

Index

A

ABMA tester, 10, 12, 17, 22, 32
 Absorption control, 162, 165
 Acceptability index, 66
 Acceptance test criteria, 66, 92, 100, 104
 Activation energy, 160, 164
 Adiabatic compression, 103, 114, 184
 Aerosol, 115
 AIT (*see* ignition temperature)
 Application severities, 14
 Arc ignition, 141
 Arrhenius Law, 153, 161, 164
 ASTM G 63, 89, 188

B

Ball, W. L., 5
 Batch tests, 36
 Bryan, Coleman, 6
 Burn ratio, 136, 172
 Rankings, 146

C

Catalytic effects, 49, 54
 CGA, 4, 123, 171, 181, 184, 185, 187–190
 Cleanliness
 Specifications, 100, 109
 Verifications, 124
 Combustion models, 77
 Combustion ranking, 164
 Compatibility with oxygen
 Definition, 5, 168
 Component qualification, 101, 105
 Compressed Gas Association (*see* CGA)

Compressor design rules, 151
 Configuration testing, 42, 97, 100
 Contamination hazard defined, 108
 Critical energy input, 132
 Critical temperature, 133

D

Detonation, 115, 116
 Diffusion influence, 78, 153, 162, 165
 Diffusivity, 155
 Diluent effects, 41, 49, 59–66, 63

E

Equilibrium burning, 65
 Erratic extinguishment, 66

F

Fillers, 40, 64
 Fire points, 63
 Fire triangle, 182, 185, 187
 Flammability factors, 183, 184
 Flash points, 63
 Fresh metal exposure, 142–145, 161
 Fretting, 103
 Friction coefficient, 157
 Friction ignition, 152, 184

G

G 63 (*see* ASTM G 63)
 Galling, 103
 GOX mechanical impact tests, 40

H

Heat balance, 79, 132
 Heat dissipation, 155

Heat of combustion, 184, 190
 Computed values, 87
 Corrections, 85
 Versus oxygen index, 59, 60
 Heat of oxide formation, 171, 172

I

IAA, 4
 Ignition models, 131, 152
 Ignition pills, 173, 177
 Ignition probability, 91, 188
 Ignition ranking, 164
 Ignition temperatures, 153, 190
 Apparatus, 45
 Effect of pressure, 49
 Versus oxygen index, 60
 Induction time, 117
 Inert fillers, 40, 64
 International Acetylene Assoc., 4
 Inventory, 184
 Ion diffusion, 153

J

Jar tests, 35
 Johnson, C. E., 5

K

Key, C. F., 5
 Kindling chain, 183, 184

L

Lapin, Dr. Abraham, 4, 67
 Laplace operator, 155
 Life cycle tests, 102

M

Mabbs, John K., 4
 Material Review Board, 14
 Material Selection, 14, 16, 59, 90
 McKinley, Dr. Clyde, 4
 Mechanical impact tests
 Calibration, 31, 32

Energy delivery, 17
 GOX, 40
 History, 10
 LOX, 36
 Rocketdyne (SSFL), 30
 Round robin tests, 23–29
 Variability, 17, 29

Meincke, E., 4
 Metal fracture, 141
 Metal selection criteria, 127
 Metals flammability tests, 173
 Migration, 111, 118
 By centripetal acceleration, 119
 By cold chipping, 121
 By condensation, 121
 By gravity, 119
 By surface flow, 120
 Grit blast inhibition, 119, 120, 123
 Thermal induced, 121
 Mists, 115
 Mixtures, 41
 Models of flammability, 77, 131, 152
 Multiple testing, 64, 90

N

National Fire Protection Assoc., 8
 Neary, R. M., 5
 NFPA, 8
 NHB 8060.1, 13, 14, 99

O

Oil film flammability, 112
 Substrate effects, 115
 Oil film hazard, 110
 Oil migration hazard, 111, 118
 Ordin, P., 5
 OSHA, 8
 Oxidation energy, 158
 Oxide formation, 171
 Oxygen absorption, 153
 Oxygen compatibility definition, 5, 168
 Oxygen diffusion, 78

- Oxygen index
 Combustion model, 77
 Data averaging, 76
 Ignition site effect, 62
 Pressure effect, 63, 76
 Shortcomings, 64
 Temperature effect, 61
 Use, 190
 Versus heat of combustion, 60
 Versus ignition temperature, 60
 Versus Reynolds number, 76
 Oxygen transport, 153
- P**
- Particle impact, 101, 184, 186, 187, 189
 Particulate criteria, 100
 Penetration function, 20–28
 Pressure effects, 49, 76–82, 184
 Pressure oscillation, 103
 Promoted ignition, 88, 173, 175, 187
 Propagation rates, 77
 Propagation/extinction, 59, 144
- Q**
- Qualification tests, 105
- R**
- Rankings
 By burn ratios, 146
 By combustion, 146, 164, 165
 By ignition, 164, 165
 Reaction effect, 188
 Resonance, 184
 Risk assessment, 151
- S**
- Screening tests, 41
 Severity levels, 91
 Slag effects, 180
 Stefan's Law, 80
 Stress tests, 102
- T**
- Temperature effects, 61, 184
 Thermal diffusivity, 155
 Thermite reaction, 173
 Thresholds for oil films, 110
 Transition temperature, 133
 Tribiology, 154
 Two-color pyrometer, 154
- V**
- Valve chatter, 103
 Valve design, 185–190
 Variability, 17, 29, 59
 Velocity effects, 184
 Volland, E., 5, 8
- W**
- Wire drawing, 188