

# ADVANTAGES



## EASY TO USE

One day training for operators  
Multilingual color "touch-screen"  
Fully automated batch process  
Low maintenance system



## RELIABLE

Equipped with interlock safety system  
Shredding and sterilization in one enclosed & compact system  
No intermediate waste handling



## EFFECTIVE

Un-reusable waste  
Pre-shredding permits effective sterilization  
Up to 80 % volume waste reduction and weight-reduced by up to 40 % depending on the nature of the waste  
Temperature monitoring at the core of the waste



## ENVIRONMENTALLY RESPONSIBLE

Green technology  
Environmentally friendly  
No hazardous emissions (smoke, chemical release, radiation)  
Allows on-site treatment



## ECONOMICAL

Easy to install  
No external transport & extra packaging needed  
Cost reduction in treatment and management of infectious waste.  
Short pay back period, great ROI, and large saving.

# WORLDWIDE PRESENCE



For over 20 years, our products are produced entirely in our manufacturing plants in north France. Our ISO 9001 certification allows us to put in place a continuous improvement structure for our products and services. With 80% of sales in export we are adapted to different norms, applicable standards, and specific requirements for the manufacturing of pressure vessels in each market including in Europe, United States of America, Japan, China...  
Our extensive distribution network enables us to not only ensure the sell but also the installation, commissioning, training, and aftersales service support of our systems in operation.



# TAKING CONTROL OF YOUR WASTE

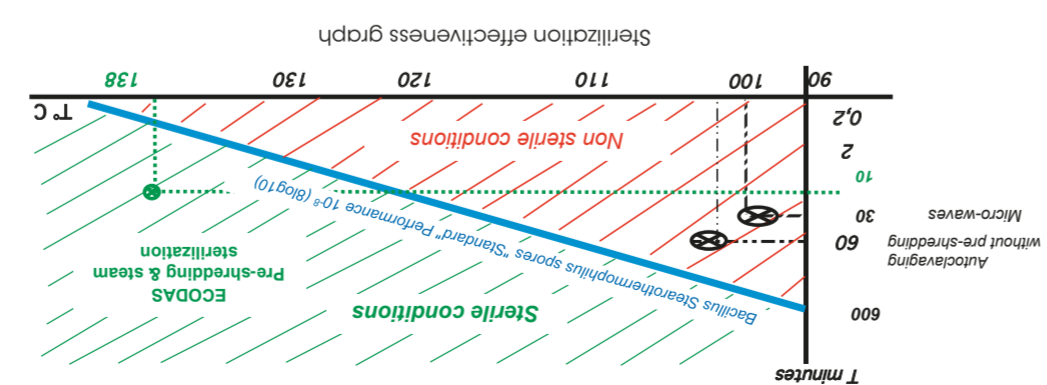


THE SUSTAINABLE, & PROVEN TREATMENT SOLUTION

### ECODAS machines are installed in more than 100 countries:

- |   |  |  |   |   |
|---|--|--|---|---|
| <ul style="list-style-type: none"> <li>Albania</li> <li>Algeria</li> <li>United Kingdom</li> <li>Angola</li> <li>Argentina</li> <li>Azerbaijan</li> <li>Bahrain</li> <li>Bangladesh</li> <li>Benin</li> <li>Bosnia</li> <li>Brazil</li> <li>Bulgaria</li> <li>Burkina Faso</li> <li>Cameroon</li> <li>Canada</li> <li>China</li> <li>Cyprus</li> <li>Costa Rica</li> <li>Denmark</li> </ul> | <ul style="list-style-type: none"> <li>Egypt</li> <li>United Arab Emirates</li> <li>Ecuador</li> <li>Spain</li> <li>Estonia</li> <li>Finland</li> <li>France</li> <li>Gabon</li> <li>Ghana</li> <li>Greece</li> <li>Guadeloupe</li> <li>Guinea Konakry</li> <li>French Guyana</li> <li>Honduras</li> <li>Hong Kong</li> <li>Hungary</li> <li>India</li> <li>Indonesia</li> <li>Iran</li> </ul> | <ul style="list-style-type: none"> <li>Iraq</li> <li>Italy</li> <li>Ivory Coast</li> <li>Jamaica</li> <li>Japan</li> <li>Jordan</li> <li>Kosovo</li> <li>Kuwait</li> <li>Kurdistan</li> <li>Laos</li> <li>Latvia</li> <li>Lebanon</li> <li>Libya</li> <li>Lithuania</li> <li>Maldives</li> <li>Morocco</li> <li>Martinique</li> <li>Mauritania</li> <li>Mauritius</li> </ul> | <ul style="list-style-type: none"> <li>Mayotte</li> <li>Mexico</li> <li>Mozambique</li> <li>Nepal</li> <li>Nigeria</li> <li>New Caledonia</li> <li>Oman</li> <li>Palestine</li> <li>Panama</li> <li>Paraguay</li> <li>Netherlands</li> <li>Peru</li> <li>Philippines</li> <li>Poland</li> <li>French Polynesia</li> <li>Czech Rep.</li> <li>Reunion Island</li> <li>Romania</li> <li>Russia</li> <li>Saint Lucia</li> </ul> | <ul style="list-style-type: none"> <li>Saint Pierre &amp; Miquelon</li> <li>Saudi Arabia</li> <li>Senegal</li> <li>Singapore</li> <li>Slovakia</li> <li>South Korea</li> <li>Sudan</li> <li>Switzerland</li> <li>Syria</li> <li>Thailand</li> <li>Togo</li> <li>Tunisia</li> <li>Turkmenistan</li> <li>Turkey</li> <li>Ukraine</li> <li>Uruguay</li> <li>USA</li> <li>Venezuela</li> <li>Vietnam</li> <li>Zanzibar</li> </ul> |
|---|--|--|---|---|

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# OUR CONCEPT

ECODAS has developed a patented, innovative and fully automated system that shreds then sterilizes Regulated Medical Waste (RMW) by saturated steam.

ECODAS sustainable treatment process combines preshredding and direct pressurized heated steam all in one enclosed system.

The final treated waste is sterilized residue that is safe for disposal as ordinary municipal waste while its initial volume is reduced by up to 80 % and weight-reduced by up to 40 % depending on the nature of the waste.

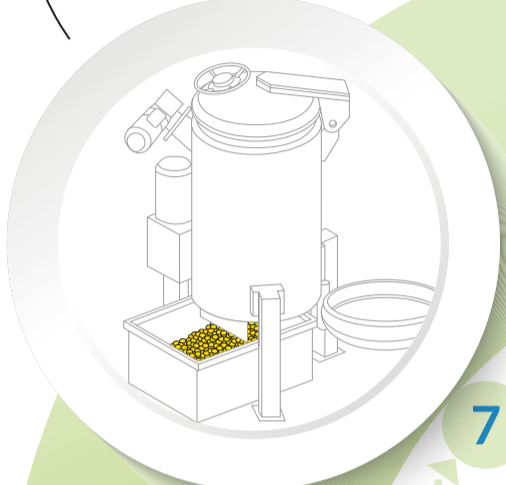
Now, ECODAS diversifies its applications to the following sectors: agro-food, slaughterhouses, seaports and airports as well as the destruction of confidential documents.



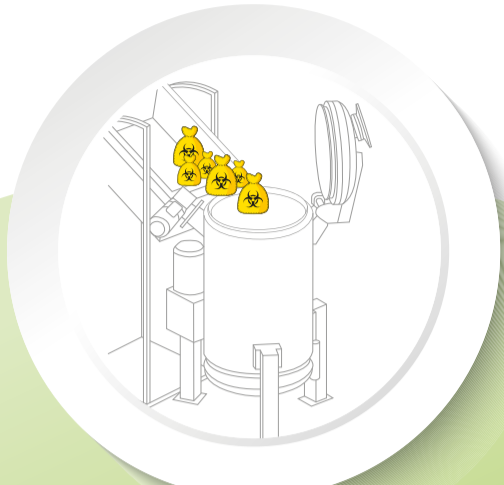
At the end of the treatment process, a detailed cycle report is generated.

| NO  | DATE       | TIME  | TEMPERATURE | PRESSURE | STATUS        |
|-----|------------|-------|-------------|----------|---------------|
| 1   | 2015-01-01 | 08:00 | 138°C       | 3.5 bars | HEATING       |
| 2   | 2015-01-01 | 08:10 | 138°C       | 3.5 bars | STERILIZATION |
| 3   | 2015-01-01 | 08:20 | 138°C       | 3.5 bars | STERILIZATION |
| 4   | 2015-01-01 | 08:30 | 138°C       | 3.5 bars | STERILIZATION |
| 5   | 2015-01-01 | 08:40 | 138°C       | 3.5 bars | STERILIZATION |
| 6   | 2015-01-01 | 08:50 | 138°C       | 3.5 bars | STERILIZATION |
| 7   | 2015-01-01 | 09:00 | 138°C       | 3.5 bars | STERILIZATION |
| 8   | 2015-01-01 | 09:10 | 138°C       | 3.5 bars | STERILIZATION |
| 9   | 2015-01-01 | 09:20 | 138°C       | 3.5 bars | STERILIZATION |
| 10  | 2015-01-01 | 09:30 | 138°C       | 3.5 bars | STERILIZATION |
| 11  | 2015-01-01 | 09:40 | 138°C       | 3.5 bars | STERILIZATION |
| 12  | 2015-01-01 | 09:50 | 138°C       | 3.5 bars | STERILIZATION |
| 13  | 2015-01-01 | 10:00 | 138°C       | 3.5 bars | STERILIZATION |
| 14  | 2015-01-01 | 10:10 | 138°C       | 3.5 bars | STERILIZATION |
| 15  | 2015-01-01 | 10:20 | 138°C       | 3.5 bars | STERILIZATION |
| 16  | 2015-01-01 | 10:30 | 138°C       | 3.5 bars | STERILIZATION |
| 17  | 2015-01-01 | 10:40 | 138°C       | 3.5 bars | STERILIZATION |
| 18  | 2015-01-01 | 10:50 | 138°C       | 3.5 bars | STERILIZATION |
| 19  | 2015-01-01 | 11:00 | 138°C       | 3.5 bars | STERILIZATION |
| 20  | 2015-01-01 | 11:10 | 138°C       | 3.5 bars | STERILIZATION |
| 21  | 2015-01-01 | 11:20 | 138°C       | 3.5 bars | STERILIZATION |
| 22  | 2015-01-01 | 11:30 | 138°C       | 3.5 bars | STERILIZATION |
| 23  | 2015-01-01 | 11:40 | 138°C       | 3.5 bars | STERILIZATION |
| 24  | 2015-01-01 | 11:50 | 138°C       | 3.5 bars | STERILIZATION |
| 25  | 2015-01-01 | 12:00 | 138°C       | 3.5 bars | STERILIZATION |
| 26  | 2015-01-01 | 12:10 | 138°C       | 3.5 bars | STERILIZATION |
| 27  | 2015-01-01 | 12:20 | 138°C       | 3.5 bars | STERILIZATION |
| 28  | 2015-01-01 | 12:30 | 138°C       | 3.5 bars | STERILIZATION |
| 29  | 2015-01-01 | 12:40 | 138°C       | 3.5 bars | STERILIZATION |
| 30  | 2015-01-01 | 12:50 | 138°C       | 3.5 bars | STERILIZATION |
| 31  | 2015-01-01 | 13:00 | 138°C       | 3.5 bars | STERILIZATION |
| 32  | 2015-01-01 | 13:10 | 138°C       | 3.5 bars | STERILIZATION |
| 33  | 2015-01-01 | 13:20 | 138°C       | 3.5 bars | STERILIZATION |
| 34  | 2015-01-01 | 13:30 | 138°C       | 3.5 bars | STERILIZATION |
| 35  | 2015-01-01 | 13:40 | 138°C       | 3.5 bars | STERILIZATION |
| 36  | 2015-01-01 | 13:50 | 138°C       | 3.5 bars | STERILIZATION |
| 37  | 2015-01-01 | 14:00 | 138°C       | 3.5 bars | STERILIZATION |
| 38  | 2015-01-01 | 14:10 | 138°C       | 3.5 bars | STERILIZATION |
| 39  | 2015-01-01 | 14:20 | 138°C       | 3.5 bars | STERILIZATION |
| 40  | 2015-01-01 | 14:30 | 138°C       | 3.5 bars | STERILIZATION |
| 41  | 2015-01-01 | 14:40 | 138°C       | 3.5 bars | STERILIZATION |
| 42  | 2015-01-01 | 14:50 | 138°C       | 3.5 bars | STERILIZATION |
| 43  | 2015-01-01 | 15:00 | 138°C       | 3.5 bars | STERILIZATION |
| 44  | 2015-01-01 | 15:10 | 138°C       | 3.5 bars | STERILIZATION |
| 45  | 2015-01-01 | 15:20 | 138°C       | 3.5 bars | STERILIZATION |
| 46  | 2015-01-01 | 15:30 | 138°C       | 3.5 bars | STERILIZATION |
| 47  | 2015-01-01 | 15:40 | 138°C       | 3.5 bars | STERILIZATION |
| 48  | 2015-01-01 | 15:50 | 138°C       | 3.5 bars | STERILIZATION |
| 49  | 2015-01-01 | 16:00 | 138°C       | 3.5 bars | STERILIZATION |
| 50  | 2015-01-01 | 16:10 | 138°C       | 3.5 bars | STERILIZATION |
| 51  | 2015-01-01 | 16:20 | 138°C       | 3.5 bars | STERILIZATION |
| 52  | 2015-01-01 | 16:30 | 138°C       | 3.5 bars | STERILIZATION |
| 53  | 2015-01-01 | 16:40 | 138°C       | 3.5 bars | STERILIZATION |
| 54  | 2015-01-01 | 16:50 | 138°C       | 3.5 bars | STERILIZATION |
| 55  | 2015-01-01 | 17:00 | 138°C       | 3.5 bars | STERILIZATION |
| 56  | 2015-01-01 | 17:10 | 138°C       | 3.5 bars | STERILIZATION |
| 57  | 2015-01-01 | 17:20 | 138°C       | 3.5 bars | STERILIZATION |
| 58  | 2015-01-01 | 17:30 | 138°C       | 3.5 bars | STERILIZATION |
| 59  | 2015-01-01 | 17:40 | 138°C       | 3.5 bars | STERILIZATION |
| 60  | 2015-01-01 | 17:50 | 138°C       | 3.5 bars | STERILIZATION |
| 61  | 2015-01-01 | 18:00 | 138°C       | 3.5 bars | STERILIZATION |
| 62  | 2015-01-01 | 18:10 | 138°C       | 3.5 bars | STERILIZATION |
| 63  | 2015-01-01 | 18:20 | 138°C       | 3.5 bars | STERILIZATION |
| 64  | 2015-01-01 | 18:30 | 138°C       | 3.5 bars | STERILIZATION |
| 65  | 2015-01-01 | 18:40 | 138°C       | 3.5 bars | STERILIZATION |
| 66  | 2015-01-01 | 18:50 | 138°C       | 3.5 bars | STERILIZATION |
| 67  | 2015-01-01 | 19:00 | 138°C       | 3.5 bars | STERILIZATION |
| 68  | 2015-01-01 | 19:10 | 138°C       | 3.5 bars | STERILIZATION |
| 69  | 2015-01-01 | 19:20 | 138°C       | 3.5 bars | STERILIZATION |
| 70  | 2015-01-01 | 19:30 | 138°C       | 3.5 bars | STERILIZATION |
| 71  | 2015-01-01 | 19:40 | 138°C       | 3.5 bars | STERILIZATION |
| 72  | 2015-01-01 | 19:50 | 138°C       | 3.5 bars | STERILIZATION |
| 73  | 2015-01-01 | 20:00 | 138°C       | 3.5 bars | STERILIZATION |
| 74  | 2015-01-01 | 20:10 | 138°C       | 3.5 bars | STERILIZATION |
| 75  | 2015-01-01 | 20:20 | 138°C       | 3.5 bars | STERILIZATION |
| 76  | 2015-01-01 | 20:30 | 138°C       | 3.5 bars | STERILIZATION |
| 77  | 2015-01-01 | 20:40 | 138°C       | 3.5 bars | STERILIZATION |
| 78  | 2015-01-01 | 20:50 | 138°C       | 3.5 bars | STERILIZATION |
| 79  | 2015-01-01 | 21:00 | 138°C       | 3.5 bars | STERILIZATION |
| 80  | 2015-01-01 | 21:10 | 138°C       | 3.5 bars | STERILIZATION |
| 81  | 2015-01-01 | 21:20 | 138°C       | 3.5 bars | STERILIZATION |
| 82  | 2015-01-01 | 21:30 | 138°C       | 3.5 bars | STERILIZATION |
| 83  | 2015-01-01 | 21:40 | 138°C       | 3.5 bars | STERILIZATION |
| 84  | 2015-01-01 | 21:50 | 138°C       | 3.5 bars | STERILIZATION |
| 85  | 2015-01-01 | 22:00 | 138°C       | 3.5 bars | STERILIZATION |
| 86  | 2015-01-01 | 22:10 | 138°C       | 3.5 bars | STERILIZATION |
| 87  | 2015-01-01 | 22:20 | 138°C       | 3.5 bars | STERILIZATION |
| 88  | 2015-01-01 | 22:30 | 138°C       | 3.5 bars | STERILIZATION |
| 89  | 2015-01-01 | 22:40 | 138°C       | 3.5 bars | STERILIZATION |
| 90  | 2015-01-01 | 22:50 | 138°C       | 3.5 bars | STERILIZATION |
| 91  | 2015-01-01 | 23:00 | 138°C       | 3.5 bars | STERILIZATION |
| 92  | 2015-01-01 | 23:10 | 138°C       | 3.5 bars | STERILIZATION |
| 93  | 2015-01-01 | 23:20 | 138°C       | 3.5 bars | STERILIZATION |
| 94  | 2015-01-01 | 23:30 | 138°C       | 3.5 bars | STERILIZATION |
| 95  | 2015-01-01 | 23:40 | 138°C       | 3.5 bars | STERILIZATION |
| 96  | 2015-01-01 | 23:50 | 138°C       | 3.5 bars | STERILIZATION |
| 97  | 2015-01-01 | 00:00 | 138°C       | 3.5 bars | STERILIZATION |
| 98  | 2015-01-01 | 00:10 | 138°C       | 3.5 bars | STERILIZATION |
| 99  | 2015-01-01 | 00:20 | 138°C       | 3.5 bars | STERILIZATION |
| 100 | 2015-01-01 | 00:30 | 138°C       | 3.5 bars | STERILIZATION |

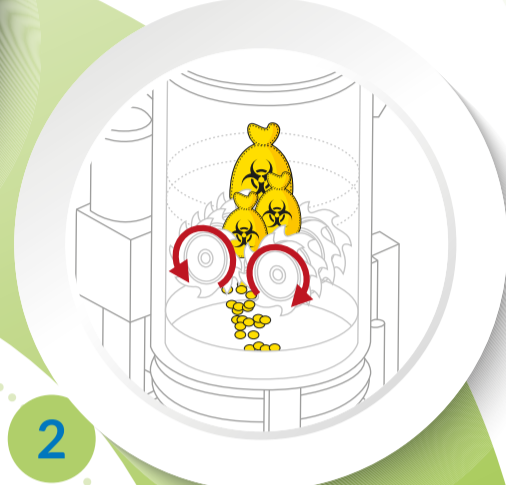
## UNLOADING



## LOADING

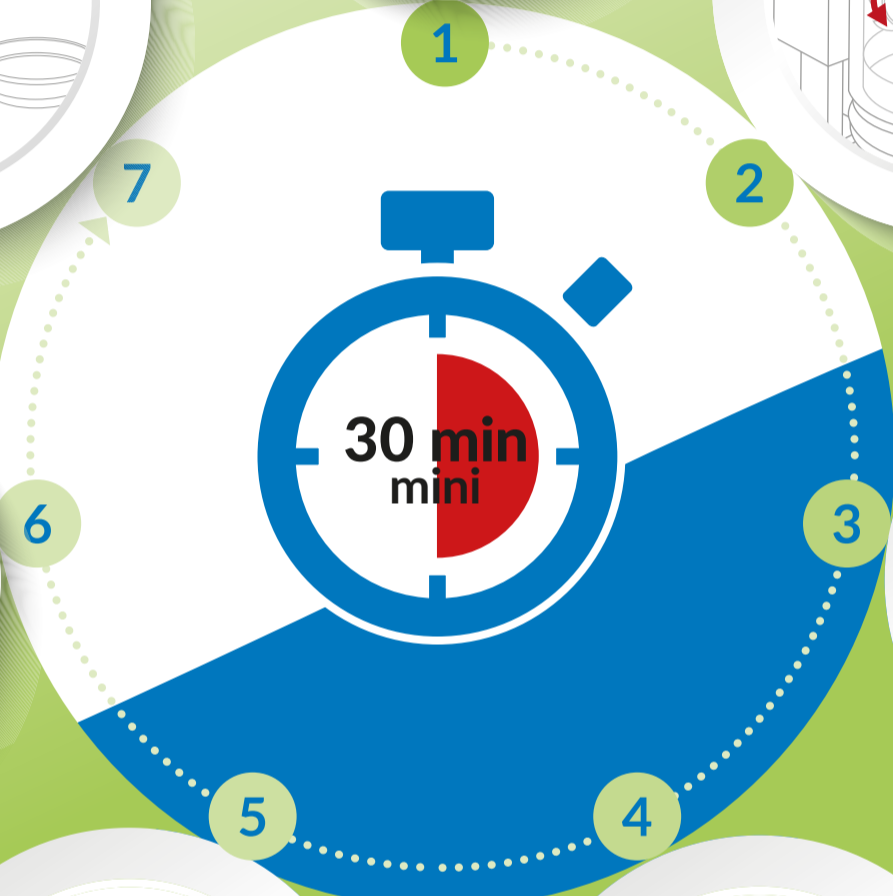


## SHREDDING



## TREATED WASTE

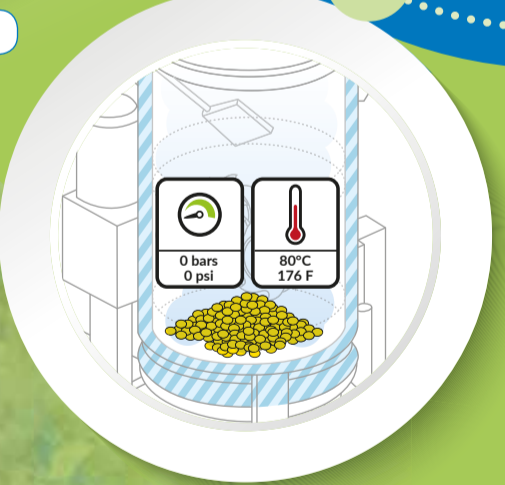
- Infectious and biomedical waste
- Animal waste
- Seaports and airports waste



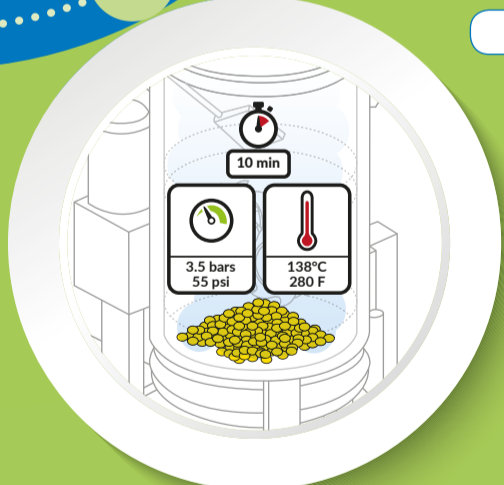
## DRAINING



## HEATING



## COOLING



## STERILIZATION

- 1** The automatic loading of the waste is performed through the top opening of the machine.
- 2** Shredding starts as soon as the cover is closed, sealed, and locked. The heavy-duty shredder features a regular automatic reverse rotation to prevent jamming, effectively shreds all kinds of waste.
- 3** The heating is achieved through saturated steam that raises the temperature to 138°C (280 F) and the pressure to 3.5 bar (51 psi).
- 4** The sterilization is achieved by maintaining 138°C (280 F) and 3.5 bar (51 psi) at the core of the waste for 10 minutes. The combination of these different factors achieves a microbial inactivation of 10<sup>6</sup> reduction (6 log10).
- 5** Decompression through the flash tank reduces temperature and pressure in preparation of the opening of the machine.
- 6** The condensates and the cooling water are discharged into the sanitary drain, and the recovered heat is used to preheat the boiler.
- 7** The unloading of the final sterilized waste is carried out by gravity discharge into a garbage bin placed directly under the machine.

Example of ECODAS T300 treatment cycle.



The ECODAS process has been tested by the Pasteur Institute and approved under the direction of the Ministry of Health and the Ministry of the Environment by the French Higher Council of Public Health and also complies with NFX30-503 standard, certified by the LNE. The quality management of ECODAS systems is executed following ISO 9001 and ISO 14001. ECODAS systems are designed and manufactured in accordance with the following norms: ASME (USA), CE (Europe), GOSSTANDART (Russia), MHLW (Japan), PLSE (China), CSA & TSSA (Canada), ...



# Sustainable TREATMENT CYCLE



## OUR PRODUCT LINE

Several models with different treatment capacities are available for a processing volume ranging from 100 to 2500 Liters per cycle.

- T100
- T150
- T300
- T700
- T1000
- T2000