

# Tanaris Power, TPHX, Profile, Summary

Tanaris Power develops Smart Lithium-Ion batteries and power solutions for various industrial applications. We design, engineer and produce some of the worlds safest, highest performance, most reliable and flexible Lithium-Ion batteries.

Tanaris Power lithium-ion batteries feature best-In-class safety, reliability, performance and flexibility for your industrial power applications

All Tanaris Power battery packs are based on Lithium-ion battery technology. Each of our batteries incorporates our advanced Battery Management System (BMS) along with numerous redundant safety and performance features to ensure that our batteries are the safest, most reliable, best performing and flexible batteries available

# **Tanaris Power Lithium-Ion Benefits**

Our lithium-ion batteries offer numerous benefits over conventional lead-acid batteries, including:

Significantly improved vehicle performance

Significantly longer run time between charges

Short duration charging has no negative effects

3x to 5x longer life span than lead-acid batteries

65-70% less weight than similar lead-acid packs

Completely maintenance free operation

No acid vapor, maintenance or storage risks

Integrated BMS for system monitoring and safety

Ruggedized design for extreme outdoor use

#### Safety

Your safety is at the core of every design decision and component selection we make

All of the Lithium-Ion cells we use must meet international UN38.3 standards for safe transportation and usage

We use the Lithium-Iron-Phosphate chemistry for our cells, which provides a level of thermal stability that some other cell chemistries do not offer

Every battery we make incorporates a dedicated advanced Battery Management System (BMS) along with other redundant intelligent monitoring circuitry that monitors each individual cells' operation and temperature to ensure that the whole pack operates safely

Each and every battery incorporates numerous additional safety features such as an integrated battery isolation fault monitoring system, redundant fuses, sealed safety relays, audible alarms and much more

# Reliability

We only use the best quality automotive grade components to ensure maximum reliability

Each and every one of our batteries and the components that go into them, go through extensive burn-in and testing processes before they make it into any Tanaris Power battery

Every batch of Lithium-Ion cells are subjected to an array of

standardized tests to ensure they are well qualified before they go into any battery

All cells are are secured using specialized hold-down mechanisms within the battery to reduce shock and vibration

BMS and all electronics are designed to strict automotive standards, using only automotive and industrial grade components, for the highest level of reliability in all operating environments

All battery cases and electronic connectors are sealed to ensure the battery will work in all weather conditions

### Performance

Rigorous in-house cell testing and characterization allows us to manage and optimize the cell selection for each battery application, ensuring optimal power delivery for the life of the system

We test and evaluate cells from a wide variety of manufacturers to

find the best performing cells

Our advanced Battery Management System maintains peak performance of all cells in real time

Proprietary cell balancing algorithms ensure that all battery cells maintain their balance at all times

All aspects of battery charging are under real time monitoring and direct control of the BMS which means the BMS selects the appropriate charging profile in order to extend battery life

Cell behavior is learned with usage, which allows the system to better predict vehicle demands and understand overall battery health flexibility

The BMS calculates and compares cell-by-cell performance to ensure peak battery performance

### **Flexibility**

Battery packs are available in industry standard voltage levels such as 24V, 36V, 48V, 72V and 80V

Battery capacity can be selected to match application requirements at each voltage level, from 40Ah to 900Ah

Single or multi-module battery pack configurations are available depending on specific space or layout requirements

Physical dimensions of many battery modules can be customized to client specific needs

Integrated CAN bus communications can be customized to interface with other intelligent equipment such as on-board chargers, charging stations, motor controllers, driver displays, etc.

BMS control logic can be customized to interact with and control other vehicle equipment such as emergency stop button, key-switches, analog or digital gauges, mode selection switches, buzzers, sirens, lights and more

**Sources:**  $\underline{T}$  <u>he Company</u> <u>OxBridge</u> Research, <u>OTCKING</u>, <u>DailyStockDeals</u>, <u>OTCst</u> <u>ockIQ</u>

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Written by Editor

