台橡股份有限公司
TSRC CORPORATION

Waste Management & Circular Economy Model

I. Waste Management

During the product design and development phase, TSRC considers the end of the product lifecycle. Thus, we continue to input our knowledge and technologies to develop recyclable foaming materials and related products. These efforts aim to reduce the environmental impact of waste generated from the end-product application.

TSRC optimizes the process to precisely control material input-output and reduce waste production. TSRC promotes the recycling of by-products within the factories and exploring the utilization of waste outside the factories by collaborating with upstream and downstream value chain partners and other industries. All measures aim to transform waste into valuable resources, expand the secondary raw materials market, and implement the concept of circular economy.

For waste that cannot be avoided due to technological bottlenecks, TSRC properly and carefully manages each factory's industrial and general waste with our concern and responsibility to the environment. We clear, dispose, or reuse waste with high standards in comply with environmental protection regulations of the country or region where each factory is located. TSRC holds itself to strict standards and references the basic principles and framework of ISO 14001: 2015 Environmental Management Systems with verification effective to February 5, 2024 when formulating waste management plans and management goals. We regularly supervise and analyze the waste management results.

TSRC's main production activities include the polymerization, hydrogenation, and synthesis of primary petrochemical materials (including ethylene, propylene, butadiene, and styrene) to produce rubber and chemical materials. During processing and polymerization, organic compounds are added to improve product performance, resulting in waste rubber, waste liquid, sludge, and waste oil. The main industrial wastes are waste liquids (chemicals) from raw materials and additives used in the production process that cannot be recycled in the factory, and waste rubber released from the production equipment. These two bulk wastes are mainly treated by incineration, and the emission of air pollutants during the incineration process may cause air pollution and environmental impact.

All waste generated is treated by qualified waste disposal operators. To ensure that the waste is properly disposed in accordance with the law, TSRC conducts

inspections and audits of waste clearance and disposal companies. TSRC's Kaohsiung Factory conducts regular audits each year on specific waste disposal companies such as hazardous industrial waste, sludge, and waste lubricating oil to ensure that process in accordance with the law. The Gangshan Factory conducts follow-ups from time to time; Shen Hua Chemical tracks the arrival and departure times of waste clearance vehicles. Nantong Industries and TSRC-UBE require disposal companies to send back disposal records on a regular basis in addition to auditing. At the end of the year, TSRC evaluates the operators and the evaluation is a reference for the selection of third-party vendors in the next year. In accordance with local regulations, Shanghai Industries and TSRC (Vietnam) Company Limited require waste clearance and disposal companies to track the flow of waste disposal through online reporting or request companies to provide certification of compliance to ensure proper disposal of waste.

As for the waste that cannot be avoided due to technological bottlenecks, TSRC upholds its responsibility to the environment and carefully controls the waste at each site, and strictly complies with the relevant environmental laws and regulations of the countries and regions where the site is located. TSRC carries out waste clearance, treatment, and reuse with high standards. TSRC formulates waste management plans and management objectives based on the basic principles and structure of the ISO 14001:2015 environmental management system, and regularly monitors and analyzes the effectiveness of waste management. TSRC tracks the weight of waste and the amount of waste generated per unit of product each year to review the effectiveness of TSRC's waste management.

In 2022, TSRC expanded the scope of waste data disclosure. In the past, the general industrial waste data only included general industrial solid waste, but in 2022, recyclable general industrial waste, such as waste plastics, waste packaging materials, and waste steel and electrical machinery, was included for transparent disclosure. Thus, the total amount of general industrial waste increased significantly. The total weight of general industrial waste (including general waste and recycling) 3,260 metric tons in 2022, an increase of 25.78% compared to 2021. For hazardous industrial waste, the total weight in 2022 was 2,144.63 metric tons, an increase of 14.50% compared to 2021. This is mainly because some recycling solvents in the Kaohsiung Factory was no longer recycled due to quality considerations and the non-conventional cleaning of the bottom of the wastewater pond and some barrels in Nantong Industries

released hazardous waste. Overall, TSRC waste generation per unit product in 2022 was 10.01 tons per thousand tons of product production, an increase of 26% compared to 2021. In the future, we will continue to strengthen waste management measures through reduction and resource recovery and reuse.

TSRC's waste management in 2022 was disclosed in the 2022 sustainability report in accordance with the SASB indicators. TSRC has engaged KPMG to conduct a limited assurance on the SASB indicators in accordance with the Statement of Standard on Assurance Engagements (SSAE) No. 3000, "Assurance Cases Involving the Examination or Review of Financial Information That Is Not Historical in Nature" (which was formulated by reference to the International Standard on Assurance Engagements (ISAE) No. 3000 Revised), which is published by the Accounting Research and Development Foundation (ARDF) of the R.O.C. The SASB standards are based on the International Standards for Accounting Research and Development (ISAR) No. 3000 Revised, which is a reference to the International Standards for Accounting Research and Development (ISAR 3000 Revised).

II. Weight of Waste Generated at Each Site in the Past Two Years

2021-2022 Hazardous Waste Recycling and Treatment Weight and Percentage (by Subsidiaries)

(Unit: Metric tons)		TSRC		Shen Hua Chemical	Nantong Industries	TSRC-UBE	Shanghai Industries	TSRC (Vietnam) Company Limited	TSRC Specialty Materials LLC	TSRC Group
		Kaohsiung Factory	Gangshan Factory							
2021	Total weight of hazardous industrial waste		75.23	392.06	335.57	348.50	48.80	0.50	672.39	1,873.05
	Treated by recycling		0.00	0.00	7.91	3.81	0.00	0.00	365.08	376.8
	Percentage of hazardous industrial waste treated by recycling		0%	0%	2%	1%	0%	0%	54.30%	20.12%
2022	Total weight of hazardous industrial waste	136.46	0.00	472.27	475.27	287.08	23.00	1.32	749.23	2,144.63
	Treated by recycling	0.00	0.00	69.36	23.55	6.5	22.93	0.00	566.26	688.60
	Percentage of hazardous industrial waste treated by recycling	0.00%	0.00%	14.69%	4.96%	2.26%	99.7%	0.00%	75.58%	32.11%

Note:

1. This table only includes factories and subsidiaries with manufacturing activities within the reporting boundary. The two trading-based subsidiaries, Polybus and TSRC (Lux.), and the Global Business Headquarter, which are mainly office operations, generate only general domestic waste.
2. The data is from waste transfer records, which is rounded to the second decimal place. TSRC Specialty Materials LLC does not have transfer records, thus the data was estimated according to production volumes. The 2021 data of TSRC Specialty Materials LLC has been restated as the transfer records was obtained, and the 2022 data will be restated in the next report.
3. Hazardous industrial waste includes waste oil, waste liquid, organic waste sludge, sludge, waste chemicals, containers containing hazardous substances, etc., which are identified according to the regulations announced by the competent authorities:
   - 【Taiwan】 Kaohsiung Factory and Gangshan Factory: According to the definition of "Hazardous Industrial waste Recognition Standard" published by Taiwan Environmental Protection Agency.
   - 【China】 Shen Hua Chemical, Nantong Industries, TSRC-UBE, and Shanghai Industries: According to the definition of the hazardous waste list published by the government of China.
   - 【Vietnam】 TSRC (Vietnam) Company Limited: 08/2022/NĐ-CP, 02/2022/TT-BTNMT
   - 【USA】 TSRC Specialty Materials LLC: 40 CFR (Code of Federal Regulations) parts 260 through 278. Louisiana Administrative Code, Title 33, Part V.

III. Circular Economy Model

TSRC continues to promote waste management, including reuse and recycling of by-products and resources within the factory to implement the concept of circular economy and reduce waste. We adopt a managing and auditing mechanism to select waste clearance and disposal vendors and to monitor flow of waste to ensure proper disposal. The measures and results are described below.

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	Waste Reduction	Reuse of By-products (on site)	Waste Recycling (off site)
Measures	By optimizing the process control, the reaction temperature will be stabilized and the conversion rate will be improved. By increasing the sampling analysis, the process conditions will be more accurate and the waste and by-products will be reduced.	Reduce waste generation through the implementation of reusing by-products within the factory.	If the waste cannot be reused within the factory, we cooperate with the waste disposal companies to convert the waste into resources.

	Waste Reduction	Reuse of By-products (on site)	Waste Recycling (off site)
Results	**Shen Hua Chemical** • The original product manufacturing process generate low purity monomer by-products. Through rolling formula adjustment, the conversion rate is improved, and the reaction temperature is stabilized, and by-product purity mastery is increased to improve the accuracy of by-product isolation, effectively reducing 412 metric tons of by-product in 2022, a 13.44% (476 tons) reduction compared to 2021. The measure also generates GHG emission reduction co-benefits, reducing 144 metric tons CO_2e.	**Shen Hua Chemical** • Distilled and recovered laboratory waste liquid, saving 40 liters of solvent for the year. • Reuse and sell waste glue **Nantong Industries** • Recycling of laboratory waste liquid and he THF is 100% recycled • Partial reuse of waste pallets after sorting • Reuse of waste packaging barrels in the factory • Reuse waste oil through refinery • Remanufacture waste space pack **TSRC-UBE** • Reuse and sell waste glue • Partial reuse of waste pallets after sorting **TSRC Kaohsiung Factory** • Reuse of waste packaging barrels in the factory	**Kaohsiung Factory** • Turned waste rubber into recycled rubber raw materials and reused 31 metric tons in 2022 **Gangshan Factory** • Waste rubber sold to downstream businesses • Scrap metal packing boxes were handed over to steel mills to be remanufactured into steel **TSRC (Vietnam)** • Pallet materials were sold for reuse after repairs. In 2022, 1,093 pieces pallet were sold **Shen Hua Chemical** • Scrap metal packing boxes were handed over to steel mills to be remanufactured into steel **Nantong Industries** • Scrap metal packing boxes were handed over to steel mills to be remanufactured into steel • Scrap electrical machineries were sent to qualified enterprises for dismantling