

# *creating a safer process*

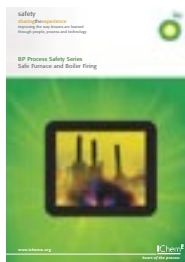
**BP Process  
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"Sharing  
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Written by the BP Process Safety Group and endorsed by IChemE, this series of titles demonstrates both organizations, commitment to process safety and dissemination of best practice.

These easy-to-use booklets are intended to help the reader better understand safe operating practices and procedures within processing plants. This series of booklets have been developed as a safety supplements to operator training courses, operating manuals and procedures. The ideal reference tool to have within the workplace, giving employees the information in a non-technical form, enabling them to refer to the text quickly and to spot and rectify potential hazards.



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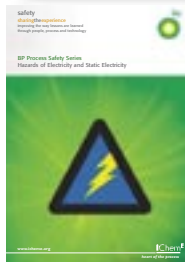
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Because history shows that most serious process unit fires and explosions occur during start-up and shutdown, procedures must be developed which recognize and avoid hazards. This booklet presents many of the tried and proven operating practices along with incident examples and also covers in detail the unexpected outages that may occur.



## Hazards of Electricity and Static Electricity

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In process plants and refineries, electric sparks and electric shock are the two main hazards of electricity. Sparks and arcs may ignite mixtures of air and flammable gases or vapours, resulting in fires and explosions. Electric shocks may cause fatalities or serious injury. This booklet describes these hazards and suggests preventive measures in a simple and user-friendly manner.



## Hazards of Trapped Pressure and Vacuum

ISBN – 0 85295 475 1

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92 pages

On process plants we see gauges, which remind us that the equipment is being subjected to various degrees of pressure and vacuum. We must, therefore, understand what the basic phenomenon is, how it must be considered during operations and maintenance of plant and equipment, in order to prevent danger of trapped pressure or unexpected vacuum, which could lead to an incident. This booklet makes you and your organization aware of the possibilities in order to adopt safe design and practices.



## Hazards of Water

ISBN – 0 85295 466 2

Price – £15.00

Published – Nov 2004

234 x 156 mm softback

64 pages

We could not run process plants and refineries without water, but in the wrong place in a process system it can be hazardous. We regularly see incidents occurring, such as operators being burned by high temperature water, fires being started from static flows and foamovers in tankage due to the presence of water. This booklet looks at the uses of water within the chemical and process industries and how to avoid the potential hazards.



## Hazards of Steam

ISBN – 0 85295 468 9

Price – £15.00

Published – Nov 2004

234 x 156 mm softback

39 pages

There are many uses of steam within the chemical and process industries. Despite extensive experience in handling steam, there still are incidents occurring with operators being burned by steam, equipment being damaged by condensing steam and incidents from water hammer, etc. Like many other things, steam is not a hazard if handled correctly. This booklet looks at the problems which can arise involving the use of steam, and how to avoid these incidents occurring.



## Hazards of Nitrogen and Catalyst Handling

ISBN – 0 85295 469 7

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53 pages

Nitrogen is often used in the chemical and process industries as a safety tool, in particular with catalyst handling, reducing oxygen content of the air and thus reducing risk of catalysts igniting. Though the air around us contains 79% nitrogen, it has proved that it can be as deadly as any other gas found within process plants. This booklet looks at the properties and uses of nitrogen and catalysts, the hazards that they present and how to avoid incidents occurring.



## Hazards of Air and Oxygen

ISBN – 0 85295 467 0

Price – £15.00

Published – Nov 2004

234 x 156 mm softback

59 pages

Air and oxygen are products that seem safe to most of us, but in the chemical or process industries they can prove deadly if used or introduced at the wrong time or place. This booklet discusses the hazards involved in such use, and the controls which should be in place to avoid incidents occurring. It will help you and your organization to understand the basic principles for the safe use of air and oxygen within your plant.



## Other titles in the series coming soon –

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ISBN 0 85295 478 6 (May 2005)

**Confined Space Entry**  
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ISBN 0 85295 482 4 (June 2005)

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