

# Safety Evaluation of PRTR Substances

## How to Read the "Safety Evaluation"

Under the PRTR Law, reporting on emissions of chemical substances into the environment is required. Environmental effects clearly depend not only on the quantity of emissions, but also on their toxicity. In order to reduce environmental impact from chemical substances, it is therefore necessary to take action based on comprehensive evaluations of emissions and toxicity for each substance.

In this respect, started in 2007, we calculate "converted emissions" – "the quantity of emission" of each chemical substance covered by the PRTR Law, multiplied by its "toxicity factor" in accordance with Kanagawa Prefecture's "Guidelines on

Assessment of Safety Impact of Chemicals." Emissions of PRTR substances at each plant are then added up, and are compared with the safety evaluation table wherein the effects on human health and ecosystems are ranked, to show where each plant stands in its effort to reduce PRTR substances.

Using the Hiratsuka Factory as an example, total emissions in the category of effects on human health are 1,892 tons, and the factory is thus ranked "III." Total emissions in the category of effects on the ecosystem are 323 tons, thus a ranking of "3." Accordingly, the safety evaluation of the Hiratsuka Factory is described as "III-3."

## Progress in FY2008

At the Hiratsuka Factory, total abolition of CFC substitutes (HCFC-141b) and trichloroethylene resulted in a one-rank improvement in effects on ecosystems. The Hamatite Plant reduced toluene and xylene emissions, whereby effects on human health and ecosystems became better by one rank. At the Mishima and Shinshiro Plants, xylene was found in paint that had been used in clean-up activities. As a result, effect on ecosystems worsened by three ranks.

## Toxicity ranking and toxicity factor

Rank	A	B	C	D
Toxicity factor	1000	100	10	1

## Ranking of effects on human health

Rank	Total converted emissions (Effects on human health)
I	10,000 tons or more
II	3,000 tons to 10,000 tons
III	1,000 tons to 3,000 tons
IV	300 tons to 1,000 tons
V	100 tons to 300 tons
VI	30 tons to 100 tons
VII	10 tons to 30 tons
VIII	Less than 10 tons

## Ranking of effects on the ecosystem

Rank	Total converted emissions (Effects on the ecosystem)
1	10,000 tons or more
2	1,000 tons to 10,000 tons
3	100 tons to 1,000 tons
4	10 tons to 100 tons
5	Less than 10 tons

## Evaluation of effects on safety (FY 2008)

Category	Effects on safety (effects on the ecosystem)					Better
	1	2	3	4	5	
Effects on safety (effects on human health)	I					Great effect on human health
	II					
Effects on safety (effects on human health)	III		Improvement	Hiratsuka Factory		Moderate effect on human health
	IV					
	V					
	VI		Mie Plant			
Effects on safety (effects on human health)	VII		Mishima Plant Shinshiro Plant			Small effect on human health
	VIII			Improvement	Hamatite Plant	
		Great effect on the ecosystem	Moderate effect on the ecosystem		Small effect on the ecosystem	

Better  
 Better