Personal Protective Equipment

Protective Solutions for Lithium-Ion Battery Manufacturing

Brought To You by DuPont | Mar 01, 2024

Lithium-ion batteries (LIBs) serve as the primary energy source for Electric Vehicles (EVs). Electricity discharges when lithium-ions flow from the anode (negative electrode) to the cathode (positive electrode), and vice versa during charging.

The XEV industry is witnessing unprecedented growth. A paradigm shift from combustion engines to hybrid and battery electric vehicles is unfolding across various global regions. The International Energy Agency (IEA) predicts EVs to constitute over 30% of the global vehicle fleet by 2030, a considerable increase from a 10% share in 2021.

However, a lesser-known aspect of this booming industry is that the battery cell manufacturing presents a unique set of challenges for HSE managers to both protect their workers and prevent contamination to the product and process. This entails introducing new safety protocols, specialized training, and offering optimal Personal Protective Equipment (PPE). As the industry evolves and expands, more challenges will arise and HSE managers must proactively address emerging complexities to safeguard workers.

The European Chemicals Agency (ECHA) and the U.S. Occupational Safety and Health Administration (OSHA) warn against severe or fatal hazards associated with certain chemicals used in manufacturing. Exposure can occur from slurry preparation to electrolyte filling and formation*. The consequences clearly highlight the importance of selecting the right Personal Protective Equipment for the workers and the environment. In certain advanced processes, this might entail the use of clean protective garments (ISO class 4-6) like ***Tyvek® IsoClean® garments***.

DuPont provides a wide range of disposable chemical protective clothing and single-use cleanroom apparel solutions to help protect the people who encounter hazardous materials in battery cell or battery materials production. With knowledge and experience around the globe, DuPont advises customers along the value chain about the PPE needed from Cathode and Electrolyte Manufacturing to Cell Assembly. North America has seen tremendous growth in XEV business, with the passage of the Inflation Reduction Act of 2022, the associated tax credits, and local supply chain and sourcing requirements.

When it comes to employee safety and compliance, DuPont Personal Protection has helped a number of XEV companies with understanding hazards involved in the quickly-evolving battery manufacturing process. DuPont sales, EHS, and Technical team members are here to help support the needs of these

businesses and channel partners who supply them.

**https://echa.europa.eu/substance-information/-/substanceinfo/100.105.301*
https://echa.europa.eu/substance-information/-/substanceinfo/100.229.943
https://www.osha.gov/battery-manufacturing/hazards

DUPONT COVERALL SELECTION GUIDE FOR LITHIUM-ION BATTERY MANUFACTURING

	Tyvek® IsoClean®	Tyvek® 400	Tyvek® 600	Tyvek® 800	Tychem® 2000	Tychem® 2000 SFR	Tychem® 4000	Tychem® 6000
Electrode slurry preparation (Mixing)		●	●	●	●	●	●	●
Coating and drying		●	●	●	●	●	●	●
Calendering			●	●	●	●	●	●
Cutting electrodes			●	●	●	●	●	●
Cell assembly	●		●	●	●	●	●	●
Electrolyte filling and formation							●	●
Chemical Handling, Cleaning & Maintenance		● (a)	● (a)	● (a)	●	●	●	●

For more information about DuPont PPE, visit our powerful online tool and find proper protective garments which would offer you the protection you deserve.

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Go to MSCDirect.com to browse DuPont Tyvek® 800 coveralls as well as their line of Tychem PPE.

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