

QUESTIONS & ANSWERS

MODEL: W20.180.2

WASTE₂O
manufactured by **MECHLINE**

WHAT DOES IT DO?

Mechline's Waste₂O™ food waste bio-digester rapidly digests up to 180 Kg of soft, organic food waste in 24-hours, and the resulting waste water safely runs away to drain - simply throw in the food and walk away. The process is called aerobic digestion, and a naturally occurring blend of microorganisms help with this process.

ARE THE MICROORGANISMS SAFE?

"The microorganisms are perfectly safe, naturally-occurring and non-pathogenic, i.e. they do not cause disease. They are regarded as safe worldwide and classified under Hazard Group 1. There are also no harmful effects to local drains or sewage systems. In effect the formulation boosts the population of beneficial bacteria in the system, and there would actually be beneficial effects further downstream".
Dr. John Lear (PhD, Microbiology)

IS THE WASTE WATER SAFE AND LEGAL?

Yes, Mechline's Waste₂O is WRc-approved and accredited, the first of its kind in the industry. Being WRc-approved validates and demonstrates that the Waste₂O is compliant with legislation, DEFRA and CLG advice and guidance, as well as local water industry requirements for equipment connected to water fittings and the sewer network.

IS AN EA LICENCE NEEDED?

No. The machine's output does not contain any harmful or persistent chemicals and is discharged into the public sewerage system, so there is no requirement to obtain a licence from the Environment Agency. Ultimately, it is the client's responsibility to determine the suitability of the product before ordering and that installations and operations comply with local water authority guidelines.

WHAT CAN I PUT IN THE MACHINE?

The machine will take soft, organic food waste such as fruit, vegetables, cooked and uncooked meat, fish and so on.

NOTE: *The general rule is that if a human can eat the food, the machine will process the food. The appliance and the microorganisms are designed to process a wide range of food waste types in mixed quantities. The machine cannot process anything that is not organic food waste and cannot be easily broken down such as bones, seeds and stones, flower stems, packaging, general waste, cutlery, crockery, cocktail sticks, etc. For a suggested list of what can and cannot be processed by the appliance, please refer to Table 1. This is important because placing the wrong products into the appliance could cause damage and could void the warranty.*

HOW DO I PUT FOOD WASTE INTO THE MACHINE?

Simply open the appliance lid and pour the food waste through the hatch onto the poly-chips inside, then close the lid.

HOW MUCH FOOD WASTE CAN I PUT IN THE MACHINE?

Trying to put too much food waste into the appliance at one time will overload the appliance, slow the digestion process and could damage the appliance. The appliance can process a maximum of 180 Kg of organic food waste over a 24-hour period but this **MUST** be staged over the course of 24 hours. Operators should aim to add 1x 20-litre bucket (approx. 22.5 Kg) of food waste every 3 hours to achieve maximum performance. Much like the human digestive system, the appliance gradually processes the food. If your operation does not run for 24 hours, you will be able to process proportionately less food waste. Mechline can prepare a loading guide based on your operating hours. Contact your dealer if you would like one sent to you.

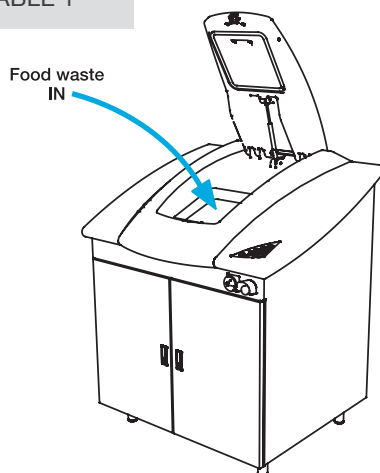
WHAT IF THERE IS A PERIOD OF THE DAY WHEN A SIGNIFICANT AMOUNT OF FOOD WASTE IS PRODUCED?

This is very common and is easily overcome by scheduling the loads of food waste put into the machine. Food waste in excess of what the machine can process at any one time should be stored ready to be put into the machine later, once the machine has had a chance to process what it already holds. Consider using clear sealable buckets for storing waste to be loaded later. Buckets are available and sold separately.

CAN I PUT REFRIGERATED OR FROZEN FOOD WASTE INTO THE MACHINE?

No. Please allow for the food waste to come to room temperature before adding. If very cold food waste is added it will change the conditions in the chamber and could kill the microorganisms that break up the food waste.

TABLE 1



WHAT GOES IN: *Soft organic material such as*

- Meats (cooked or uncooked)
- Fish
- Vegetables
- Pasta, noodles, bread crumbs, rice
- Fruit
- Dairy products (milk, cheese, eggs, etc.)

WHAT STAYS OUT:

- Meat and fish bones
- Raw dough, flours, yeast
- Pineapple tops & other hard fibrous foods
- Corn husks, flower stems
- Egg shells & coffee grounds in large quantities
- Fruit & vegetable seeds and stones such as mango, avocado, peach etc.
- Oil, fats, soups, large quantities of butter or lard
- Frozen or chilled food (wait until food is room temperature)
- Packaging, cocktail sticks and other inorganic material

IF ANYTHING ACCIDENTALLY DROPS INTO THE MACHINE, IS IT SAFE TO FISH IT OUT BY HAND?

Yes. There is a paddle mechanism inside the machine that slowly rotates to stir the food waste, but this automatically stops as soon as the machine lid is opened. Rubber gloves should always be worn when retrieving anything from inside the machine and the machine should be disconnected from the power source first and then restarted again as soon as the items have been retrieved.

CAN CATEGORY 1 FOOD WASTE BE DIGESTED BY THE MACHINE?

Category 1 is not allowed to go to landfill and therefore, it would not be allowed to be digested and sent to drains. As per DEFRA (<http://www.defra.gov.uk/food-farm/byproducts>), certain destinations, upon return, have their waste deemed as international catering waste (Cat 1). Cat 1 waste has to be incinerated or rendered under the highest controls.

WHAT IS THE BOD, COD AND SUSPENDED SOLID COUNT FOR THE WASTE WATER OUTPUT FROM THE MACHINE?

The amount of organic material in the waste water will depend on what was being digested. The output will vary according to what is put inside the machine. And the results can vary daily, depending on the food waste for the day. Ultimately, it is the client's responsibility to determine the suitability of the product before ordering and that installations and operations comply with local authority guidelines.

WHY ARE THERE POLY-CHIPS IN THE MACHINE?

The poly-chips are the substrate where the microorganisms are lodged. The chips must remain in the machine all of the time and only need topping up if too many have been lost through repairs or restarts.

IS THERE ANY SLUDGE OR BY-PRODUCT TO MANAGE?

No. All of the organic food waste will be digested and will run away to drain as waste water. The only items that will need removing from the appliance from time to time are non-digestible items that may accidentally fall into the appliance.

IS THERE ANYTHING ELSE I NEED TO DO TO KEEP THE MACHINE RUNNING AT ITS BEST?

Yes. Ensure it's installed as per the installation instructions and operated within the guidelines in the Operator Manual. You must ensure that there is always a box of bio-fluid (microorganisms) in the appliance and that the box is properly connected. This is essential because every time the appliance hatch is opened, a tiny amount of the microorganism is sprayed onto the food waste. If the microorganisms are not regularly topped up in this way, they will eventually die out and the appliance will not be able to function. Annually, a 'booster block' of microorganisms is also required to maintain a healthy level of microorganisms in the chamber.

WHAT IF THE MACHINE IS LEFT UNUSED FOR A LONG PERIOD OF TIME?

It's important to have a constant supply of food waste. If the machine is not used (lid is not opened) for 1 month, the microorganisms inside the appliance chamber will die and any newly introduced food waste will not be properly digested. In this situation a 'BOOSTER BLOCK' of microorganisms must be added to the appliance chamber before the appliance is used. 'Booster blocks' can be purchased from your dealer, reference: W20.BOOST. A 'booster block' also needs to be added every year to help boost the general microorganism population.

DOES THE ROOM REQUIRE A WASH DOWN GULLEY?

This is a decision for the client, but it would help to run the drain outlet and a wash down gulley together, giving the ability to wash down the room, especially given that there may be spillages of food waste, etc. Mechline recommend that a wash down gulley is provided.

DOES THE UNIT COME FITTED WITH A CHECK VALVE OR WILL THAT HAVE TO BE PROVIDED EXTERNALLY?

This machine incorporates an internal, WRAS-approved air break tank. This would normally provide the required backflow prevention, but it is the installer's responsibility to confirm this.

WILL/COULD THE UNIT FREEZE UP IF IT IS LOCATED OUTSIDE, EVEN IF IT IS UNDER COVER?

There is a danger of this. The machine must not be installed outdoors; it must be covered by a fully rain-proof shelter and protected from temperatures lower than 5°C and higher than 40°C. Avoid inserting food that is frozen or very cold. Allow food to come to room temperature.

IF THE UNIT IS LOCATED IN A SEPARATE ROOM, WHAT EXTRACT RATE (VENTILATION) WILL BE REQUIRED? OR WILL AN EXTRACTION FAN BE ADEQUATE?

It is always worth getting ventilation into the area; we have units that have operated with both standard ventilation and just a fan. The aim is to get approximately 15-20 air changes per hour, but some sites are less than this. It is for each site to determine how best to provide working conditions suitable for its operators and employees.

DOES THE UNIT HAVE TO BE DRAINED DOWN FOR MAINTENANCE PURPOSES?

No; in fact it does not have a tank or hold any water, with the exception of the drain pump and water latent in the food waste, which would be dispersed before servicing.

HOW TO DETERMINE THE CAPACITY OF WASTE/NUMBER OF UNITS REQUIRED TO CATER EFFICIENTLY FOR THE NUMBER OF COVERS SERVED IN A CATERING FACILITY?

The calculation is more a rule-of-thumb as each establishment will differ. Usually outline the following: Use a range of 0.2 Kg to 0.4 Kg PER COVER, the lower being where you think there is good control, the latter where it is a more expansive menu i.e. more wastage.

For example a restaurant does 100 lunches, 50 breakfast and 250 evening meals, with a total of 400-covers, and it is a broad menu, we have 400 x 0.4 Kg = 160 Kg approx. per day.

HOW MUCH WATER IS REQUIRED PER DAY?

The machine incorporates an energy-saving feature that automatically engages when the machine lid is not opened for 6 hours or more. The energy-saving feature can save up to 15% of water, so the water use can range from 510-600 litres per 24-hrs.

NOTE: The microorganisms require a warm, moist environment to survive and perform at maximum efficiency. Failure to ensure the appliance has a continuous, warm-water (50°C) supply could void the warranty. If the site cannot guarantee a warm-water supply 24/7, then consider installing a minimum 3-kW water boiler/heater with a 50-litre storage capacity. See Operator Manual for installation advice.

WILL METHANE GAS BUILD UP IN THE MACHINE?

This is not a cause for concern. Only a trace amount of methane is produced which is flushed away down the drain.



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