

SAFE WORK PRACTICES

NON SPARKING TOOLS

**This information does not take precedence over OH&S. All employees should be familiar with the Saskatchewan Employment Act and the OH&S Regulations.*

General: "Non sparking", "spark resistant" or "spark proof" tools are names given to tools made of light metals such as brass, bronze, stainless steel, aluminum, beryllium, titanium, magnesium and copper. So called "non sparking" tools **are** capable of producing a spark. All tools can produce sparks. Non sparking tools may give a false sense of security, based upon their names.

Non sparking tools cannot be relied upon when working in potentially flammable atmospheres in the same way one relies on certified explosion-proof motors or electrical equipment.

(Refer to "General Safe Hand Tool Operation" for general safeguards.)

Hazards: Both "sparking" and "non sparking" materials can cause an ignition. Two types of hazards are associated with tools manufacture of either material:

1. Ignition by friction, with impact on each other or on other materials such as steel or concrete, in which an "ordinary" (mechanical) spark is generated. All tools can ignite flammable mixtures by friction or impact.
2. Ignition by chemically generated spark, caused by impact between certain metals and some oxygen containing substances (such as rust which is iron oxide).

Non sparking tools which contact oxygen bearing materials, such as rust, can produce a spark with temperatures higher than 2000° celsius. This type of spark lasts longer than an "ordinary" spark.

Tool Usage: Non sparking tools are not safer than steel tools. Steel tools, if handled carefully, are no more dangerous in hazardous environments than non sparking ones.

Non sparking tools are not certified for work in hazardous environments. Electric motors, on the other hand, can be certified as "explosion-proof" for use in hazardous work locations. This certification gives almost 100% assurance that use of this equipment **will not ignite** explosive atmospheres. In a hazardous environment these assurances cannot be given with the use of non sparking tools.

Procedures – The Best Safeguard: Follow safe work procedures. Always evaluate a job to be done in a hazardous environment (even the simple ones!). Keep in mind that there are no **truly** non sparking tools.

In any work where flames are used, **or sparks are produced**, make sure that an explosive atmosphere **does not** develop. Isolation, ventilation and purging are methods of insuring a safe working atmosphere. Use explosimeters in the workplace to protect those working in hazardous environments.