

## WASTE MINIMIZATION AND RECYCLING

The generation, management and disposal of solid wastes from our operations has the potential to impact the public health and environment in our local communities. We are therefore committed to minimizing the generation of solid wastes from our operations and safely managing these solid wastes using a hierarchy of environmentally sound management practices, including ISO 14001 and Lean Manufacturing. We also believe that finding alternative uses for waste materials and byproducts presents the greatest opportunities to minimize the impact of these wastes and to further contribute to a circular economy.

Materion utilizes Lean Manufacturing principles to identify projects and actions globally that minimize waste through actions and initiatives that maximize process yields and efficiencies. Examples of waste management and reduction projects performed in 2024 included scrap reduction and recycling, edge loss minimization, equipment upgrades and process efficiency optimization. We also have programs in place to actively reuse shipping materials, including pallets, drums, and coil spools. Many of our waste streams, including metal and alloy scrap or off-spec product, may contain high-value mineral or metal content and are recycled into our processes. Additionally, Materion recycles chemical and waste streams generated by our manufacturing processes including used oils, antifreeze, refrigerants, lighting, batteries, electronic waste, and office waste.

The 2020 - 2024 company-wide Waste Generation and Recycling data is provided in the following table. The increase in absolute and intensity values for hazardous waste generation, disposal, and recycling compared to the previous year is attributed to efforts to improve the completeness of data reporting at our facilities. Non-hazardous waste reporting categories showed a slight decrease compared to the previous year. During 2024, approximately 51% of Materion's combined total waste generated was diverted from disposal and reused or recycled back into the process. Of the portion sent for disposal approximately 73% was sent to landfill; with the balance managed via incineration or other methods.

## Waste Reduction, Recycling, and Water Use

Hazardous Waste	Unit	2019	2020	2021	2022	2023	2024
<b>Totals (Absolute)</b>							
Generated	MT	*	1,082	1,396	1,482	2,086	2,505
Disposal	MT	*	1,082	1,396	1,405	1,539	1,722
Recycled	MT	*	-	-	77	546	783
<b>Intensity</b>							
Generated	MT/\$M	*	1.6	1.6	1.3	1.9	2.3
Disposal	MT/\$M	*	1.6	1.6	1.3	1.4	1.6
Recycled	MT/\$M	*	-	-	0.1	0.5	0.7
<b>Disposal Details</b>							
Landfill (Onsite)	%	*	-	-	-	-	-
Landfill (Offsite)	%	*	9%	-	15%	27%	35%
Incineration (Offsite)	%	*	-	-	5%	3%	4%
Other	%	*	91%	100%	80%	70%	61%

Non-Hazardous Waste	Unit	2019	2020	2021	2022	2023	2024
<b>Totals (Absolute)</b>							
Generated	MT	*	6,033	3,733	7,809	8,841	8,149
Disposal	MT	*	5,425	2,869	3,508	3,715	3,480
Recycled	MT	*	608	864	4,300	5,126	4,669
<b>Intensity</b>							
Generated	MT/\$M	*	9.1	4.3	7.0	7.8	7.4
Disposal	MT/\$M	*	8.2	3.3	3.1	3.3	3.2
Recycled	MT/\$M	*	0.9	1.0	3.9	4.5	4.3
<b>Disposal Details</b>							
Landfill (Onsite)	%	*	4%	0%	55%	57%	62%
Landfill (Offsite)	%	*	0%	1%	33%	41%	30%
Incineration (Offsite)	%	*	-	-	4%	2%	1%
Other	%	*	95%	99%	8%	1%	7%

- Notes:
- 1: Previously reported data has been updated to incorporate improvements in our data collection and reporting methodology. These changes enhance the accuracy and comparability of reported figures over time.
  - 2: MT = Metric Tons
  - 3: MT/\$M = MT per Million Dollars of Value Added Sales
  - 4: \* = data not collected in 2019

## MINERAL WASTE

Our operations include the Materion bertrandite ore mine located near Delta, Utah, which has been producing beryllium feedstock since 1968. The mine process results in the generation of high volumes of waste rock to expose subsurface ore for extraction. Displaced waste rock is managed in a responsible manner and in accordance with a Utah-approved Mining and Reclamation Plan. Mine reclamation work includes surface contouring to restore surfaces to match natural topography, replacement of topsoil, and restoration of natural habitat by reseeding and monitored revegetation.

For 2024, Materion produced more mineral waste rock than the prior year but at a lower amount than 2020. Significant fluctuations in mineral waste production is typical given multi-year mining cycles.

Mineral Waste	Unit	2019	2020	2021	2022	2023	2024
Total Mining/Mineral Waste Disposal)	MT	281,384	2,885,751	54,632	55,153	1,538,950	2,200,142
Details							
Waste Rock	%	78.8%	98.3%	-	3.3%	95.5%	94.0%
Other	%	21.2%	1.7%	100.0%	96.7%	4.5%	6.0%

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## MATERION RECYCLING

At Materion, we pride ourselves on our product stewardship. With nearly 100 years of experience in precious metal refining and recycling, Materion offers rare earth and precious metal recycling and reclamation services that help our customers compete in today's competitive business environment where advanced materials recycling is increasingly more important in the supply chain. In fact, we offer two of the largest and most efficient state-of-the-art chemical and electrolytic refineries designed to handle our customers' precious metal and other valuable scrap from production waste streams. As an example, at our Buffalo facility in 2022, at least 55% of our gold input originated from post-consumer scrap. Our material recycling and reclamation services capabilities include:

- [Aluminum Twin Wire Arc Spray Coating](#)
- [Assaying](#)
- [Beryllium Metal & Beryllium Aluminum Recycling and Reclamation](#)
- [Large Area Glass Shield Kit Cleaning](#)
- [Plating Solutions for Precious Metals](#)
- [Precious Metal Refining and Recycling](#)
- [Precision Parts Cleaning/Shield Cleaning](#)
- [Process Material & Precious Metal Recovery](#)
- [Sputtering Target Recycling](#)

## **WATER USE**

Water is a vital natural resource, essential to both life and a healthy environment. It also plays a critical role in our manufacturing processes. We are committed to managing and using this resource responsibly and sustainably. Therefore, we seek to conserve water across our operations and manage water and wastewater responsibly; and consistent with our Environmental Policy which requires proactive stewardship of the environment and responsible management of any emissions to water.

Materion is continuing to identify water use efficiency reduction opportunities and to deploy water efficiency best management practices. Our facilities emphasize closed loop water recycling systems where feasible including in process equipment such as cooling towers, chillers, boilers, scrubbers, parts washing, equipment cooling/heating, and sluice water. Materion is continuously working to improve water usage accountancy systems at our facilities; inclusive of water usage mapping, submetering, monitoring, and general process efficiency improvements.

We have 14 locations that are classifiable as meeting "high" or "extremely high" baseline water stress criteria as defined by the World Resource Institute. As of 2024, these sites comprise approximately 54% of all water withdrawals; the majority of which occurs at our Delta Mining and Milling operation at where we continue to prioritize water use efficiency and usage reduction.

The 2019 - 2024 companywide Water Use data is provided in the following table. Water withdrawal and consumption totals and intensity increased in 2024 versus 2023. These increases are primarily attributed to cyclical mining and milling activities at our Delta facility which accounts for 56% of total withdrawals and 96% of total consumption. In 2024 Materion recycled 0.27 Million Cubic Meters (Mm<sup>3</sup>) of water which is a slight increase from prior year. In 2024, Materion recycled approximately 13% of withdrawn water.

## Waste Reduction, Recycling, and Water Use

Water Management	Unit	2019	2020	2021	2022	2023	2024
Totals (absolute)							
Withdrawal	Mm <sup>3</sup>	1.29	1.42	1.64	1.79	1.87	2.11
Discharge	Mm <sup>3</sup>	0.60	0.70	0.86	0.93	0.90	0.88
Consumption	Mm <sup>3</sup>	0.69	0.72	0.78	0.86	0.96	1.23
Intensity							
Withdrawal	m <sup>3</sup> /\$M	1,774	2,128	1,911	1,603	1,655	1,920
Discharge	m <sup>3</sup> /\$M	822	1,051	1,003	833	799	800
Consumption	m <sup>3</sup> /\$M	951	1,077	908	769	856	1,119
<b>Withdrawal Details</b>		<b>2019</b>	<b>2020</b>	<b>2021</b>	<b>2022</b>	<b>2023</b>	<b>2024</b>
From Groundwater	%	62%	59%	54%	55%	55%	63%
From Third Party	%	38%	41%	46%	45%	45%	37%
<b>Other Withdrawal Details</b>							
For Mining/Milling Operations	%	51%	48%	45%	45%	49%	56%
From High Stress Water Sources	%	50%	44%	44%	45%	48%	54%
From Brackish Sources	%	0.7%	3.9%	0.9%	0.5%	0.9%	1.8%
<b>Water Discharge Details</b>		<b>2019</b>	<b>2020</b>	<b>2021</b>	<b>2022</b>	<b>2023</b>	<b>2024</b>
To Third Party	%	44%	49%	53%	53%	49%	39%
To Surface Water	%	56%	51%	47%	47%	51%	61%
<b>Other Details</b>							
To Brackish Water	%	-	-	-	-	-	-
<b>Consumption Details</b>		<b>2019</b>	<b>2020</b>	<b>2021</b>	<b>2022</b>	<b>2023</b>	<b>2024</b>
From Mining/Milling Activity	%	95%	95%	94%	94%	95%	96%
From High Stress Areas	%	95%	89%	94%	95%	94%	94%
<b>Water Recycling</b>		<b>2019</b>	<b>2020</b>	<b>2021</b>	<b>2022</b>	<b>2023</b>	<b>2024</b>
Recycled Volume (Mm <sup>3</sup> )	%	0.04	0.22	0.22	0.24	0.26	0.27
As % of Withdrawal	%	3%	16%	14%	13%	14%	13%

### Notes:

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2: Mm<sup>3</sup> = Millions of cubic meters

3: m<sup>3</sup>/\$M = cubic meters per Million Dollars of Value Added Sales