 3,0 x 5,5	4,2 x 3,1 x 6,0
Weight approx.	750 kg 700 kg	950 kg	1.250 kg	1.500 kg	4.750 kg	5.500 kg	6.000 kg	8.000 kg

* Abhängig vom Lösemitteltyp / Dependent on type of solvent, **Begleitenden Depotstelle nach RL 94/9/EG, depositary, notified body acc. RL 94/9/EG

Process explained

Automatic solvent feed from tank or drum



100%
Dirty solvent

Continuous recycling process of solvents

Recycling with high distillation performance

- **ASC-100: 20-60 l/hr**
- **ASC-150: 40-90 l/hr**
- **ASC-300: 60-140 l/hr**
- **ASC-500: 100-220 l/hr**
- **ASC-1500: 200-450 l/hr**
- **ASC-3000: 400-800 l/hr**
- **ASC-6000: >1000 l/hr**

Clean recycled solvent

Residue after recycling process

ASC-100 Solvent Recovery Plant

ASC, one of the most modern distillation plants world wide, constructed in intentionally small vessel size, powerful and very comfortable in operation.

Technical data	ASC-100
Total vessel volume	140 l
Filling volume constantly, level controlled	65 l
Distillation rate approx.	20-60 l/hr *
Heating up time approx.	1 hr *
Heating temperature	Max. 200 °C
Vacuum abs.	Max. 50 mbar
Electrical connection	380-410 V / 50 Hz / 3Ph
Power consumption thermal oil heater	6 kW (Standard) or 12 kW (optional)
Power consumption vacuum unit	1,1 kW
Consumption air pressure approx.	6 bar max., 50 l/min
Consumption cooling water (8-12° C) approx.	0,6 m³/hr
Width x Depth x Hight approx.	With high rack: 1,65 x 0,93 x 2,65 [m] W/O high rack: 1,65 x 0,93 x 1,95 [m]
Weight approx.	750 kg / 700 kg

* Abhängig vom Lösemitteltyp / Dependent on type of solvent,
**Begleitenden Depotstelle nach RL 94/9/EG, depositary, notified body acc. RL 94/9/EG

The ASC-100 is the smallest vacuum distillation unit out of the professional series ASC. It includes a integrated thermal oil heating system.
A characteristic is the conical distillation vessel made of stainless steel, where the lateral surface is heated with thermal oil. The hot oil in the double jacket heats up indirectly the solvent and evaporates it afterwards. At the same time a very good distillation rate is reached with small vessel filling volume. For the integrated thermal oil heating system only an electrical connection is necessary.
A high speed vacuum pump transfers the dirty solvent to the evaporator and guarantees a continuous 24 hour operation. During automatic distillation the quantity of solvents which is evaporated, is constantly fed automatically by metered dirt solvent. This automatic process is adjusted by timers. If the tank of dirty solvent is empty, the plant switches automatically to "sump distillation". The continuous feeding is stopped and the remaining sludge in the vessel is evaporated to a thick concentrate. Afterwards the plant switches off and is ready for the manual or fully automatic emptying.
The distilled and/or cleaned solvent flows continuously from the distilling plant into a build-lateral tank.A further characteristic of the ASC evaporators is a slow-running agitator with automatic self adjusting scraper blades made out of PTFE.
These blades clean optimally the conical evaporator vessel and need no re-adjustment. A great benefit while daily operation. The total distillation process is controlled by a SIEMENS microprocessor. The emptying of the high viscose residue is done by natural gravity over a drainage valve at the bottom of the conical round vessel. The plant can be re-filled again automatically with dirty solvent after e.g. one, two or three-shift operation. A new continuous recycling process begins.
Typical area of application: 160-500 l / shift

Product benefits

- Product-affected parts in stainless steel
- Automatic and continuous feeding with dirty solvents
- Filling level is controlled always constant = Mostly constant output
- Conical distillation vessel in stainless steel AISI 304 with lathe and plain surface: Easy and complete drainage of vessel content by natural gravity and scraper support
- Perfect scraper system: Blades keep free the evaporator walls from settlements, no re-adjustment necessary, guarantee an optimal and real cleaning effect.
- Built-in electrical thermal oil heater
- Water cooling: Optimal condensation of solvent vapours even at high ambient temperature
- Electric control board with SIEMENS digital control inside
- Automatic operation
- Auto-stop: When dirty solvent drum is empty, when over temperature, when no thermal oil existent, when no cooling water flow
- Built according to newest European regulations: High safety and operation standard

CE ATEX **

ASC-150 Solvent Recovery Plant

ASC, one of the most modern distillation plants world wide, constructed in intentionally small vessel size, powerful and very comfortable in operation.

Technical data	ASC-150
Total vessel volume	160 l
Filling volume constantly, level controlled	75 l
Distillation rate approx.	40-90 l/hr *
Heating up time approx.	0,5 hr *
Heating temperature	Max. 180 °C
Vacuum abs.	Max. 50 mbar
Electrical connection	380-410 V / 50 Hz / 3Ph
Power consumption steam heating generator	12 kW (Standard) or 24 kW (optional)
Power consumption vacuum unit	1,1 kW
Consumption air pressure approx.	6 bar max., 50 l/min
Consumption cooling water (8-12° C) approx.	0,8 m³/hr
Width x Depth x Hight approx.	1,5 x 1,05 x 2,65 [m]
Weight approx.	950 kg

* Abhängig vom Lösemitteltyp / Dependent on type of solvent, **Begleitenden Depotstelle nach RL 94/9/EG, depositary, notified body acc. RL 94/9/EG

The ASC-150 is OFRU´s most popular vacuum distillation unit out of the professional series ASC. It includes a modern integrated steam heating system.
A characteristic is the conical distillation vessel made of stainless steel, where the lateral surface is heated with steam. The steam in the double jacket transfers extremely fast the energy into the solvent. At the same time a high distillation rate is reached with small vessel volume. For the integrated steam heating system only an electrical connection is necessary.
A high speed vacuum pump transfers the dirty solvent to the evaporator and guarantees a continuous 24 hour operation. During automatic distillation the quantity of solvents which is evaporated, is constantly feeded automatically by metered dirt solvent. This automatic process is adjusted by timers. If the tank of dirty solvent is empty, the plant switches automatically to "sump distillation". The continuous feeding is stopped and the remaining sludge in the vessel is evaporated to a thick concentrate. Afterwards the plant switches off and is ready for the manual or fully automatic emptying.
The distilled and/or cleaned solvent flows continuously from the distilling plant into a build-lateral tank. A further characteristic of the ASC evaporators is a slow-running agitator with automatic self adjusting scraper blades made out of PTFE. These blades clean optimally the conical evaporator vessel and need no re-adjustment. The total distillation process is controlled by a SIEMENS microprocessor. The emptying of the high viscose residue is done by natural gravity over a drainage valve at the bottom of the conical round vessel. The plant can be re-filled again automatically with dirty solvent. A new continuous recycling process begins.
Typical area of application: 240-800 l / shift

Product benefits

- Product-affected parts in stainless steel
- Automatic and continuous feeding with dirty solvents
- Filling level is controlled always constant = Mostly constant output
- Excellent conical distillation vessel in stainless steel AISI 304 with lathe and plain surface: Easy and complete drainage of vessel content by natural gravity and scraper support
- Perfect scraper system: Blades keep free the evaporator walls from settlements, no re-adjustment necessary, guarantee an optimal and real cleaning effect.
- Water cooling: Optimal condensation of solvent vapours even at high ambient temperature
- Integrated modern steam heating system: Solvent is heated up faster than with conventional thermal oil heating systems, no oil change necessary = saves money and maintenance, no incrustation of heating elements any more, always constant heating power , no oil sludge in the machine
- Cosed system: No corrosion of vessel because of air moisture
- Electric control board with SIEMENS digital control inside
- Automatic operation
- Auto-stop: When dirty solvent drum is empty, when over temperature, when no thermal oil existent, when no cooling water flow
- Built according to newest European regulations: High safety and operation standard

CE ATEX **

ASC-300 Solvent Recovery Plant

ASC, one of the most modern distillation plants world wide, constructed in intentionally small vessel size, powerful and very comfortable in operation.

Technical data	ASC-300
Total vessel volume	300 l
Filling volume constantly, level controlled	150 l
Distillation rate approx.	60-140 l/hr *
Heating up time approx.	0,5 hr *
Heating temperature	Max. 180 °C
Vacuum abs.	Max. 50 mbar
Electrical connection	380-410 V / 50 Hz / 3Ph
Power consumption steam heating generator	12 kW (Standard) or 24 kW (optional)
Power consumption vacuum unit	1,1 kW
Consumption air pressure approx.	6 bar max., 50 l/min
Consumption cooling water (8-12° C) approx.	1,2 m³/hr
Width x Depth x Hight approx.	1,95 x 1,29 x 2,87 [m]
Weight approx.	1.250 kg

* Abhängig vom Lösemitteltyp / Dependent on type of solvent, **Begleitenden Depotstelle nach RL 94/9/EG, depositary, notified body acc. RL 94/9/EG

The ASC-300 is a comfortable vacuum distillation unit out of the professional series ASC. It includes a modern integrated steam heating system.
A characteristic is the conical distillation vessel made of stainless steel, where the lateral surface is heated with steam. The steam in the double jacket transfers extremely fast the energy into the solvent. At the same time a high distillation rate is reached with small vessel volume. For the integrated steam heating system only an electrical connection is necessary.
A high speed vacuum pump transfers the dirty solvent to the evaporator and guarantees a continuous 24 hour operation. During automatic distillation the quantity of solvents which is evaporated, is constantly feeded automatically by metered dirt solvent. This automatic process is adjusted by timers. If the tank of dirty solvent is empty, the plant switches automatically to "sump distillation". The continuous feeding is stopped and the remaining sludge in the vessel is evaporated to a thick concentrate. Afterwards the plant switches off and is ready for the manual or fully automatic emptying.
The distilled and/or cleaned solvent flows continuously from the distilling plant into a build-lateral tank. A further characteristic of the ASC evaporators is a slow-running agitator with automatic self adjusting scraper blades made out of PTFE. These blades clean optimally the conical evaporator vessel and need no re-adjustment. The total distillation process is controlled by a SIEMENS microprocessor. The emptying of the high viscose residue is done by natural gravity over a drainage valve at the bottom of the conical round vessel. The plant can be re-filled again automatically with dirty solvent. A new continuous recycling process begins.
Typical area of application: 500-1500 l / shift

Product benefits

- Product-affected parts in stainless steel
- Automatic and continuous feeding with dirty solvents
- Filling level is controlled always constant = Mostly constant output
- Excellent conical distillation vessel in stainless steel AISI 304 with lathe and plain surface: Easy and complete drainage of vessel content by natural gravity and scraper support
- Perfect scraper system: Blades keep free the evaporator walls from settlements, no re-adjustment necessary, guarantee an optimal and real cleaning effect.
- Water cooling: Optimal condensation of solvent vapours even at high ambient temperature
- Integrated modern steam heating system: Solvent is heated up faster than with conventional thermal oil heating systems, no oil change necessary = saves money and maintenance, no incrustation of heating elements any more, always constant heating power , no oil sludge in the machine, cosed system: No corrosion of vessel because of air moisture
- Electric control board with SIEMENS digital control inside
- Automatic operation
- Auto-stop: When dirty solvent drum is empty, when over temperature, when no thermal oil existent, when no cooling water flow
- Built according to newest European regulations: High safety and operation standard

CE ATEX **

ASC-500 Solvent Recovery Plant

ASC, one of the most modern distillation plants world wide, constructed in intentionally small vessel size, powerful and very comfortable in operation.

Technical data	ASC-500
Total vessel volume	500 l
Filling volume constantly, level controlled	250 l
Distillation rate approx.	100-220 l/hr *
Heating up time approx.	1 hr *
Heating temperature	Max. 180 °C
Vacuum abs.	Max. 50 mbar
Electrical connection	380-410 V / 50 Hz / 3Ph
Power consumption steam heating generator	24 kW
Power consumption vacuum unit	1,1 kW
Consumption air pressure approx.	6 bar max., 50 l/min
Consumption cooling water (8-12° C) approx.	1,5 m³/hr
Width x Depth x Hight approx.	2,2 x 1,1 x 3,2 [m]
Weight approx.	1.500 kg

* Abhängig vom Lösemitteltyp / Dependent on type of solvent, **Begleitenden Depotstelle nach RL 94/9/EG, depositary, notified body acc. RL 94/9/EG

The ASC-500 is a most comfortable vacuum distillation unit out of the professional series ASC. It includes a modern integrated steam heating system.
A characteristic is the conical distillation vessel made of stainless steel, where the lateral surface is heated with steam. The steam in the double jacket transfers extremely fast the energy into the solvent. At the same time a high distillation rate is reached with small vessel volume. For the integrated steam heating system only an electrical connection is necessary.
A high speed vacuum pump transfers the dirty solvent to the evaporator and guarantees a continuous 24 hour operation. During automatic distillation the quantity of solvents which is evaporated, is constantly feeded automatically by metered dirt solvent. This automatic process is adjusted by timers. If the tank of dirty solvent is empty, the plant switches automatically to "sump distillation". The continuous feeding is stopped and the remaining sludge in the vessel is evaporated to a thick concentrate. Afterwards the plant switches off and is ready for the manual or fully automatic emptying.
The distilled and/or cleaned solvent flows continuously from the distilling plant into a build-lateral tank. A further characteristic of the ASC evaporators is a slow-running agitator with automatic self adjusting scraper blades made out of PTFE. These blades clean optimally the conical evaporator vessel and need no re-adjustment. The total distillation process is controlled by a SIEMENS microprocessor. The emptying of the high viscose residue is done by natural gravity over a drainage valve at the bottom of the conical round vessel. The plant can be re-filled again automatically with dirty solvent. A new continuous recycling process begins.
Typical area of application: 800-1800 l / shift

Product benefits

- Product-affected parts in stainless steel
- Automatic and continuous feeding with dirty solvents
- Filling level is controlled always constant = Mostly constant output
- Excellent conical distillation vessel in stainless steel AISI 304 with lathe and plain surface: Easy and complete drainage of vessel content by natural gravity and scraper support
- Perfect scraper system: Blades keep free the evaporator walls from settlements, no re-adjustment necessary, guarantee an optimal and real cleaning effect.
- Water cooling: Optimal condensation of solvent vapours even at high ambient temperature
- Integrated modern steam heating system: Solvent is heated up faster than with conventional thermal oil heating systems, no oil change necessary = saves money and maintenance, no incrustation of heating elements any more, always constant heating power , no oil sludge in the machine, cosed system: No corrosion of vessel because of air moisture
- Electric control board with SIEMENS digital control inside
- Automatic operation
- Auto-stop: When dirty solvent drum is empty, when over temperature, when no thermal oil existent, when no cooling water flow
- Built according to newest European regulations: High safety and operation standard

CE ATEX **

ASC-1500 Solvent Recovery Plant

ASC, one of the most modern distillation plants world wide, constructed in intentionally small vessel size, powerful and very comfortable in operation.

Technical data	ASC-1500
Total vessel volume	1500 l
Filling volume constantly, level controlled	750 l
Distillation rate approx.	200-450 l/hr *
Heating up time approx.	1 hr *
Heating temperature	Max. 180 °C
Vacuum abs.	Max. 50 mbar
Electrical connection	380-410 V / 50 Hz / 3Ph
Power consumption steam heating generator	48 kW
Power consumption vacuum unit	1,1 kW
Consumption air pressure approx.	6 bar max., 50 l/min
Consumption cooling water (8-12° C) approx.	3 m³/hr
Width x Depth x Hight approx.	3,05 x 1,95 x 4,5 [m]
Weight approx.	4.750 kg

* Abhängig vom Lösemitteltyp / Dependent on type of solvent, **Begleitenden Depotstelle nach RL 94/9/EG, depositary, notified body acc. RL 94/9/EG

The ASC-1500 is a most comfortable vacuum distillation unit out of the professional series ASC. It includes a modern integrated steam heating system.
A characteristic is the conical distillation vessel made of stainless steel, where the lateral surface is heated with steam. The steam in the double jacket transfers extremely fast the energy into the solvent. At the same time a high distillation rate is reached with small vessel volume. For the integrated steam heating system only an electrical connection is necessary.
A high speed vacuum pump transfers the dirty solvent to the evaporator and guarantees a continuous 24 hour operation. During automatic distillation the quantity of solvents which is evaporated, is constantly feeded automatically by metered dirt solvent. This automatic process is adjusted by timers. If the tank of dirty solvent is empty, the plant switches automatically to "sump distillation". The continuous feeding is stopped and the remaining sludge in the vessel is evaporated to a thick concentrate. Afterwards the plant switches off and is ready for the manual or fully automatic emptying.
The distilled and/or cleaned solvent flows continuously from the distilling plant into a build-lateral tank. A further characteristic of the ASC evaporators is a slow-running agitator with automatic self adjusting scraper blades made out of PTFE. These blades clean optimally the conical evaporator vessel and need no re-adjustment. The total distillation process is controlled by a SIEMENS microprocessor. The emptying of the high viscose residue is done by natural gravity over a drainage valve at the bottom of the conical round vessel. The plant can be re-filled again automatically with dirty solvent. A new continuous recycling process begins.
Typical area of application: 1600-3200 l / shift

Product benefits

- Product-affected parts in stainless steel
- Automatic and continuous feeding with dirty solvents
- Filling level is controlled always constant = Mostly constant output
- Conical distillation vessel in stainless steel AISI 304 with lathe and plain surface: Easy and complete drainage of vessel content by natural gravity and scraper support
- Perfect scraper system: Blades keep free the evaporator walls from settlements, no re-adjustment necessary, guarantee an optimal and real cleaning effect.
- Water cooling: Optimal condensation of solvent vapours even at high ambient temperature
- Integrated modern steam heating system: Solvent is heated up faster than with conventional thermal oil heating systems, no oil change necessary = saves money and maintenance, no incrustation of heating elements any more, always constant heating power , no oil sludge in the machine, cosed system: No corrosion of vessel because of air moisture
- Electric control board with SIEMENS digital control inside
- Automatic operation
- Auto-stop: When dirty solvent drum is empty, when over temperature, when no thermal oil existent, when no cooling water flow
- Built according to newest European regulations: High safety and operation standard

CE ATEX Ex TÜV**

OFRU Recycling ®

Founded 1978

Location Germany

Field of Work

Systems and processes for treating soiled solvents and water

Products

Distillation plants with capacities of 2-2000 litres/h, batch operation or full automatic operation

Processes

- Evaporation
- Condensation
- Single-stage distillation
- Vacuum distillation
- Evaporation supported by integrated scraper device and agitator
- Water distillation with energy recovery

Special concept

- Design of complete systems, a.o. in combination with print presses, cleaning and washing plants
- Consulting, planning, constructing turn-key treatment plants including tanks, pipeline construction and Ex-proof electrical installation.

Sales worldwide

Service worldwide

Installation & Service

Unlimited customer service

OFRU Recycling provides service and maintenance of plants in many countries. Upon request, we undertake installation and commissioning of your treatment systems on site. We give quick support in case of emergency. Our own service team or trained sales partners are available for this matter.

Professional machine documentation

Each distribution of a machine contains an extensive operator manual. With orders from the European Union country, we will provide a translated manual in required European language. The documents contain all information, which is needed for installing, start up, operating and maintaining the machine. For further inquiries our technical service hotline is always available, in German or English language.

Your benefits

- Large know how in many different customer application
- Detailed and precise documentation
- Many local OFRU agents in various countries speak your language
- Own German and English technical hotline
- Own competent service crew for international travel and service available
- Fast international shipment of spare parts

Use OFRU´s experience for your benefit. We are ready to start your planning.

OFRU Recycling® - world-wide

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