

PARTICULATE MATTER (DUST)

Respirable or Inhalable



Not all dust is created equal. The following two types of dusts are of concern:

Inhalable - particles that can be breathed in through the nose or mouth.

- smaller than 100 microns (μm) in diameter, which is about the width of a human hair.
- can affect the upper respiratory system: nose, mouth, throat or upper respiratory tract.
- certain types of hardwood, the grinding of metals such as lead-containing alloys and earth-moving activities involved in construction and remediation.

Respirable - particles that can enter the lungs and penetrate into the gas exchange region.

- smaller than 10 microns (μm) in diameter, they are so small that they are invisible under normal lighting conditions.
- grinding and drilling processes can cause respirable dust particles containing quartz, silica and various hazardous metals, to become airborne.

How much dust is hazardous to health?

It depends on the type of dust a person is exposed to. Refer to the The Occupational Health and Safety Act, Regulations for Hazardous Chemical Agents (2021), for more information on exposure limits.

Effects of dust to health:

- Eye irritation
- Skin irritation
- Irritation of the stomach and intestines, if swallowed
- Respiratory conditions (shortness of breath), lung disease, scarring, cancer, fibrosis
- Inflammation of the heart etc.

Work activities that can create dust:

- Dry cutting e.g. paving stones, concrete, bricks etc.
- Dry sweeping and use of compressed air to clean surfaces
- Crushing and screening of rock
- Emptying dust collector bags into skips and other containers
- Milling, grinding, sanding, sand-blasting or other similar operations
- Stockpiling large volumes of materials such as soil, sand, grains, seeds and flour, ore etc.

How to reduce dust exposure:

- Segregating or enclosing the processes
- Using wet cutting or grinding methods
- On-tool dust extraction
- Use less harmful materials
- Local exhaust ventilation (LEV)
- Enclosing material storage areas
- PPE (by selecting the appropriate PPE for the work)
- Washing facilities and good standards of cleanliness

Look out for our on-line training courses in April & May

LASER SAFETY
19th April 2023
9am - 12pm

**INTERNAL AUDITORS
ISO 14001 & ISO 45001**
16th, 17th & 18th May 2023
9am - 3pm each day

**MACHINE SAFETY
RISK ASSESSMENT**
30th May 2023
9am - 12:30pm



**CONTACT US TO PROVIDE
THE FOLLOWING SERVICES
FOR YOUR BUSINESS:**

- EHS Risk Assessments
- Occupational Hygiene Surveys
- Ergonomics Surveys
- EHS Management System Development and Implementation
- Environmental Monitoring
- Identification of EHS Legal Requirements and Compliance Audits
- Construction EHS Services
- Construction H&S Files
- Internal Auditor Training
- General EHS Training



Department of Employment
and Labour Approved
Inspection Authority
(OH0049-CI-09)



Southern Office

PO Box 27607
Greenacres
Port Elizabeth
6057

Tel: +27 (0)41 365 6846
info@safetech.co.za

Northern Office

PO Box 80171
Doornpoort
Pretoria
0017

Tel: +27 (0)82 4111 571
carlita.westoby@safetech.co.za



Department of Employment
and Labour Approved
Inspection Body
(OH0049-CI-09)



OH0049



OXYGEN & FUEL EQUIPMENT

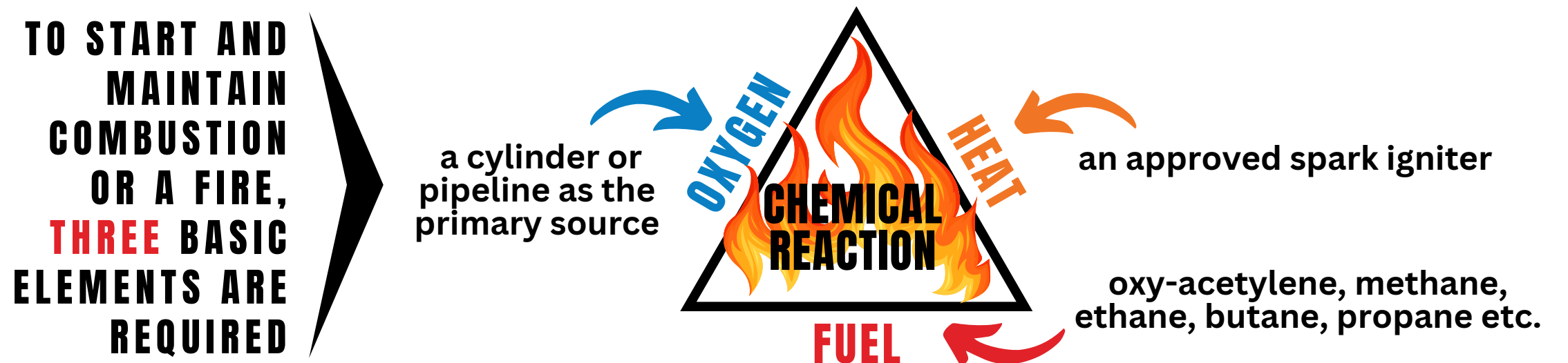
Oxy-fuel processes (e.g. using oxy-acetylene) such as brazing, cutting, welding and heating, require a tremendous amount of energy in the form of heat. The combustion of fuel gas in pure oxygen, or combined with ambient air oxygen, can produce temperatures of up to 3000° Celcius.

When released in a controlled manner, over an extended period of time, this heat energy can be a very useful and safe tool. In contrast, if misused, the equipment will release the same tremendous amount of energy, but the release is uncontrolled and immediate. This will result in an uncontrolled fire and/or explosion that will cause damage to equipment and property, serious personal injury and possibly even death.



Injury / Damage can be caused by:

- poorly maintained equipment
- untrained/poorly trained/complacent operators



Do's

- ✓ Keep oxygen and fuel gas separate at all times until required;
- ✓ Check for fuel leaks: fuel gases will burn readily in air alone;
- ✓ Check for oxygen leaks: oxygen will vigorously support the combustion of anything that will burn;
- ✓ Keep workspace well ventilated and free of gases, fumes and combustible products;
- ✓ Keep equipment contaminant free, especially free from oil and grease.

Don'ts

- ✗ Use unapproved devices like matches or lighters to ignite torch flames;
- ✗ Weld, cut or heat on vessels of unknown origin or without proper preparation;
- ✗ Operate equipment in areas containing other combustibles;
- ✗ Use leaking or otherwise faulty equipment – repair or replace before using.
- ✗ Substitute oxygen for compressed air.



NIGHT WORK RISK ASSESSMENT
Basic Conditions of Employment Act - Section 17 (3a)

The modern “24-hour Society” is a condition where we have become both consumers and producers at the same time: requiring, as well as making available, goods and services at any time of the day and night. Recent statistics show that the majority of the working population is now engaged in “non-standard” working hours. These include: shift and night work, week-end work, split shifts, on-call work, compressed weeks and prolonged duty periods.

The body is synchronised to night and day by a small part of the brain known as the circadian clock. Body functions such as heart rate, blood pressure, temperature, digestion and brain activity fluctuate over each 24-hour period, under the guidance of the circadian clock.

A shiftworker is at increased risk of health problems, such as digestive upsets, obesity, heart disease and accidents due to excessive daytime sleepiness.

