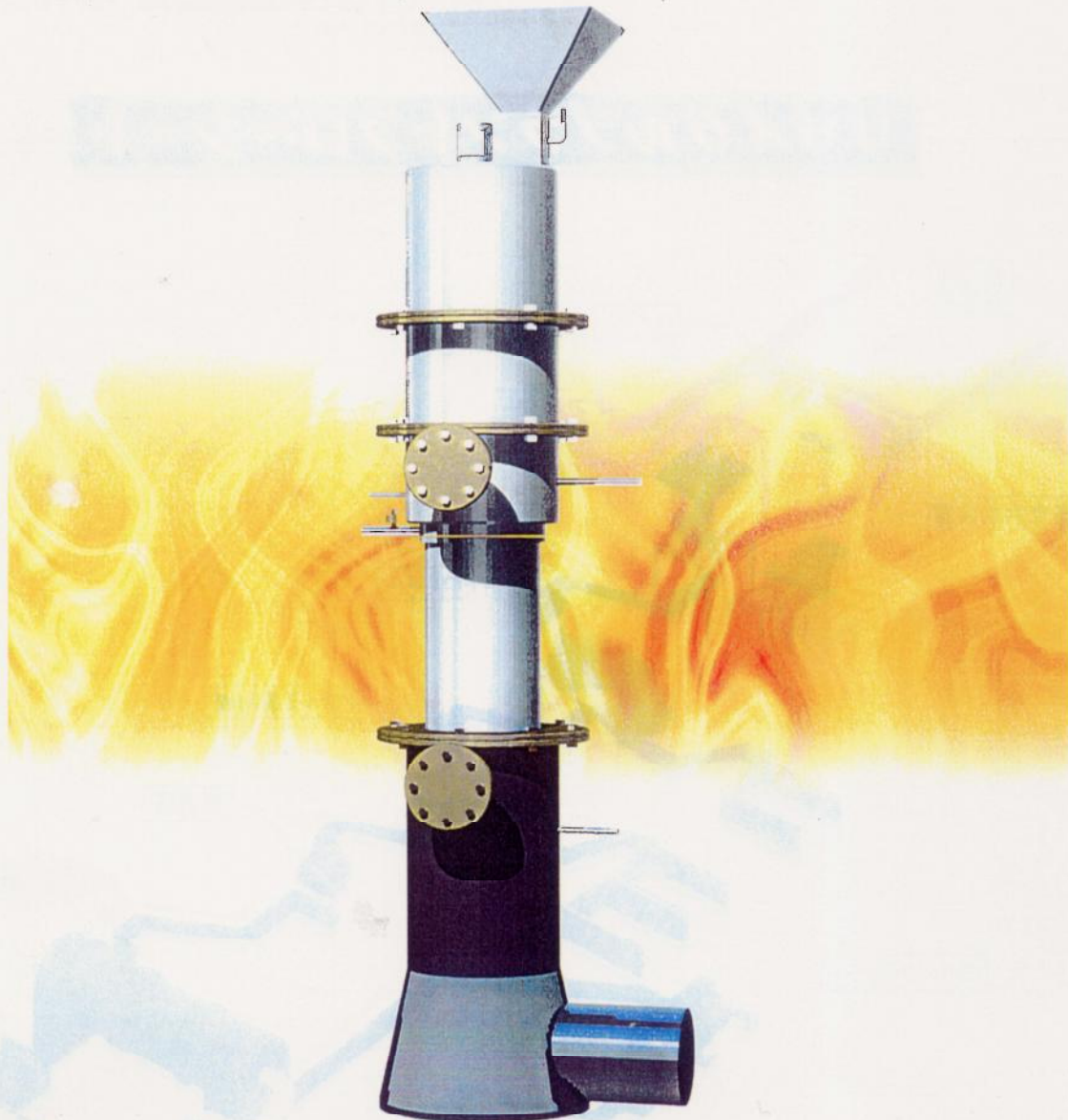


Incinerated Ash Recycling Plant

Incinerated ash detoxification device

Ground Messiah™



Developer/
Manufacturer

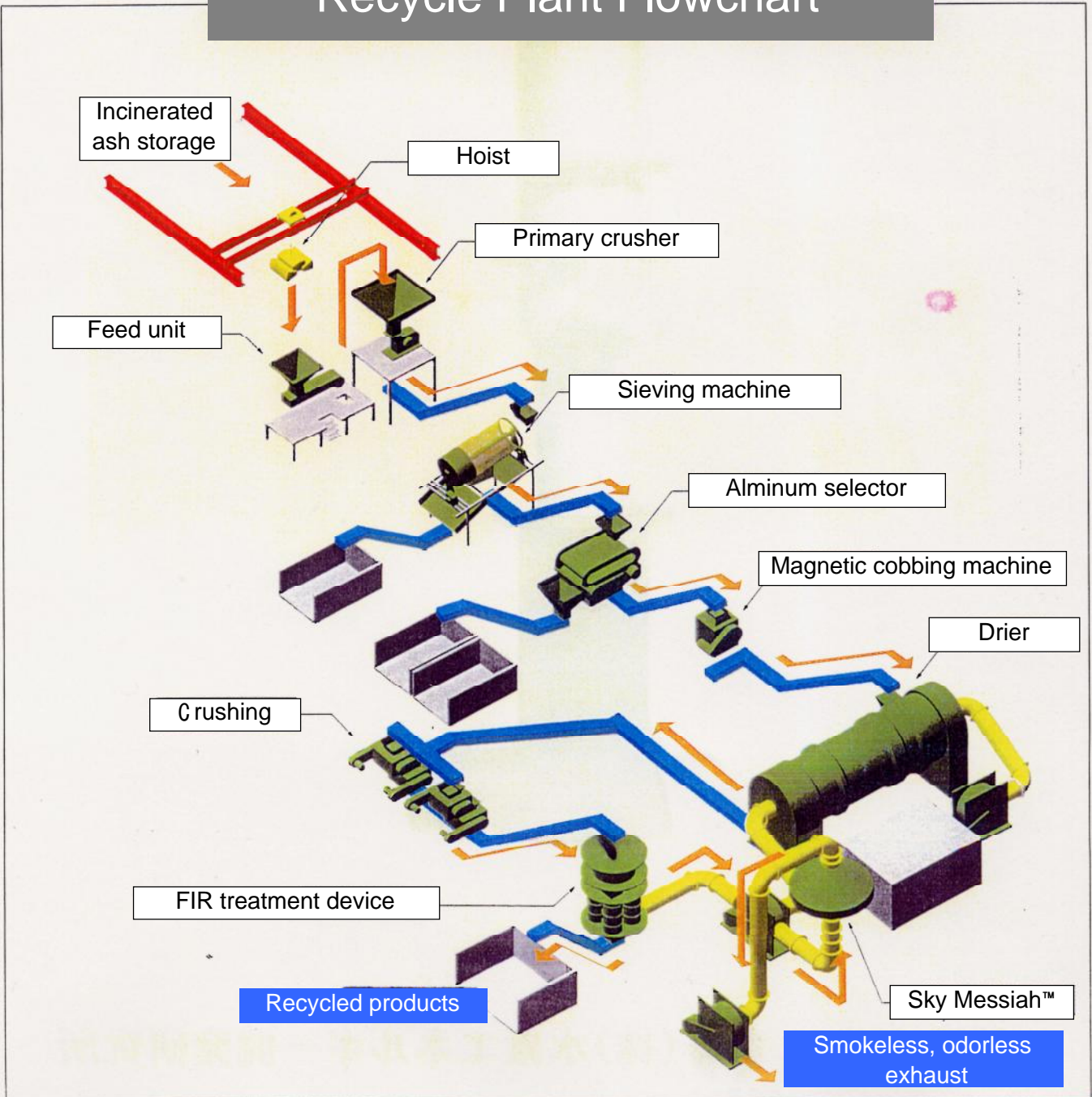


Hydrogen Energy Laboratory Project Co., Ltd.

Ground Messiah™ is an Epoch-Making Equipment for curtailing the waste incinerated ash (including dioxins), and could solve the problems concerned once for all. The waste incinerated ash discharged from any waste incinerated facility includes high levels of dioxins, heavy metals, etc. In Japan, the Law Concerning Special Measures against Dioxins, promulgated on July 16, 1999, designates any general and industrial waste to be specially controlled as soot and dust, waste incinerated ash and other cinders concerned, sludge discharged from an exhaust-gas-cleaning equipment, and any processed material thereof as exceeding 3ng-TEQ/g, including dioxins emitted from any waste incinerator of such particular facility thereof, as well as to prohibit to dispose such waste or treated waste to any final landfill place. Through Ground Messiah™, about 80 ~ 90 % of the waste incinerated ash could be gasified, and such exhausted waste incinerated ash could become to be a pellet form (with the reduced dioxins content to be less than 1ng-TEQ/g).

*Remark : 'n' means one-billionth (1ng = 1/1,000,000,000 g or 10⁻⁹g)
TEQ(toxicity equivalence quantity)

Recycle Plant Flowchart



Standard value of soot and dusts etc. discharged at industrial waste incinerator

Standard against existing facilities	After Dec. 1,2002	3ng-TEQ/g
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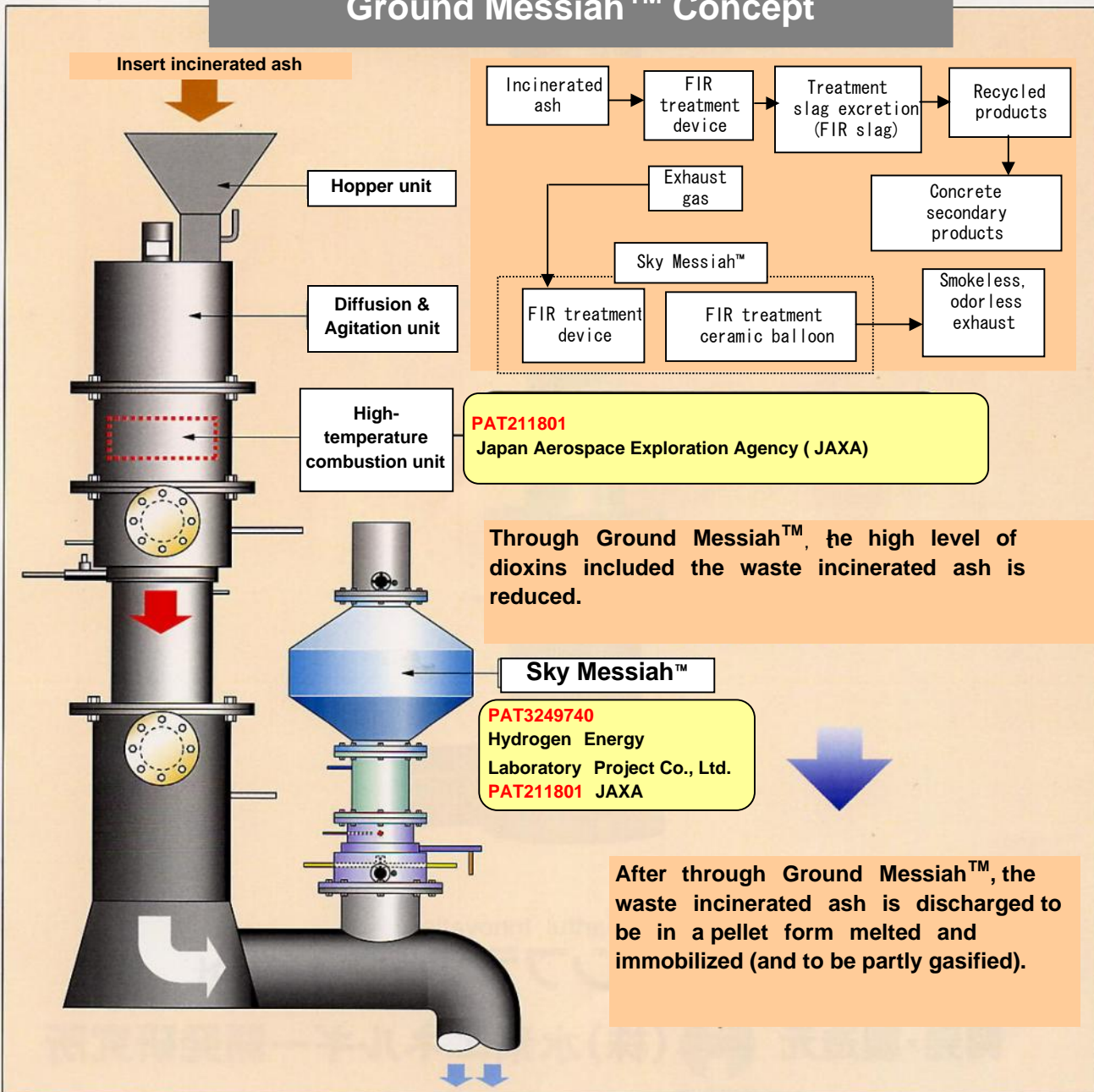
Ground Messiah™ processing result

Dioxin content in incinerated ash		
Before treatment	After treatment	Unit
7.0	0.96	ng-TEQ/g

Sky Messiah™ incineration test

Measured amount of exhaust gas and dioxin		
At combustion	After the treatment	Unit
3.5	0.55	ng-TEQ/g

Ground Messiah™ Concept



Through Ground Messiah™, the high level of dioxins included the waste incinerated ash is reduced.

After through Ground Messiah™, the waste incinerated ash is discharged to be in a pellet form melted and immobilized (and to be partly gasified).