

BROCHURE

EVAPORATORS

OPPORTUNITY

**OPPORTUNITY WORKS IN SOCIAL ENTERPRISE
EVERY MONTH:**

I BAMBINI DELLE FATE
per l'inclusione sociale

The magic of opportunity is unique; being able to discover it, cultivate it and live it is a source of commitment every day for us of opportunity and so we can end the day in a world a little better than how it began.

Ezio Casagrande - CEO Opportunity

At the heart of every challenge is the opportunity to innovate, improve and grow. At Opportunity, we turn problems into solutions, offering tools of excellence for each of your projects. We provide solutions to nurture the future and turn every obstacle into a springboard to success.

The staff

Your vision is our opportunity to create a better world.

OPPORTUNITY
Ingenium Cura Opera

GLOBAL MARKET

We are a dynamic and flexible company that, thanks to the technological advancement of its equipment, is able to compete with the national and international market, offering a wide range of machines, both new and reconditioned, for use in the food sector.

But we don't want to stop here... we want to expand all over the world!



BRAZIL
ARGENTINA
CHILE
SPAIN
ITALY
TURKMENISTAN
GEORGIA
GREECE

OUR SECTORS

Our experienced designers develop ideas to adapt the machine park to the customer's specific needs. Opportunity's experience supports its customers, both to increase production and to renovate their plants to a new production philosophy.

35
YEARS OF
EXPERIENCE

200
TURNKEY
INSTALLATIONS

500
SATISFIED
CUSTOMERS



ENOLOGY



BEVERAGE



DAIRY

WHAT THERMAL EXCHANGE IS?

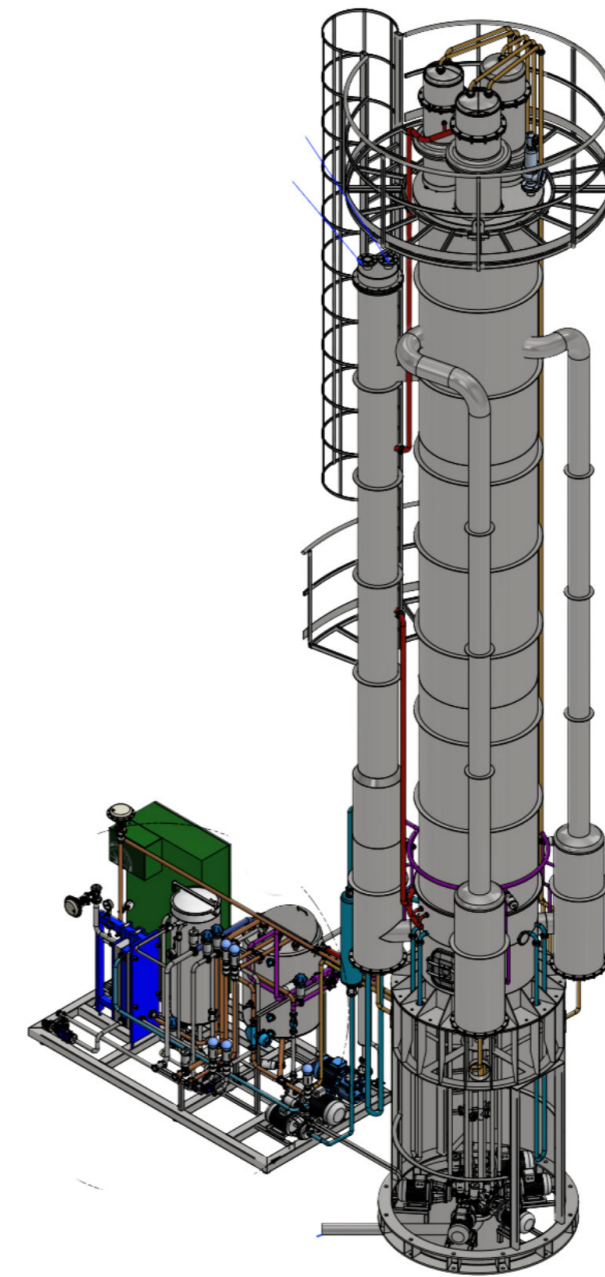
TYPES OF EXCHANGERS

APPLICATIONS

This is a thermodynamic process in which **energy** is transferred between two products at different temperatures via a heat exchanger.

The various types of exchanger are chosen and sized to transfer the temperature as efficiently as possible.

Heat is transferred by convection and conduction through the separation wall.



TYPES OF HEAT EXCHANGERS

The most common classification of heat exchangers is based on the type and shape of the metal interposed between the two fluids. The following types can therefore be distinguished:

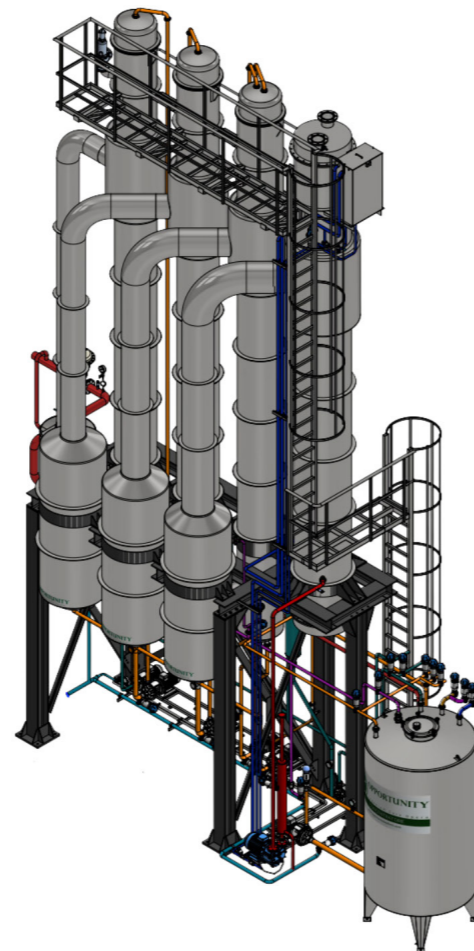
- **Plate exchanger:** where a very thin wall (0.4 - 0.5 millimetres) separates the two fluids, on one side there will definitely be a liquid product and on the other side there will be a liquid or gaseous fluid.
- **Tube-to-tube or multi-tube heat exchanger:** in this category there are innumerable heat exchange combinations depending on the characteristics (consistency and viscosity of the products to be processed)
- **Scraped surface exchangers :** suitable for particularly difficult products.

Heat is transferred by convection and conduction through the partition wall.

They can be placed in countercurrent, where fluids flow in opposite directions.

The following types of operation can therefore be distinguished:

- Plate heat exchangers with gas-liquid exchange
- Liquid-liquid plate exchanger
- Monotubular exchanger
- Multitubular exchangers
- Scambiatori multitubolari



APPLICATIONS

According to the laws of physics, a cold fluid vibrates less than a hot fluid, so the transfer of energy can only take place in one direction.

Temperature is transferred from the hotter fluid to the colder one until a thermal equilibrium is achieved, which must not exceed 5 degrees centigrade to be considered efficient.

The theory of heat transfer from one medium to another, or from one fluid to another, is determined by certain fundamental rules:

Heat is always transferred from a hot medium to a cold medium.

There must always be a temperature difference between the media.

The heat lost by the hot medium is equal to the amount of heat gained by the cold medium, with the exception of losses to the surroundings.

Therefore, the fields of application are the most varied, and the process medium and the processed medium can be hot or cold.

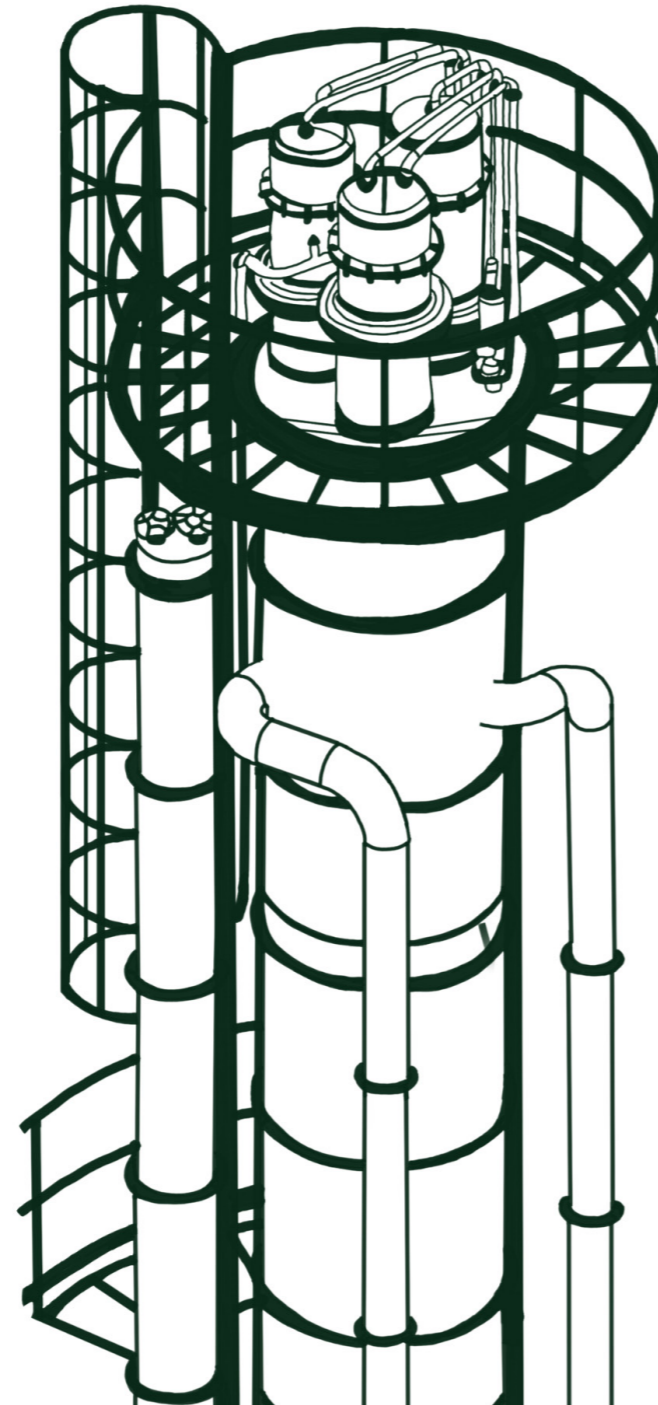


These simple rules are the basis of the **operation of a multi-effect concentrator** where the initial heating medium is steam produced exogenously (boiler) and with it the product to be concentrated is brought to the process temperature, where the contained water can evaporate.

By exploiting another physical principle **concerning the boiling temperature as a function of the pressure to which a liquid is subjected**, the water evaporated from the product to be concentrated becomes the heating medium for the product itself.

This phenomenon related to the possibility of subjecting the product to different pressures (vacuum) allows us to replicate up to **6 to 7 times** the heat transfer process.

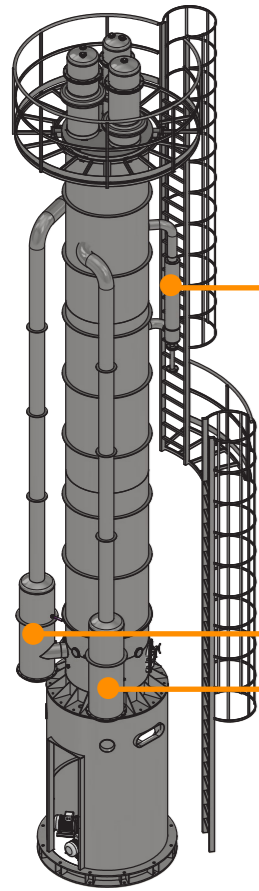
Opportunity largely masters these concepts and, with **sophisticated calculation software**, is able to size exchangers that can replicate these concepts in a way that makes production costs as economical as possible.



WHAT IS THE CONCENTRATOR LIKE?

COMPOSITION

TVR



THERMOCOMPRESSOR

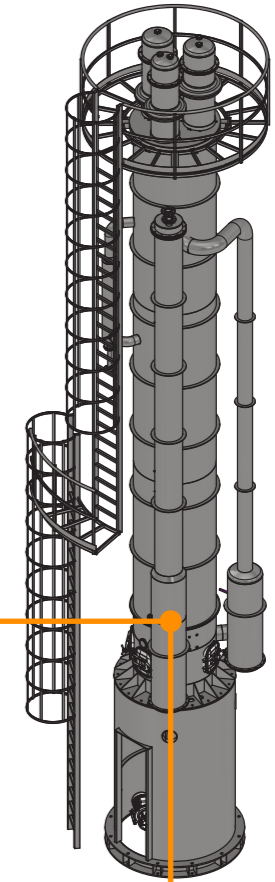
The thermocompressor will be positioned between the separator of effect 2 and the body of effect 1.

SEPARATORS

This is the part of the concentrator where the small product particles contained in the plant vapour are released by centrifugal force against the concentrator wall. It also serves as a connection between the plant vapour of the effect in which it is mounted and the effect that generates the thermodynamic exchange of the subsequent effect.

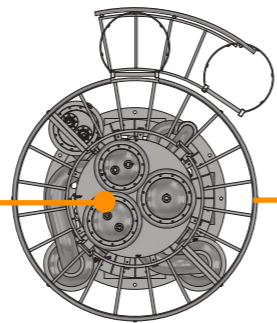
CONDENSER

The condenser is basically a heat exchanger; it is the part where the final condensation of the plant vapour generated in the product concentration during the entire process takes place. The condenser produces, through thermodynamic exchange in its bundle of tubes, a condensation of the vapour.

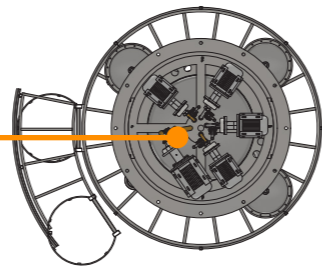


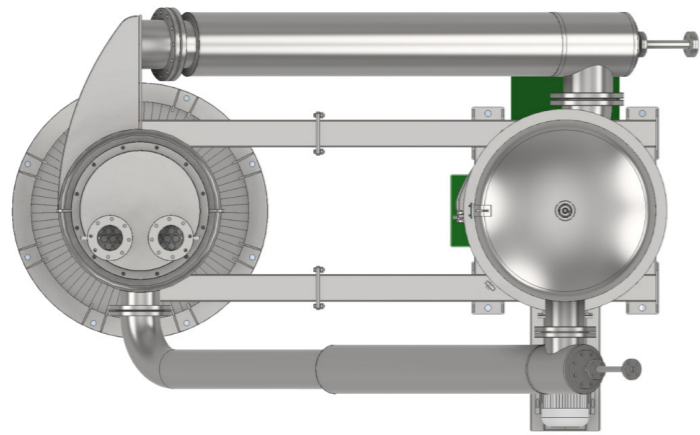
EFFECTS

An effector is where the thermodynamic exchange between steam and product takes place, where the exchange surface (bundle of pipes) is used to extract all the water particles contained in the product to be concentrated on the product side.



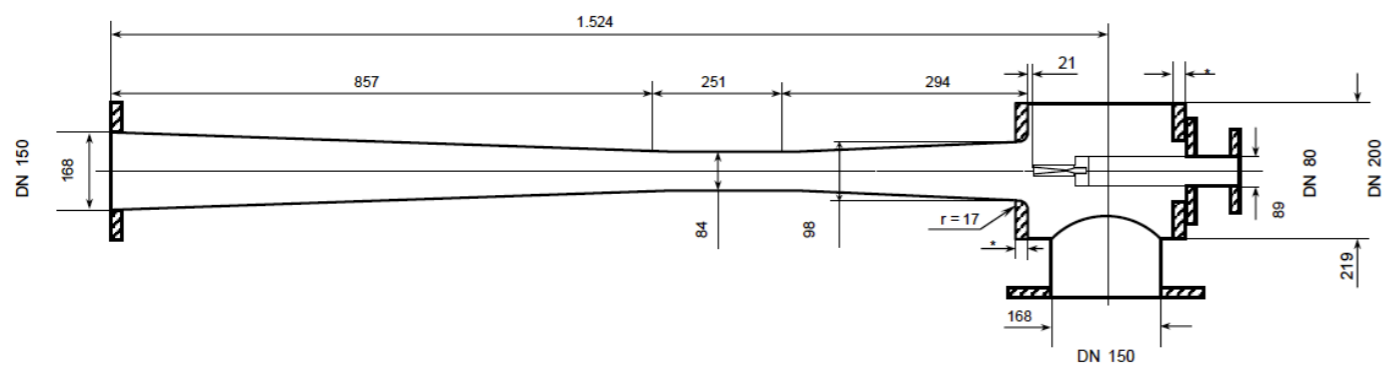
POST PUMPS UNDER THE EFFECTS





The **TVR - Thermal Vapour Recompression** is a device that allows, thanks to the **venturi effect**, a low-temperature vapour from the treated product to be reused to produce a higher-temperature fluid, at an energy cost that can be 40 to 60 % less than engine steam (produced by a boiler).

TVR is calculated and manufactured for each specific application. Suction chamber, nozzle taper and mixing tubes are determined to achieve the desired result.



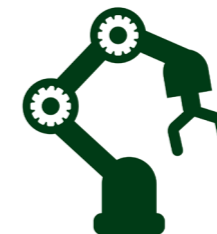
ADVANTAGES OF EFFICIENT THERMAL EXCHANGE



SAVING STEAM AND REDUCING CO₂
EMISSIONS.



IMPROVING THE ENERGY EFFICIENCY OF A
PRODUCTION PROCESS.



AUTOMATION, WHICH HARMONISES THE
RESOURCES AVAILABLE IN THE COMPANY AND
FURTHER REDUCES THE LABOUR REQUIRED TO
CONTROL THE MACHINES.


CONTACTS

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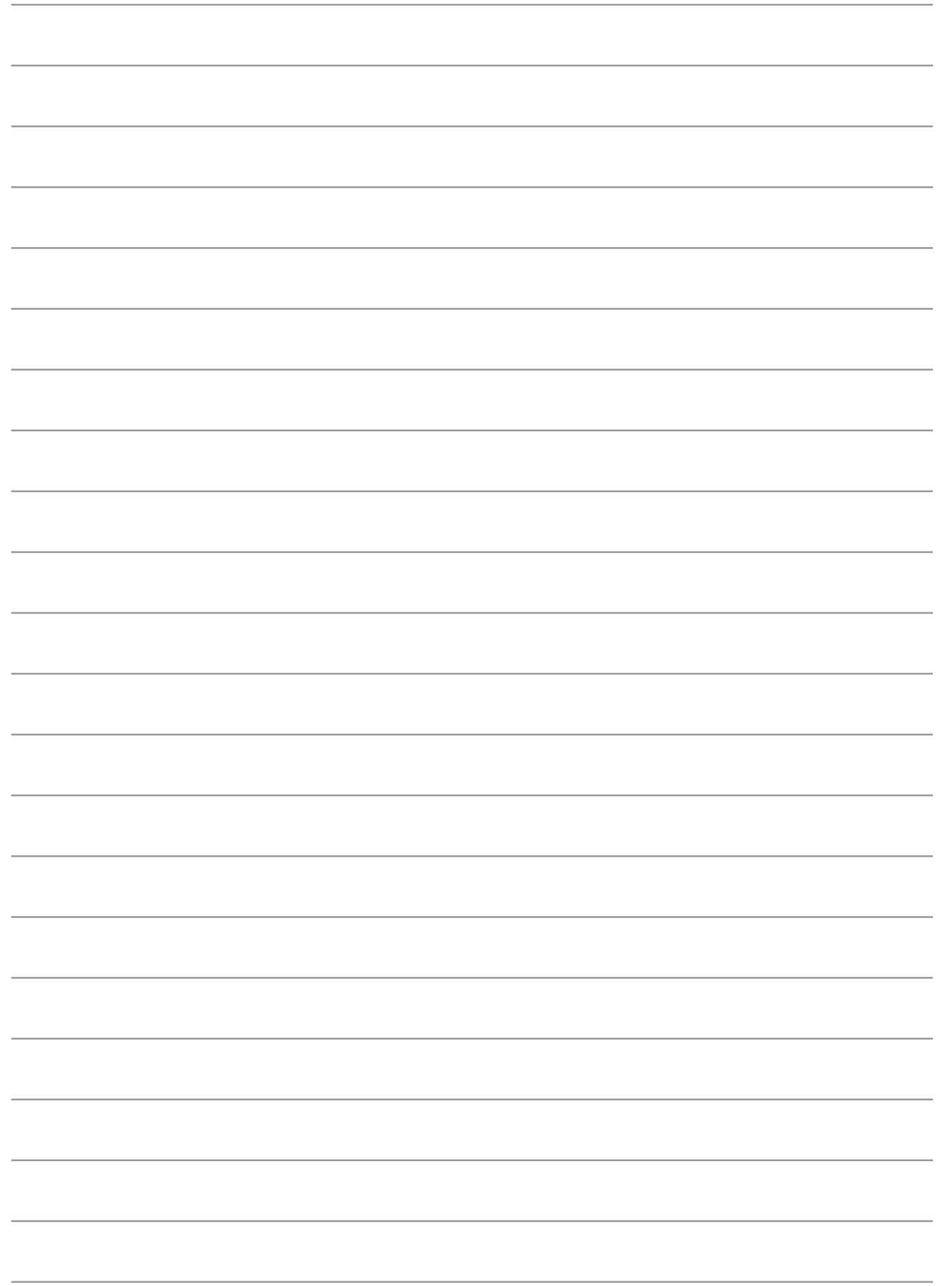
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