



**Marine plastic problems  
and  
Efforts to recycle municipal waste**

UNIDO Multi-stakeholder's Cooperation Dialogue



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SHINKO TECNOS CO.,LTD



# 「Company profile」



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<https://shinko-mfg.jimdofree.com/>  
**【Date of Establishment】** Oct. 1996



Shinko Tecnos Co., Ltd., is listed in a Cabinet Office platform as one of 37 companies' 44 hopeful technologies.

## 【 Our machine is posted in each database. 】



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[http://www.unido.or.jp/en/technology\\_db/2349/](http://www.unido.or.jp/en/technology_db/2349/)



日本貿易振興機構(ジェトロ)

[https://www.jetro.go.jp/en/mjcompany/shinko\\_tecnos](https://www.jetro.go.jp/en/mjcompany/shinko_tecnos)



経済産業省  
中部経済産業局

Chubu Bureau of Economy, Trade and Industry

[https://www.chubu.meti.go.jp/d21kankyos/seeds/g\\_shinkotechnos.pdf](https://www.chubu.meti.go.jp/d21kankyos/seeds/g_shinkotechnos.pdf)

Shinko Tecnos Co.,Ltd.



Plastic recycling: Plastic changing to oil machine (BP-2000N/5000N)



Plastic to Oil Machine Ideal for Power Generation in Developing Countries

【Go to Plastic to oil machine Database】

[https://sdgs-solution-hub.go.jp/seeds\\_details029.php](https://sdgs-solution-hub.go.jp/seeds_details029.php)



Shinko Tecnos Co.,Ltd.



Waste management: Hydrothermal Treatment Technology



Hydrothermal Treatment Technology for Useful Output

【Go to hydrothermal treatment machine's database】

[https://sdgs-solution-hub.go.jp/seeds\\_details030.php](https://sdgs-solution-hub.go.jp/seeds_details030.php)





# 「Waste problem resolving Plastics to Oil Machine」

## (1) Summary

- This machine thermally decomposes crude oil-derived products such as plastics to produce liquid fuel, combustible gas, and carbide.
  - By using a catalyst, it is even possible to produce lower tar content high quality light and heavy oil.
- 

## (2) Features

- Because this machine is a batch process type, it can be used for multiple purposes, such as treatment of waste plastics, waste tires, waste fishing nets, medical waste and pre-processing for recovering precious metals from mobile phones
- This machine can treat of chlorinated and halogenated toxic substances.
- By adopting the most suitable catalyst according to the type of waste, we can produce less tar content recycled oil .
- This machine can keep the running cost very low, because it is a low fuel consumption machine and uses the generated liquid fuel as a heat source.
  - By adopting a two-stage gas cooling system, light oil and heavy oil can be recovered separately
- This machine achieves high safety standards by introducing an emergency automatic stop system, forced cooling system, and off-gas combustion system.



【 Plastic to Oil Machine 】



「The machine generates recycled oil from waste plastics.」



# 「Adoption of Plastics to Oil Machine to treat marine plastics」



【Plastics to Oil Machine】



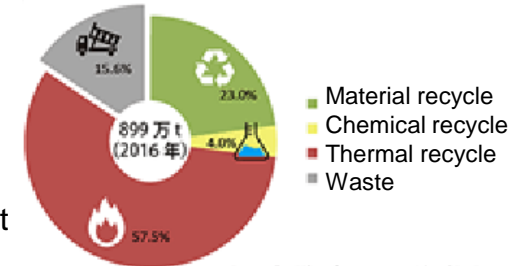
【Marine plastics】



【Waste plastics】

■ The machine for treating crude oil-derived products such as plastics to produce liquid fuel, combustible gas, and carbide

■ By using a catalyst, it is possible to produce light and heavy oils with low tar content.



Resin name	Element symbol	Usage	Aptitude
Polypropylene	PP	building material, machine, case, others	◎
Polyester	PS	transparent kitchenware, TV frame, others	◎
Polyethylene	PE	packing material, fish net	◎
ABS resin	ABS	helmet, vacuum cleaner, laundry machine, car interior, others	◎ off-gas
Polyurethane	PUR	furniture (office desk/chair)	△ low oil reclaiming rate
Polyvinyl chloride	PVC	insulating tape, electric wire cover, dioxide, floor tile, slippers, hose, record,	×○ dioxide
FRP	FRP	related electricity (switch, bush) tray Furniture, building material, others	△ removal of fiber

【Plastics type and aptitude】



【Extracted OIL】



【Refined OIL】



【Oiling machine Video】



# 「Experiment Data of Recycled oil」

Material name	Recycling rate (%)		
	Recycled oil	Gas	Residue
Tire	38	12	50
Nylon bag (PP, PE)	77.3	20.5	2.2
PS pellet	77.5	17.4	5.1
Safety net (PP)	77.5	21.8	0.7
Electric wire cover (PE +EVA)	75.8	17.3	6.9
Mixed plastics (PP, PS, PE)	81.1	18	0.9
Seafood shipping box (styrofoam)	83.1	9.5	7.4
Waste toner (for printing)	49.9	12.8	37.3

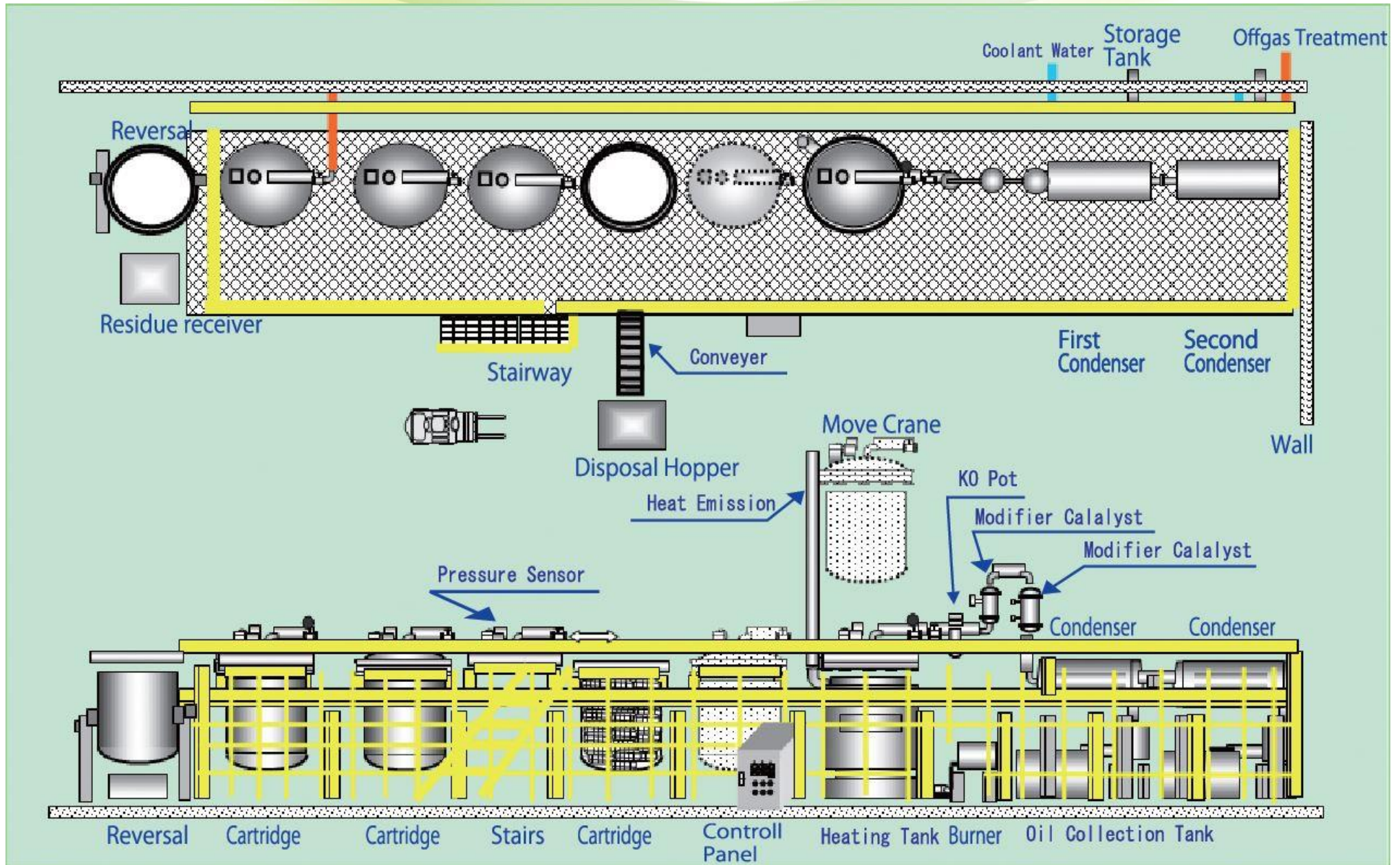
【Recycled oil】 : Heavy oil、Light oil 【Gas】 : Flammable gas (can be used for fuel of this machine's burner. )

【Residue】 : Carbide 、Metal 、Rare metal etc.

※ Depending on the type and the state of waste, oil conversion rate, oil quality etc. will vary greatly.



# 「Flow chart of Plastics to Oil Machine」





# 「Product Lineup」



## 9. Build up the infrastructure of industry and innovation

Organize resilient infrastructure and promote comprehensive and sustainable industrialization and enhance technological innovation.



## 17. Partnerships for the goals

Strengthen implementation tools and revitalize global partnerships for sustainable development.



「Plastic recycling: Plastic changing to oil machine」(BP-2000N/5000N)



「Waste management: Hydrothermal Treatment Technology」

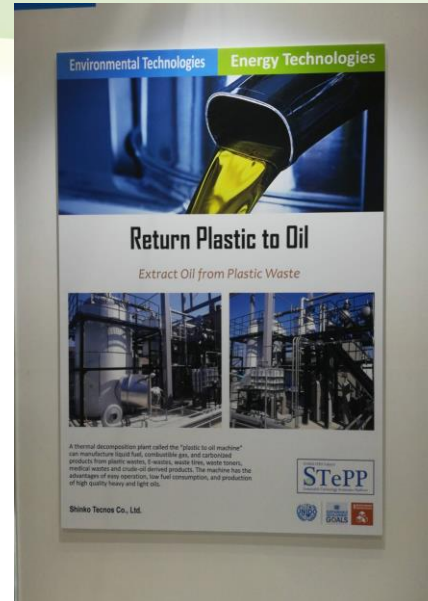


「Hybrid Pyrolysis Machine」  
Volume reduction rate up to 1/300





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【UNIDO's director general, Mr. Li Yong visited the Yokohama event site.】





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Thank you for your attention.



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