

10. Hypoxia (deficiency of oxygen)

[For any inquiry, please see the Yellow-Page.]

- ◆ Even one breathing in the air with low (less than 16%) oxygen concentration is quite dangerous, because the gas exchange is prevented, and that leads to further aspiration of oxygen-deficient air.
- ◆ A human body cannot detect the oxygen concentration by itself. When you go to or work at a place where the oxygen concentration may be low (replenishment place of liquid nitrogen, inside of accelerator cavity, etc.), you should carry an oxygen concentration detector.
- ◆ The oxygen concentration in normal air is around 21%, and it should be more than 18% at normal pressure and temperature. Stop working and leave there immediately, when the oxygen concentration is found to be below 18%.
- ◆ Keep the oxygen concentration above 18% by continuous ventilation at a closed place or a place where a huge amount of gas is used.



<General Information>

- If you have a risk of hypoxia in your work, please consult the administration of safety and hygiene (see the “yellow page”) beforehand.
- If you have a risk of hypoxia in your work, do not work alone.
- If there is a person who has a licence of the operations chief of oxygen deficient danger, he or she should manage the workers directly.
- The place with the risk for deficiency of oxygen should be enclosed with warning rope, and a warning sign should be posted .
- Use an air aspirator when you are going to rescue a person suffering from hypoxia.
- The following places or cases have high risk of low oxygen concentration ;
 - 1) a place where a freezing mixture (liquid nitrogen etc.) is used with a large quantity and may leak
 - 2) use of a freezing mixture in a closed and small room or space
 - 3) a culvert or a pit in which cables or gas pipes are laid
 - ④ a tank or a facility filled with inert gases
 - ⑤ a place where much inert gas is emitted (highly concentrated inert gas acts as choking gas).