

INTRINSICALLY SAFE PERSONAL TASK LIGHTING

Brief Overview of Task Lighting Safety in Hazardous Environments

Fire and Explosion Risk

Fire and explosion hazards can occur in industrial and production operations. They are prime environments for the potential build-up of combustible gases, liquids, oxygen, and ignition sources. Using fixed and portable task lighting there have the potential to endanger personnel and property if not approved for intrinsically safe operation.

Intrinsic Safety

A device that is intrinsically safe means that it is safe by its own nature without any assistance. To ensure the device remains safe it must be used properly and not tampered with so the intrinsically safe capability remains intact. Specifications and classifications for intrinsically safe apparatus are defined and tested by Underwriters Laboratories.

A more technical definition of intrinsically safe is a protection technique based upon the restriction of electrical energy to a level below that causes ignition by sparking or heating effects.



Example

A switch on its own is intrinsically safe. It can be clicked on and off in a potentially explosive environment as long as it's not connected to any

electrical circuit. However, if it is connected to an electrical circuit carrying 10 Amps of current at 100 volts DC, the intrinsic safety of the switch is eliminated.

Intrinsic Safety in Personal Task Lighting

Task lighting for a professional working in a hazardous environment takes on a personal meaning since the user's life depends on that light operating safely. There certainly is a back-of-the-mind safety concern of the petroleum plant and oil rig technicians that must work in hazardous, explosion-prone environments. Or the industrial technician working long hours in confined and dark places to bring a plant back to full operational capability.



There are numerous demands placed on the person in that environment, however BAYCO believes the safety of the task light should not be one of them.

Testing for Intrinsic Safety BAYCO relies on the rigorous specifications and testing capabilities of Underwriters Laboratories Inc.

UL is an independent, not-for-profit product safety testing and certification organization. UL has been testing products for public safety for more than a century, and is involved in the global conformity assessment of electrical equipment for use in, or relating to, hazardous locations e.g. explosive atmospheres, for more than 85 years. UL is a recognized and respected leader around the world for

the testing and certification of Hazardous Location equipment.

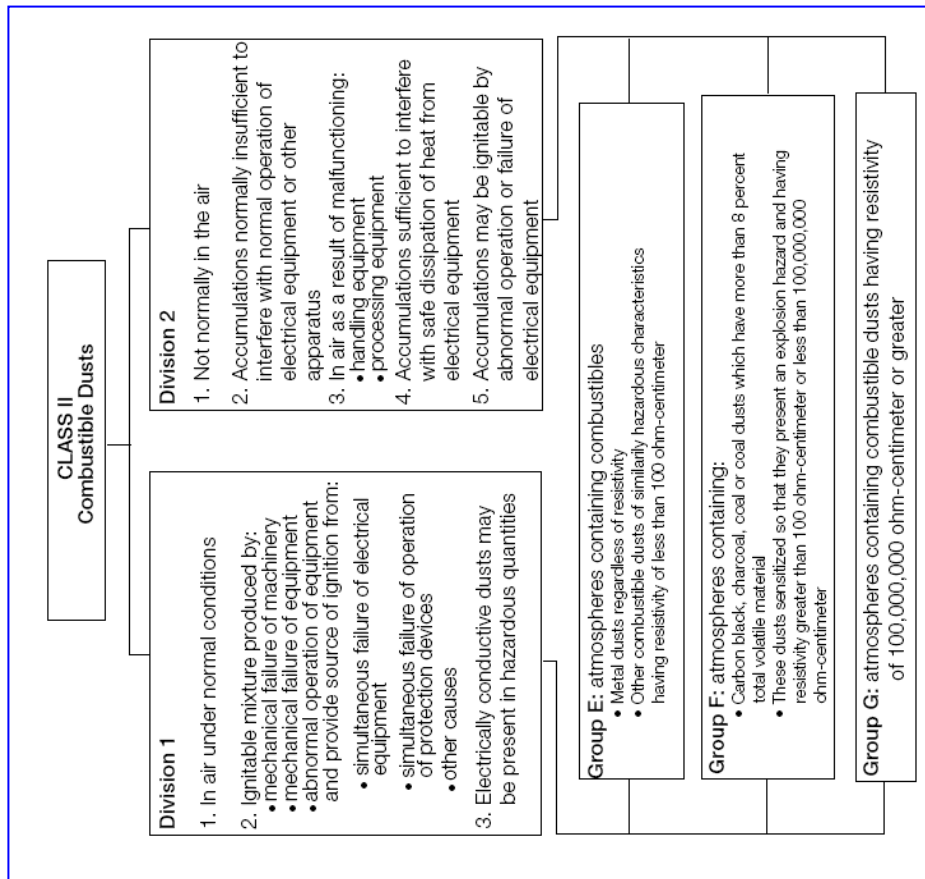
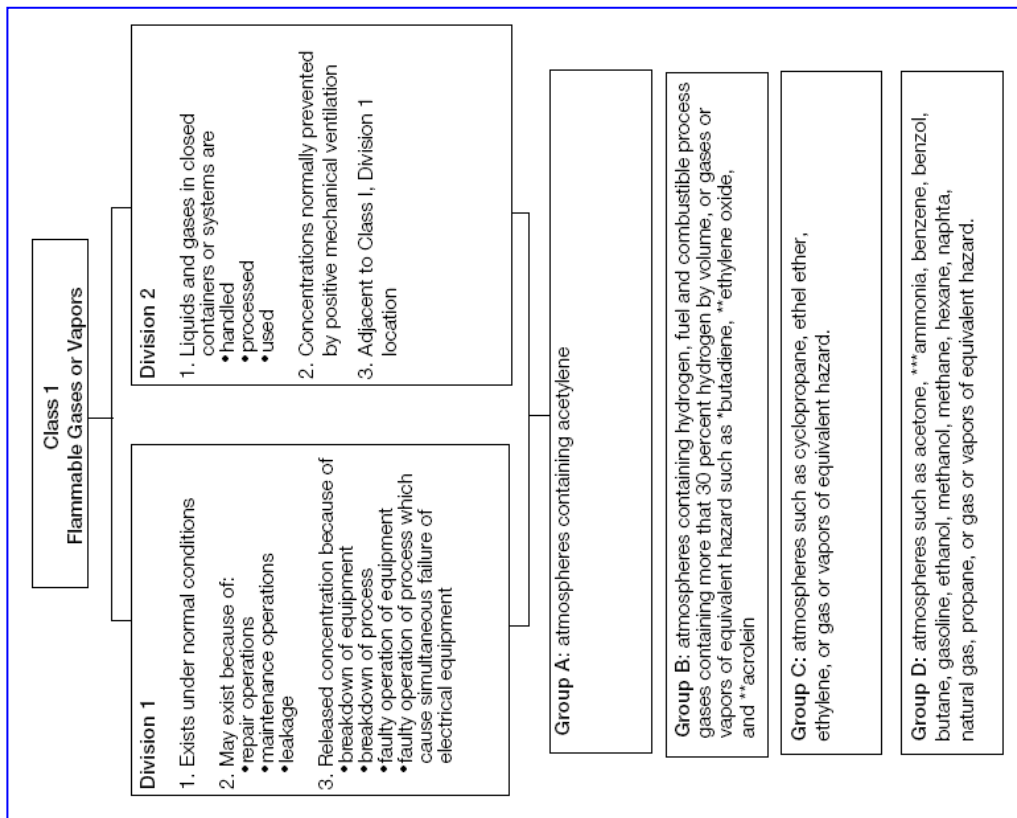


Intrinsically Safe is Safer than Non-Incendive

Some handheld lighting devices will claim they are non-incendive. Is that safe enough? The difference between non-incendive and intrinsically safe is that non-incendive task lights are evaluated for ignition capability under *normal* operating conditions, while intrinsically safe lights are evaluated under fault conditions. In the testing of BAYCO intrinsically safe task lights, faults are introduced to deliberately increase the energy available to cause ignition. Under these fault conditions, the light must remain incapable of causing ignition in a specific gas environment either by spark or overheating; an obviously safer solution.

Preserving Intrinsic Safety All BAYCO intrinsically safe personal task lighting products follow appropriate UL requirements and are designed and tested with strict control of the energy in the battery pack circuits so that they cannot produce incendiary sparks or have hot surfaces that can ignite ambient gases. At BAYCO we believe that *Life Depends on Light*.

For the UL Hazardous Locations Services Brochure visit:
www.ul.com/appliances/resources/HazLoc_brochure.pdf



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