

DIN EN ISO 17349:2016-07 (E)

Petroleum and natural gas industries - Offshore platforms handling streams with high content of CO₂ at high pressures (ISO 17349:2016); English version EN ISO 17349:2016

Contents

	Page
Foreword	v
Introduction	vi
1 Scope	1
2 Normative references	1
3 Terms and definitions	2
4 Abbreviated terms	4
5 Overview of CO₂-rich streams behaviour	5
5.1 General	5
5.2 Hydrate formation	5
5.3 CO ₂ solid formation	6
5.4 Flow metering	6
6 Blow down, depressuring and relieving of plant and equipment	6
7 Flare and vent system configuration	7
7.1 General	7
7.2 System selection	7
7.3 System configuration	8
7.3.1 Flare	8
7.3.2 Vent	9
8 Materials	9
8.1 Corrosion	9
8.1.1 General	9
8.1.2 Internal corrosion control by dehydration	9
8.1.3 CRAs	10
8.1.4 Internal corrosion protecting chemicals	10
8.1.5 Internal organic coatings	10
8.2 Brittle fracture	10
8.3 Ductile fracture	10
8.4 Lubricants	10
8.5 Non-metallic seals for CO ₂ service	11
9 Safety	11
9.1 General	11
9.2 Impacts of the loss of containment of CO ₂ -rich streams	11
9.2.1 General	11
9.2.2 Respiratory physiological parameters	12
9.2.3 Low temperature impact	12
9.2.4 CO ₂ -rich stream BLEVE	12
9.3 Hazard identification and risk assessment and management	12
9.3.1 General	12
9.3.2 Hazard identification	13
9.3.3 Risk assessment and management	13
9.4 Consequence analysis	14
9.4.1 General	14
9.4.2 CO ₂ dispersion	14
9.4.3 Effects of cold CO ₂ jet	14
9.5 CO ₂ detection	14
9.6 Strategies	15

Annex A (informative) Evaluation of EOS for CO₂-rich streams	16
Annex B (informative) Hydrate formation	22
Annex C (informative) Water content specification.....	26
Annex D (informative) Depressuring of CO₂-rich streams	33
Annex E (informative) Configuration of flare and vent systems	37
Annex F (informative) Boiling liquid expanding vapour explosion (BLEVE)	40
Annex G (informative) Methodology for evaluation of running ductile fracture	42
Annex H (informative) Non-metallic materials for use in CO₂ service.....	44
Annex I (informative) CO₂ toxicology information.....	45
Bibliography.....	48