

FPASA

FIRE PROTECTION ASSOCIATION
OF SOUTHERN AFRICA

The Role of Risk
Management in Insurance
+ an Introduction to
Solvent Extraction risks

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Back to Basics

- It is critical for **underwriters, and insurance professionals** in general, to have a **basic understanding of all risks insured** in order to make educated decisions regarding the future of business as well as reinsurance purchase needs.
- **Code application, Best Practice guides and ESG** should be a major component of risk management as it encapsulates the strategic vision and mission of the firm and therefore focuses on sustainability.



Data is our friend

- Analysing trends in **fire, flooding, drought and lightning** density is key to estimating potential losses.
 - Climate change – drought, fires, lack/ limited water
- Analysing trends related to **fire brigade's response** times, preparedness, etc.
- Want **homogenous portfolios** by setting conditions/baselines that force them to behave similarly, and then adapting risk measures to special projects.





Insurance Underwriter
+ Growing the Business

Risk Management

- Risk management plans are **never finished**.
- They must be **revised periodically** because risk, risk control, and risk transfer methods change constantly.
 - E.g. Occupancy shifts without approval
- Risk management involves 3 basic steps:
 - Risk/hazard **assessment** (get someone independent).
 - Risk/hazard **identification**.
 - Decisions about how to **control** the risk.
 - Implementation and follow-ups included.



Risk/Hazard Assessment

- Execute a risk assessment. Get a feel for the risk 1st hand.



Risk/Hazard Identification

- Identify the risk for damage to property.
- Some risks are obvious and others not so much.
- We think it's the risk managers responsibility, however, fire risk management is the responsibility of **underwriting and risk teams alike as the 2-work hand-in-hand**.
- Other risks not as obvious, such the apprentice challenge with the solvent extraction plant.
- **International guides** such as NFPA and FM Global provide a great base from which to commence.



Risk Control

- Insurers these days are the main risk control drivers (*should be the other way around; the insured should be driving risk control to ensure their longevity and client base is protected*).
- Underwriters/ managers must weigh up the **EML/PML** against the inherent risk associated with some occupancies. The age-old debate of **risk awareness and control versus risk avoidance**.
 - However, in the modern context, where all insurance companies are under pressure to grow their portfolio, is risk avoidance in entirety feasible?
 - It would be better to be more informed of occupancy risks and use that as a platform with clientele to manage occupancy class risks for improved risk management with the ultimate aim of developing the client into a great one.



Risk Control

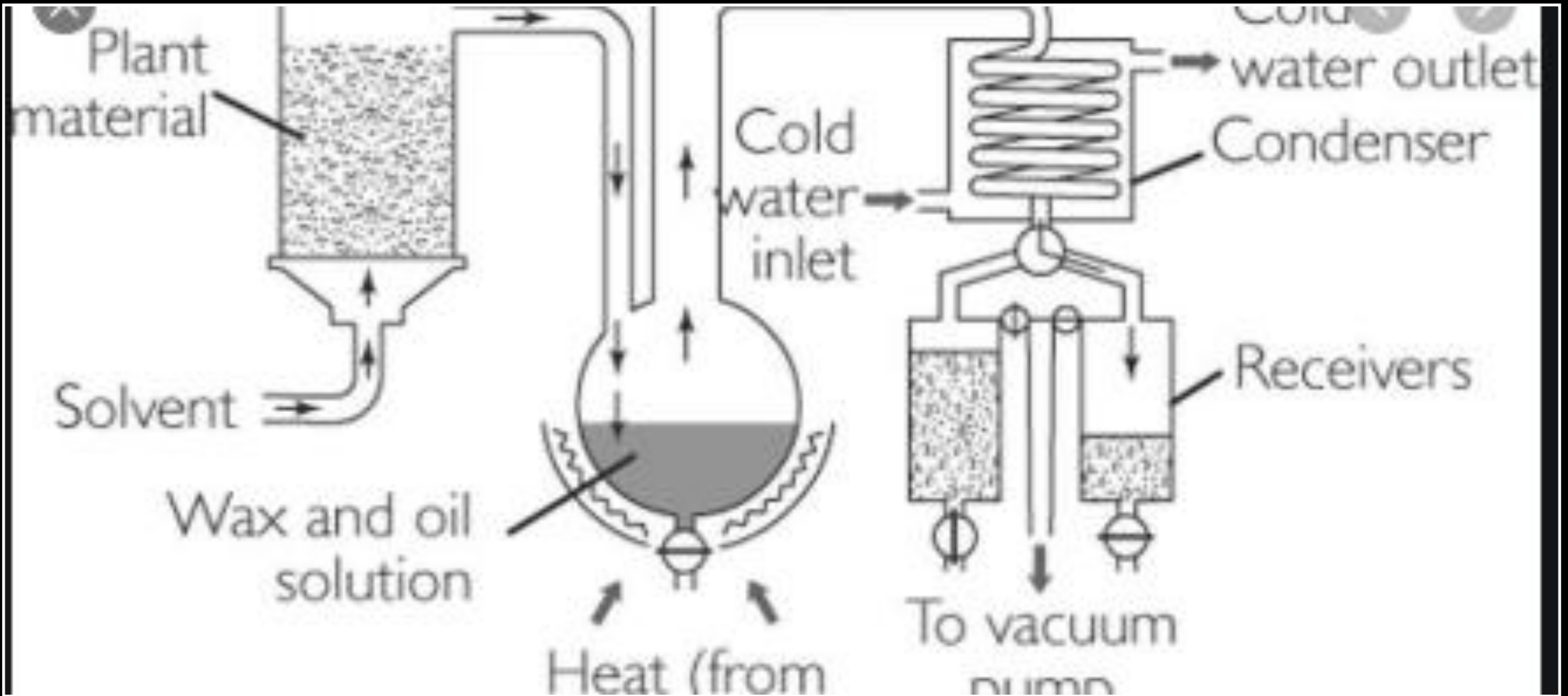
- Critical to have a **well-oiled underwriting and risk management division**, especially at critical times such as *Renewal of Accounts (occurring monthly)*
- While risk avoidance has its place in your risk management plan, the risk-reduction tool will help build a controlled risk environment essential for growth of the portfolio.
 - “For example, would you let your campers play soccer on a field full of holes or sprinkled with shards of glass? Of course not! Site selection for activities is an essential part of risk reduction.” *Unknown author*



Risk Control

- **Training** is another example of risk reduction. Staff should have a clear understanding of their duties, know what to do, when and how to do it, and be encouraged to continually improve and work together.
- **Risk transfer** reduces risk to an organization by passing the risk along to others. This can be accomplished contractually using hold harmless and indemnification clauses in leases and other contracts. But the most common risk **transfer** mechanism is buying insurance.
 - Other lines with co-insurers
 - Reinsurance. However, if you have a poor track record you will be red flagged by reinsurers as having poor judgement.



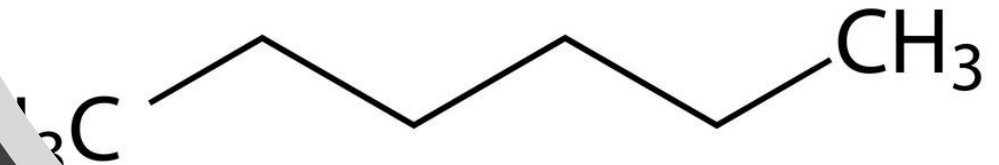
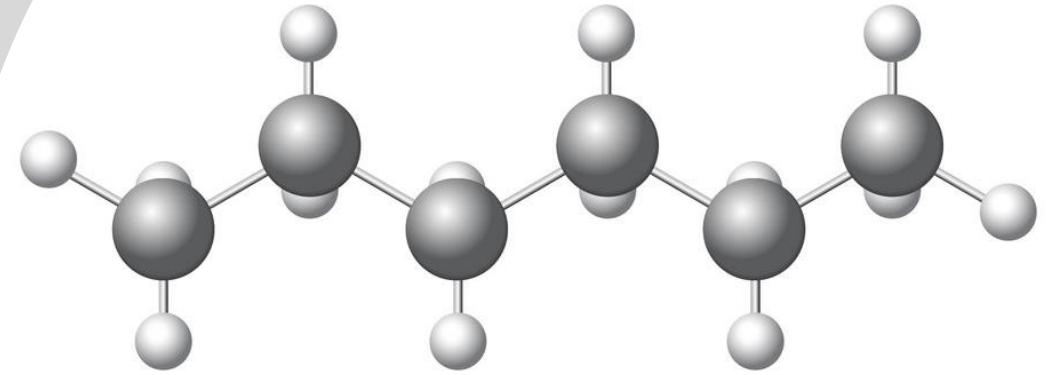


Solvent Extraction - SX

Basic definitions

- **Lower flammable limit:** minimum concentration in the air for a substance to ignite
- **Upper flammable limit:** the maximum concentration of a substance in air, above which combustion will not be supported.
- **Non-combustible material:** in the form in which it is used, will not **ignite, burn, support combustion**, or release flammable vapours when under abnormal heat or fire for a tested specific period of time.

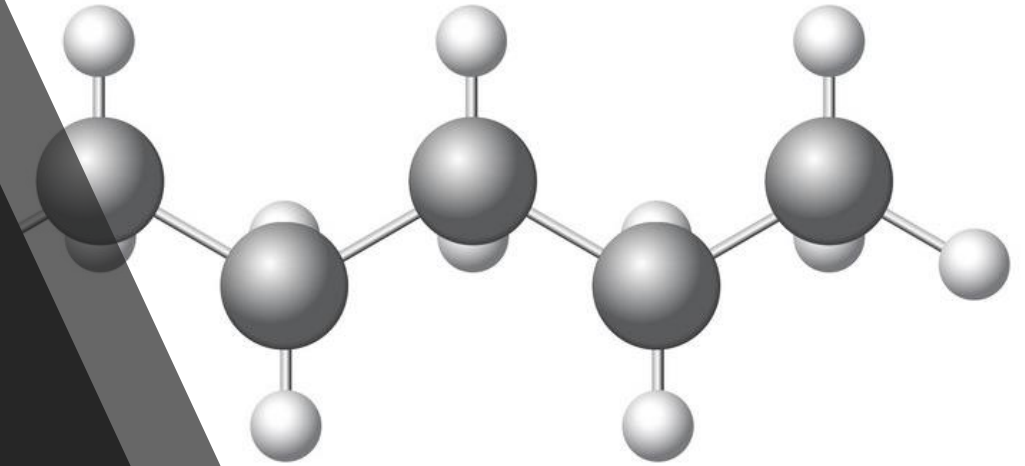
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Sources of Ignition

- Electrical installations must be **intrinsically safe** (i.e. give off very low V and Amps to ensure any electrical energy given off will not cause ignition)
- Protection against **static electricity**
- Protection against **lightning**.
- The 2 can be prevented by properly **grounding equipment**.
- No **smoking** permitted (matches or other lighting devices).
- **Powered vehicles** will not be permitted in the restricted/ controlled area unless cleared by the Responsible Person.
- Portable **gas detectors**
- **Approved gas detection system** for leaked vapour detection, with audible and visual alarms.

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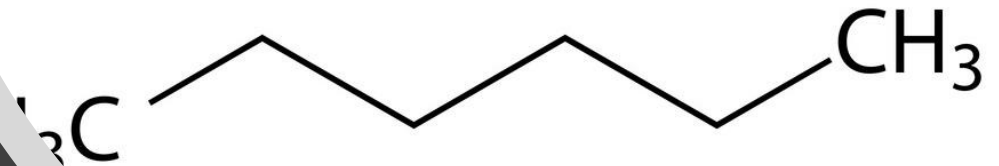
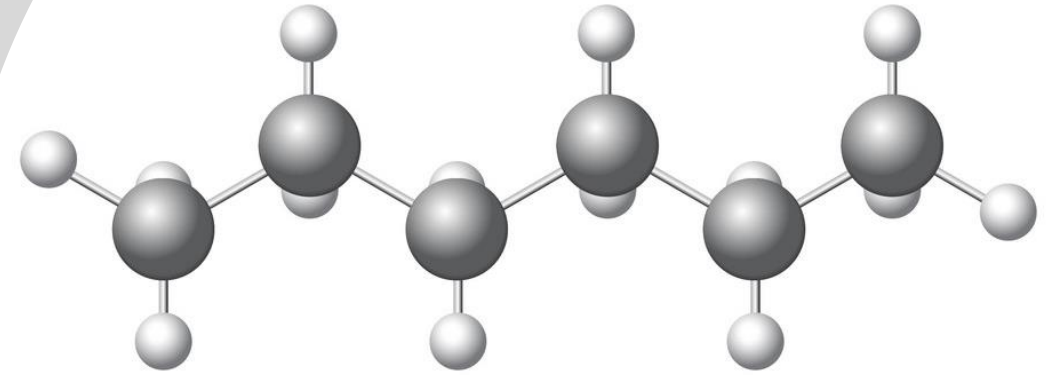
Lightning Protection and Static Electricity

- All equipment to be electrically grounded.

Static:

- All **tanks, vessels, motors, pipes, conduits, grating,** and building frames in the process shall be electrically bonded together.
- **Building frames and metal structures** must be grounded and tested periodically.
- **Bond hoses to supply lines,** or to tanks/ vessels where discharge takes place.

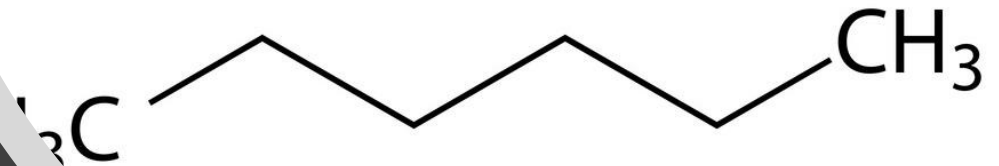
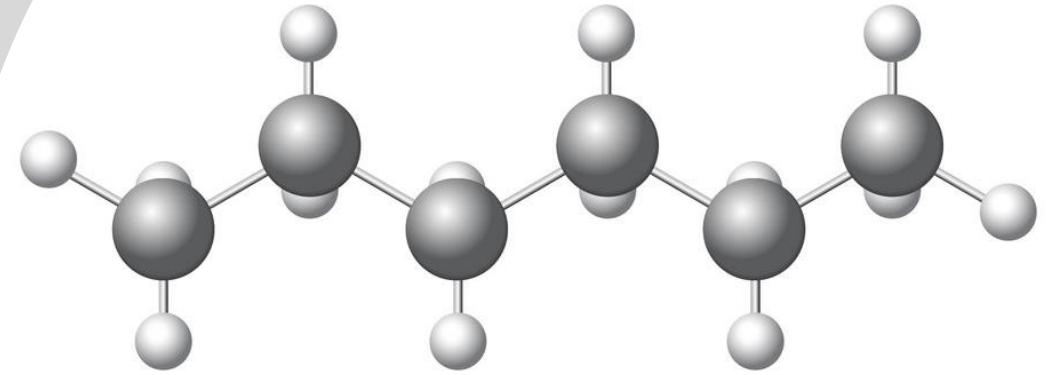
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Housekeeping

- **Flammable liquids** not to be stored in the extraction processing area (except in small quantities stored in approved safety cans). Flammable liquids must be stored in purpose designed flammable storage rooms, i.e. applicable to flammable liquids not used in the solvent extraction process.
- **Waste materials** (e.g. oily rags, etc.) must be stowed in approved waste containers, the waste shall be removed daily (at least once).
- **Dust** originating from material shall be minimal, else intrinsically safe extraction equipment must be installed.
- All **combustible materials** must be removed from the Restricted and Controlled areas (inclusive of **grass, weeds**, trash, etc.)
- All **chemical spills (oil / solvent)** or **solvent-bearing materials** shall be cleaned and removed immediately.
- **Discharge and removal of solvent-bearing** materials is a SEVERE hazard (and deviation from the norm), thus **operating procedures** must be established to minimise such occurrences.

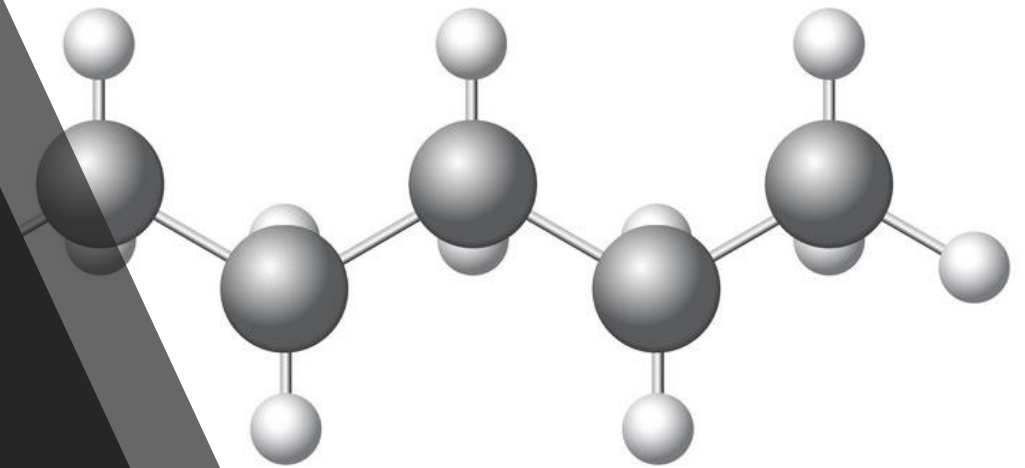
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Fire Protection

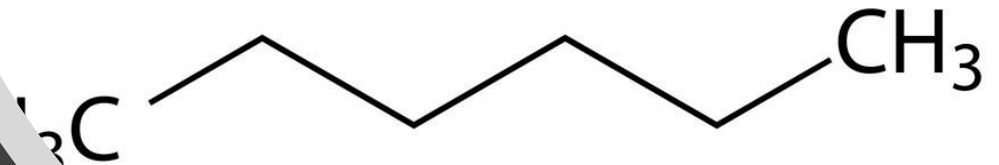
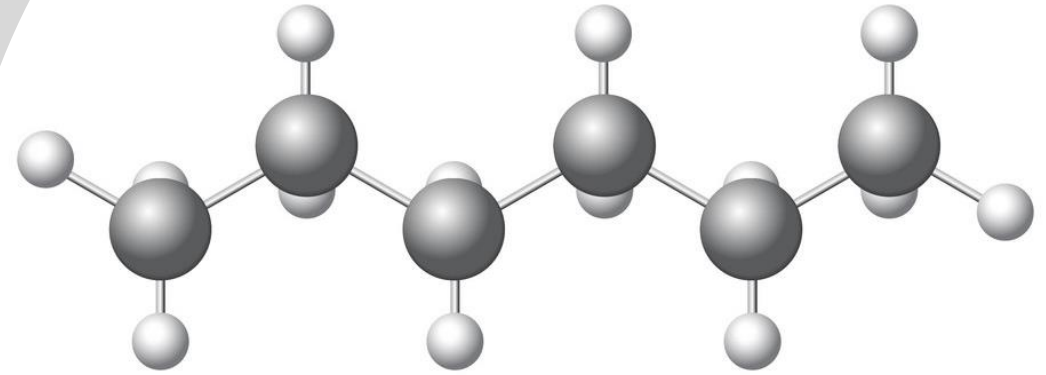
- **Water spray, deluge or foam-water system** (or even a combination of these systems) to be provided to protect the extraction process equipment and structure.
- All suppression systems must be approved.
- **Yard hydrants** shall be provided according to accepted good practice.
- Approved **portable fire extinguishers** shall be provided (correct size and medium).
- **Explosion prevention** (where necessary) is to be installed according to NFPA 69.
- Fire alarm signals to be sent to a 24/7 supervised point (either on or off the premises).
- **Training personnel** in the use of firefighting equipment.
- Ideally, an **established, and fully trained fire brigade**.



Start-up/ Shut down procedures

- The site to have their unique start-up and shut-down procedures.
- Need evidence of **operating procedures**.

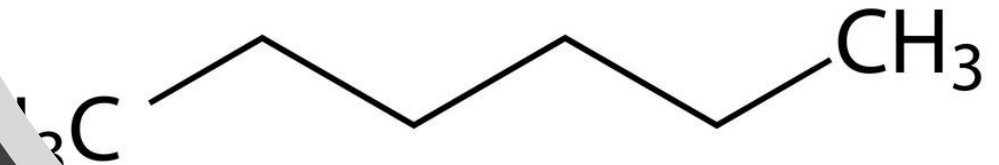
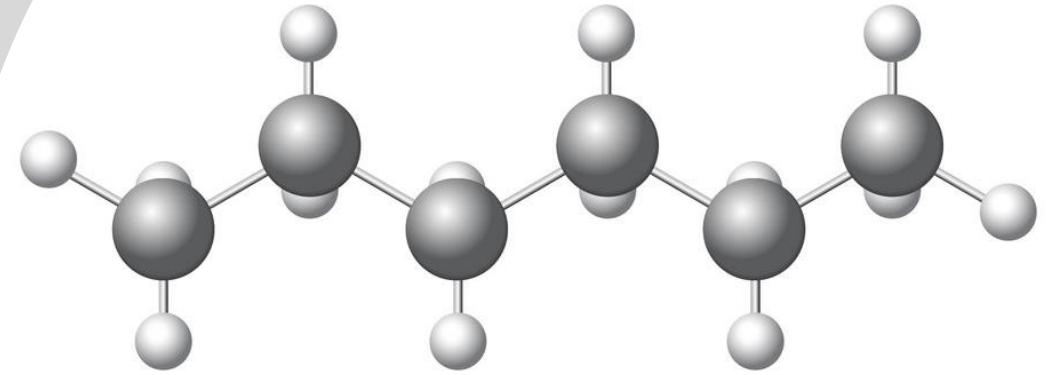
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Repairs when in operation or shutdown but not purged

- **Power tools** that may act as a source of ignition are **prohibited** in the restricted and controlled areas.
- **Repairs to live electrical wiring** is prohibited (if absolutely essential, then power must be disconnected in entirety).
- **Hot works** is prohibited

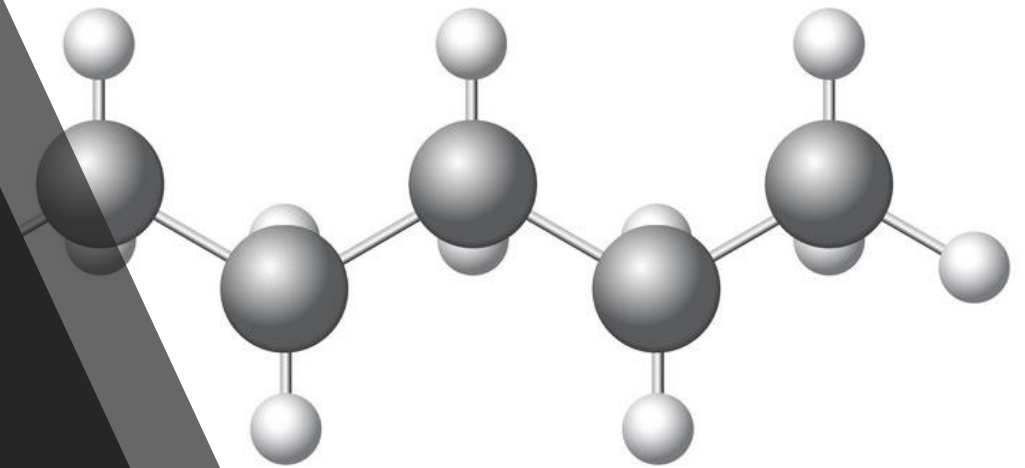
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Building design (liberation of combustible dust)

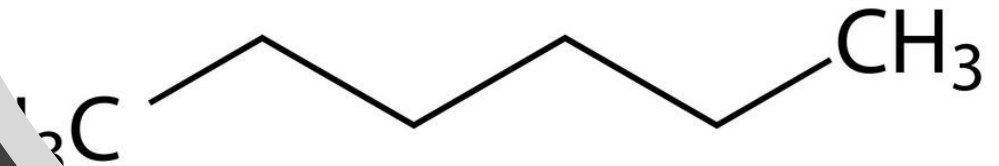
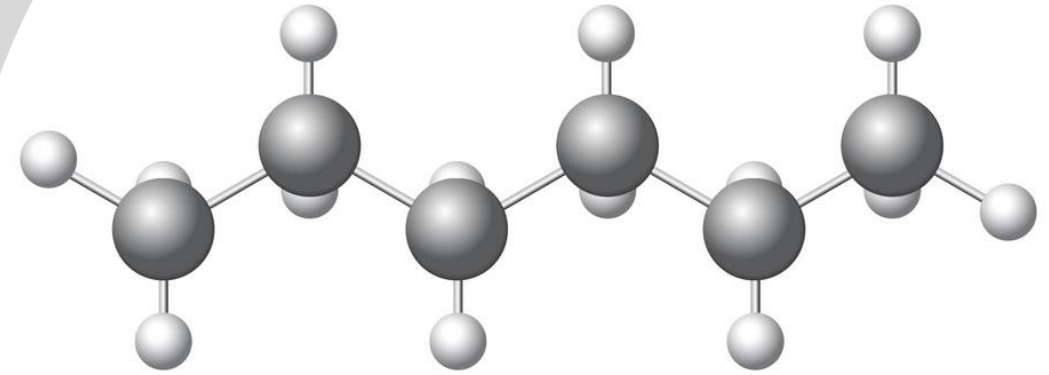
- Building = **fire resistive and non-combustible**
- Provision for **explosion relief**
- Roof and exterior wall:
 - **Open air construction** with minimum area enclosed.
 - **Non-combustible walls and roof**, lightly attached to steel frame
 - Non-combustible **wall panels and roof hatches**
 - Top **hinged windows with explosion relief hatches**.
- Static protection to be provided in areas where combustible dust presents a hazard.



Dust Removal:

- Dust collecting systems may be provided where needed
- **Dust collector** is permitted inside a building, but as close as practical to an exterior wall.
 - Vented to the exterior via a straight duct (Length max. = 6m)
 - Explosion pressures must not rupture ductwork or collector.
 - (NFPA 69).

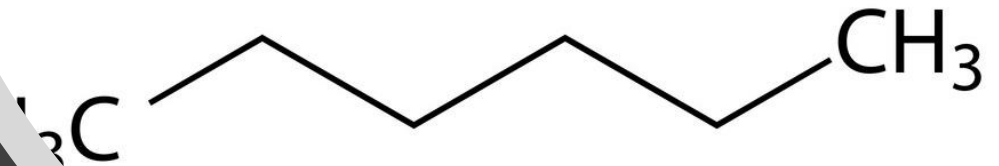
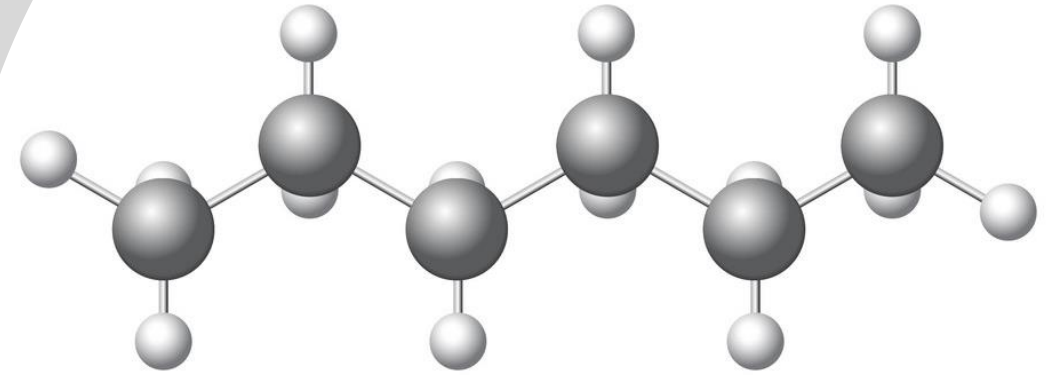
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Hot Work – Hot Work Permit!

- Extraction equipment has been shut down, and cooled to prevent the release of vapour
- The equipment being repaired has been isolated from any conveyor or duct; thus, isolating the transfer of fire should one erupt.
- Power tools/ grinders may be used, but no dust, combustible materials or ignitable vapours are to be in the area.
 - Process equipment must be blanketed from the hot work area by a temporary barrier.

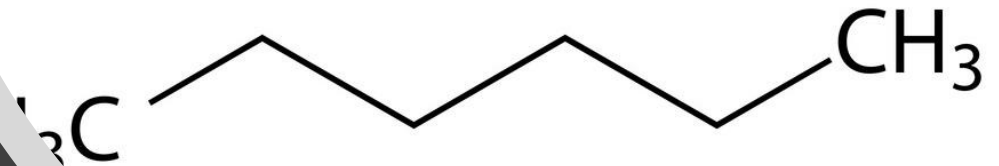
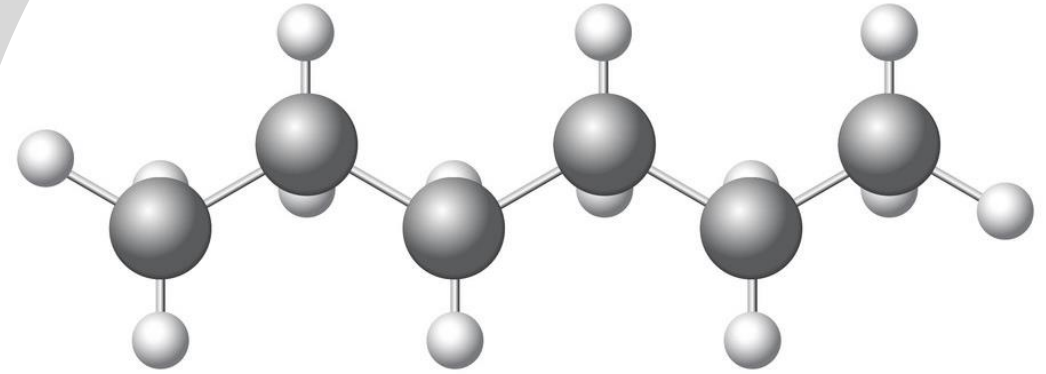
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Ventilation

- Enclosed plants
- 6 changes of air per hour
- Exhaust fans taking suction at floor level
 - Density of gas

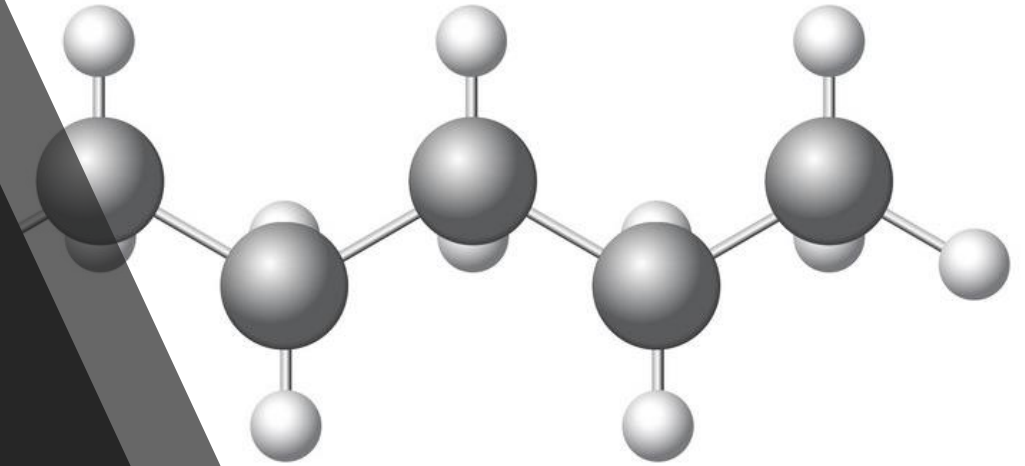
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Best ways to upskill

- Educate yourself with local SA or overseas qualifications
- Attend fire prevention training
- Familiarise oneself with competent ECSA registered fire practitioners in SA
- Create a database of trusted and competent professionals with whom to lean on for insurance/ fire information.
- ESG!

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Thank you!

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