Munters

Ensure operational readiness

Advanced dehumidification for military equipment storage and protection

Protect function and value

The critical need for humidity and temperature control in defense

Modern defense operations span land, sea, air, and logistics – and all are vulnerable to the unforgiving effects of climate. Uncontrolled humidity, temperature extremes, and salt air can corrode metal, degrade electronics, and weaken critical components. If left unchecked, these environmental threats lead to costly maintenance, premature component failure, and reduced equipment availability.

Temperature and humidity control is not a luxury; it is mission-critical. By managing humidity and temperature in hangars, magazines, ship holds, and storage depots, defense forces can reduce corrosion, prevent mold growth, and slow equipment degradation.

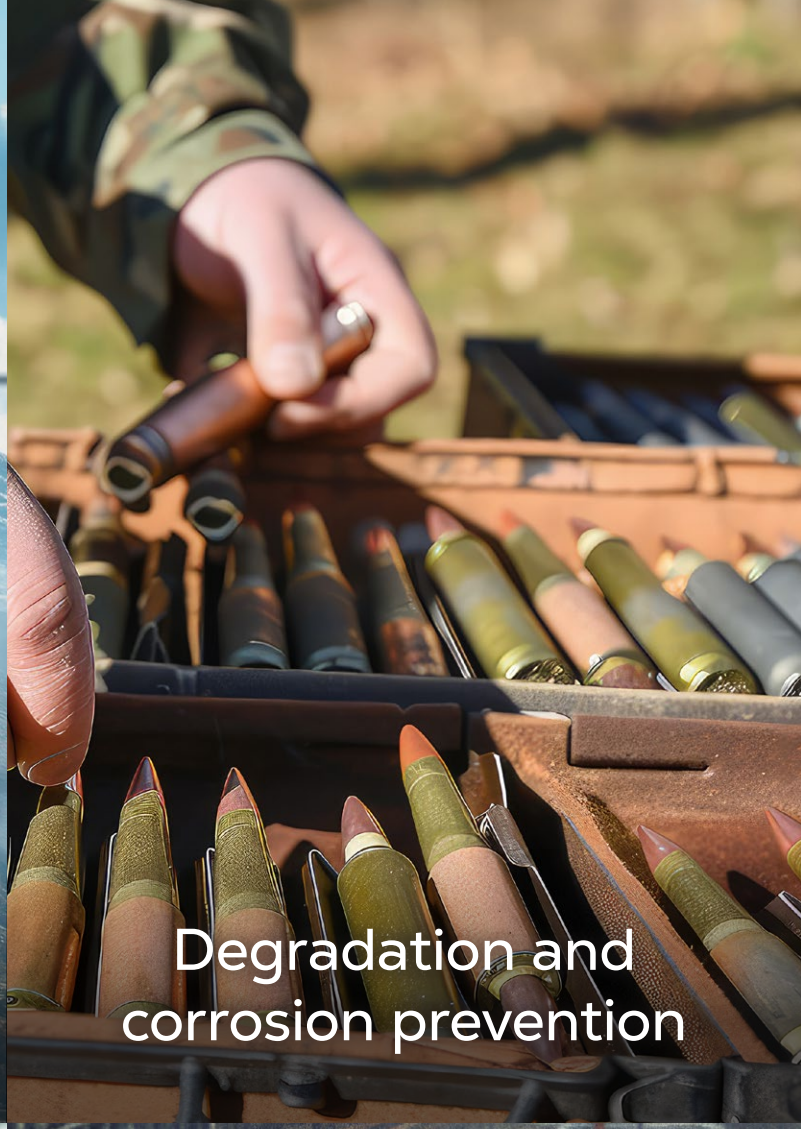
Controlled humidity environments (CHE) are specialized settings where humidity levels are carefully regulated using dehumidification techniques. These environments are widely recognized by defense forces as an effective way to preserve and maintain military equipment. By preventing corrosion and other humidity-related issues, CHE ensures the longevity and readiness of military equipment. This approach delivers significant benefits and cost savings, providing a cost-effective solution for maintaining the operational integrity of defense equipment.

The result is better operational readiness with fewer unexpected failures and extended equipment service life. Effective humidity control reduces maintenance costs, supports faster activation, and extends the functional life of key defense systems. Equipment remains ready when needed, and repair cycles are fewer and farther between.

Protect military equipment and systems

According to U.S. Army National Guard, U.S. Army Reserve, and Swedish Defense Material Administration (FMV) studies, investments in weapon system humidity control delivers a return on investment within months due to higher availability and reduced maintenance costs. Dry air is used to completely envelop the materiel or, if that is not possible, is injected into critical areas within the total system or object. This method can be applied to stored items and objects as well as to active equipment that is used daily.


Extended
operational readiness


Degradation and
corrosion prevention


Improved
system reliability


Lower
life cycle costs

Defense humidity and temperature control applications

Defense equipment and infrastructure face constant exposure to humidity, temperature fluctuations, and environmental contaminants. Effective dehumidification protects these assets by reducing corrosion, stabilizing sensitive equipment, and maintaining operational reliability – whether in storage, transit, or active use across land, air, sea, and support facilities.

Aerospace systems

Aircraft spend most of their operational lives parked. While on the ground, condensation forms inside avionics systems, airframes, and insulation. Moisture accelerates rust, fungal growth, and electronic failure. Temperature swings during flight further increase the risk, especially when combined with human occupancy. Maintaining low humidity inside airframes or in storage hangars slows corrosion, prevents mold, and helps keep electronics in working order. This leads to fewer maintenance interventions, better performance, and increased reliability during operations.

For aircraft in storage or awaiting readiness, dry-air circulation inside the fuselage and avionics bays helps avoid faults on start-up, improving mean time between failure (MTBF) and ensuring rapid return to service. In high-value aircraft, including reconnaissance and communications platforms, consistent humidity control protects intricate sensor systems, reducing costs and downtime.

Land-based systems

Tanks, APCs, trucks, and shelters degrade when idle. Condensation and ambient humidity degrade metal surfaces, sensors, and fire-control systems. Mold and corrosion damage seating, insulation, and electronics. Vehicles stored in a controlled environment experience reduced degradation and need fewer inspections or repairs. Dry conditions also allow for quicker reactivation, sometimes within hours. This helps maintain high fleet availability and reduces strain on logistics and maintenance teams.

Humidity-controlled storage conditions also preserve paintwork, gaskets, rubber seals, and optical systems, reducing the likelihood of part failure or functional damage. Whether stored in centralized depots or on forward bases, land systems benefit from fewer inspection intervals and improved readiness across mission-critical functions.

Naval systems

Naval environments present extreme challenges: high relative humidity, constant salt exposure, and confined compartments. Moisture causes widespread corrosion, especially in radar domes, gearboxes, turbines, and electrical systems. Active vessels and those in lay-up both benefit from humidity control, which reduces failures and simplifies maintenance. During refits or construction, dry air protection limits flash rust and helps maintain clean environments.

Dehumidification improves reliability and protects against long-term deterioration, especially in complex mechanical and electronic systems. Applying dry air during maintenance also reduces the impact of delayed HVAC installations or open compartments, protecting shipboard integrity. For ships on active patrol or docked in coastal ports, humidity control contributes to longer lifespans for sensitive systems, including sonar, weapon guidance, and navigation platforms.

Ammunition storage

Ammunition is stored in hardened magazines or mobile containers, often with high relative humidity due to their construction and location. Moisture leads to corrosion of metal parts, deterioration of packaging, degradation of electronics, and even chemical instability. High humidity increases the risk of misfires or damage, making munitions unsafe or unreliable.

Dry air storage stabilizes these conditions, preventing corrosion and decomposition, and extending the safe shelf life of stored ammunition. Storage and handling become safer and more efficient, and fewer munitions are lost to degradation. Dehumidification solutions contribute to safer handling conditions and support long-term storage of a wide range of ammunition types – from artillery shells to guided munitions – ensuring they remain effective and operationally dependable.

Logistics and spare parts

Warehouses storing textiles, electronic spares, vehicle parts, and medical equipment are vulnerable to condensation and fungal growth. Moisture in storage leads to corrosion, mold, and chemical breakdown. Dry air storage keeps items in ready condition, even during long idle periods.

Lower humidity preserves equipment condition, reduces waste, and ensures that essential parts and gear are available when needed. From regional depots to forward supply bases, implementing humidity control for stored equipment supports the long-term availability of mission-essential inventory. Electronic boards, sensors, cables, uniforms, and protective gear retain their usability and performance – minimizing spoilage, extending usable life, and increasing trust in the readiness of available inventory.

Munters climate control solutions – protecting performance long term

Munters delivers smart, energy-efficient dehumidification systems designed to meet the specific challenges of military storage, maintenance, and active operations.

Options range from small or portable units to customized solutions integrated into vessels and buildings. No matter what challenges you face, Munters dehumidifiers deliver uncompromising humidity control – preventing corrosion, and ensuring mission readiness.

With Munters, you can count on more than just industry leading equipment. Our comprehensive service portfolio ensures your dehumidifiers continue to safeguard your mission for years to come. With Munters Service Agreements, we help maintain consistent performance through proactive maintenance and access to genuine parts. We also offer startup and commissioning support, extended warranties, and retrofit options with the latest technology.

By combining dependable humidity control technology with long-term service and support, Munters helps defense forces reduce total cost of ownership and preserve the functionality of critical assets under any conditions.

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About Munters

Founded in Sweden in 1955, Munters has grown into a global leader in humidity and temperature control, with 20 manufacturing facilities around the world and sales offices in more than 30 countries.

Backed by approximately 4,000 employees worldwide and nearly more than 15 BSEK in net sales, we have the expertise and resources to meet the most demanding defense requirements.