

DRDO – FICCI Accelerated Technology Assessment and Commercialization Programme

HAPO Chamber

High Altitude Pulmonary Oedema (HAPO) chamber is a portable first aid device used for treating varying degrees of acute mountain sickness including HAPO. The most effective treatment for HAPO is to move the patient to a lower altitude, which is often not practical, specially at the forward posts, due to non-availability of aircraft or hostile weather condition. HAPO chamber which is a light weight (5kg) cylindrical one-man chamber runs on the principle of increasing the atmospheric pressure around the patient thereby simulating descent in altitude. The patient is kept inside the chamber and can be inflated to a maximum pressure of 130 mm Hg thereby simulating a descent of about 2500m 8000 feet without any physical movement. The principle feature is the APC unit which when connected to AC power supply maintains the pressure between 110 mm Hg to 130 mm Hg. 3. In the absence of AC power supply, the unit can also be powered by a battery and an inverter unit provided along with chamber The chamber is durable and cold resistant. It has a long air/water-proof zip running across the length and has three transparent windows for the observation of the patient. A pressure gauge is provided for reading the maintained pressure of the chamber and a release valve is provided to protect against any inadvertent pressure build-up. This chamber opens automatically in case the pressure goes above the permissible limit. An adjustable leakage valve is provided for maintaining a reasonable leakage rate for prevention of carbon dioxide build-up and excessive heat accumulation.

Possible areas of application

High altitude mountaineering expedition, Kailash, Manasarovar, Yatra etc