Industrial Oxygen vs. Medical Oxygen

Hospitals are facing severe shortage of oxygen at most of the places. While treating Covid patient the shortage of oxygen stands as the most serious issue & can prove a serious life-threatening hazard. Medical oxygen is a critical component in the treatment of COVID-19. It is the most essential tool in our fight against COVID-19. Even if 10-15% of covid patients need active management including oxygen, this small percentage of patient load is itself enough for oxygen scarcity. If the numbers rise now or in future it shall prove extremely dangerous for patient management. Shortage of oxygen is due to demand-supply mismatch. The demand for medical oxygen has increased exponentially during the pandemic.

At this juncture the country will have to face two important tasks; the first being to meet the demands immediately & to raise the reserve portion considering the future. Geographical constraints in the oxygen transportation across the country is the biggest practical issue. Oxygen is an inflammable gas. To prevent accidents, it is stored and transported in cryogenic cylinders. But India does not have enough cryogenic cylinders. The increased transport cost has increased the cost for the end users. Hospitals are getting oxygen at rates 3-4 times higher than the normal rates.

While industrial oxygen is being shunted towards the hospitals, it is important to address the differences between the medical oxygen & industrial oxygen. Medical oxygen is a type of oxygen that is produced & used specifically for medical purposes. Medical oxygen can only be generated by medical air compressors. The medical oxygen generators or compressors usually are in oil-free or oil-less varieties.

The transport & storage cylinders, rather the entire supply chain strictly controls the presence of water to prevent the rusting process inside the cylinders. In addition, Medical oxygen is no odour oxygen.

Oxygen is used in industries, in manufacturing plants for combustion, oxidation, cutting and various chemical reactions. The difference is that purity levels of industrial oxygen are not at par with medical oxygen. There can be impurities from the containers of industrial oxygen. Medical oxygen cylinders should also be free of contaminants. The industrial cylinders should be thoroughly cleaned before use. Industrial oxygen is not intended to be inhaled like medical oxygen.

Industrial oxygen can be generated by oil-lubricated, oil-less or oil-free compressors. This will depend on what kind of product is produced using the compressed air application. Oil-free compressors shall be suitable for oxygen to be shunted to the healthcare side.

Strict regulations & setting parameters pertaining to tank cleanliness is must in order to eliminate the possibility of any potentially harmful contaminants & infections. Industrial oxygen isn't regulated as strictly as it is used to accelerate or support some sort of industrial function. Which also means that there may be some level of contamination in the tank that can be administered for such industrial purposes. Knowing this, industrial oxygen should never be used for medical purposes unless strict parameters are applied vigilantly. Conversion of Industrial gas cylinders in to medical oxygen cylinders definitely shall have risk of contamination & infection. This needs to be addressed immediately in view of the current crisis situation.

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