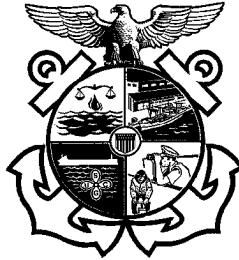


# United States Coast Guard



## **FOREIGN CHEMICAL TANKER EXAMINER Job Aid**

<b>Name of Vessel</b>		<b>Flag</b> <input type="checkbox"/> No Change	
<b>IMO Number</b>		<b>Case Number</b>	
<b>Date Completed</b>	<b>Priority</b>	<b>Points</b>	
<b>Location</b>			
<b>Vessel Built in Compliance with SOLAS: 60 74 74/78 NA</b>			
<b>Port State Control Officer &amp; Examiners</b>			
1. _____	_____	5. _____	_____
2. _____	_____	6. _____	_____
3. _____	_____	7. _____	_____
4. _____	_____	8. _____	_____

## **Use of Foreign Chemical Tanker Examiner Job Aid:**

This examination book is intended to be used as a job aid by Coast Guard port state control officers during boardings of foreign-flagged chemical tank vessels. Each book contains an extensive list of possible examination items. It is not, however, the Coast Guard's intention to "inspect" all items listed. As a port state responsibility, port state control officers must verify that the vessels and their crews are in substantial compliance with international conventions and applicable US laws. The depth and scope of the examination must be determined by the port state control officers based on their observations.

This PQS workbook cites SOLAS regulations from the 2020 Consolidated Edition (74 SOLAS (20). In some cases, the regulations in 74 SOLAS (20) may not apply due to the keel laid date of the vessel. PSC personnel must pay close attention to the applicability dates of the SOLAS chapters and regulations when conducting PSC exams.

This document does not establish or change Federal laws or regulations. References given are only general guides. Refer to IMO publications, CFR's, the Port State Control Job Aid, Foreign Chemical Tanker Training Aid, NVIC's and any locally produced cite guides for specific regulatory references.

***NOTE:*** *Guidance on how to examine foreign chemical tank vessels can be found in MSM Volume II, Section D, Chapter 6: Procedures Applicable to Foreign Tank Vessels.*

## **Guide to Examinations:**

### **Pre-inspection Items**

- Review MISLE records
- Obtain copies of forms to be issued

### **Post-inspection Items**

- Issue letters/certificates to vessel
  - Form A
  - Form B
  - COC
- Complete MISLE entries within 48 hours

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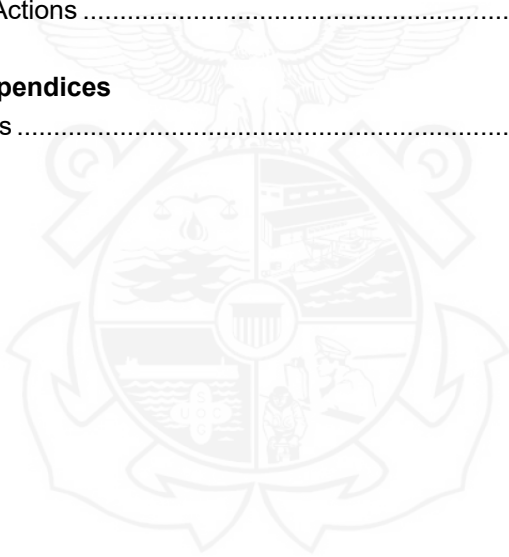
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# Section 1: Inspection Items

## Pre-Examination

- 1. Schedule examination in Maritime Information for Safety and Law Enforcement (MISLE )
  - Review vessel particulars MSM I/12.G.5
  - Verify documents are current in MISLE and there are no overdue examinations MSM I/12.G.5
  - Review special notes pertaining to alternative design arrangements MSM I/12.G.5
  - Verify status of user fees 46 CFR 2.10-125
  - Determine if cargo operations are permitted prior to COC exam MS-73/D.6.C
  - Prepare Certificate of Compliance MS-73/D.6.C.1.e(2)  
46 USC 3711
  
- 2. Conduct meeting with vessel's representative to discuss scope of the examination
  - Coordinate testing procedures MS-73/D.6.C.4  
MS-73/D.6.C.6.f(1)(e)

## Certificates and Documents

- 3. Examine cargo documentation
  - Verify presence of IBC code IBC Code 16.2.1
  - Verify cargoes listed on shipping documents use IBC code names IBC Code 16.2.2
  - Verify content of cargo stowage plan 46 CFR 153.907  
IBC Code 16.2.3.1
  - Verify cargo compatibility utilizing cargo stowage plan 46 CFR 150 Figure 1  
46 CFR 150 Table 1
  - Verify presence of certificate of stabilization or inhibition (when applicable) 46 CFR 153.912  
IBC Code 15.13.3  
IBC Code 16.2.3.2
  - Verify cargoes carried are approved for carriage on the International Certificate of Fitness for the Carriage of Dangerous Chemicals in Bulk (CoF) IBC Code Appendix

- 4. Examine Certificate of Fitness (CoF) for the carriage of dangerous chemicals in bulk
  - Verify presence IBC Code 1.5.4
  - Verify validity IBC Code 1.5.3  
IBC Code 1.5.6
  - Verify form IBC Code 1.5.4.2  
IBC Code Appendix
  
- 5. Examine International Pollution Prevention Certificate for the Carriage of Noxious Liquid Substances (IPPC-NLS)
  - Verify presence 46 CFR 153.9(a)  
MARPOL II/9.1
  - Verify validity MARPOL II/10
  - Verify contents MARPOL II/9.4  
MARPOL II/Appendix III
  
- 6. Examine Tank Vessel Response Plan (TVRP)
  - Verify presence 33 CFR 155.1015  
33 CFR 155.1025
  - Verify validity 33 CFR 155.1065(c)
  - Verify contents 33 CFR 155.1030  
33 CFR 155.1035  
33 CFR 155.1045
  
- 7. Examine Certificate of Protection
  - Verify contents 46 CFR 153.912  
IBC Code 15.13.3
  - Verify systems are suitable for carriage of cargoes IBC Code 15.13.2  
IBC Code 15.13.4  
IBC Code 15.13.7

## Logs and Manuals

- 8. Examine Cargo Record Book
  - Verify presence 46 CFR 153.490(a)(1)  
MARPOL II/15.1  
MARPOL II/15.5
  - Verify validity and contents 46 CFR 153.909  
MARPOL II/15.2 & 15.3  
MARPOL II/15.4
  - Verify presence of completed books 46 CFR 153.909(e)  
MARPOL II/15.5
  - Verify form 46 CFR 153.490(a)(1)  
MARPOL II/Appendix II
  
- 9. Examine Shipboard Marine Pollution Emergency Plan (SMPEP)
  - Verify presence MARPOL II/17.1  
MARPOL II/17.3
  - Verify validity MARPOL II/17.1
  - Verify contents MARPOL II/17.2
  
- 10. Examine Procedures & Arrangements (P&A) Manual
  - Verify presence 46 CFR 153.490(a)(2)  
MARPOL II/14.1  
MS-74/E.1.E.3.b
  - Verify validity MARPOL II/14.1  
MS-74/E.1.E.2.e.2
  - Verify contents 46 CFR 153.490(b)  
MARPOL II/14.2  
MARPOL II/Appendix IV
  
- 11. Examine cargo/ballast operations manuals
  - Verify validity of operations manual 33 CFR 157.208  
33 CFR 157.216  
33 CFR 157.224
  - Verify presence of instruction manual 33 CFR 157.23(a)
  - Verify format and contents of instruction manual 33 CFR 157.23(b)

- 12. Examine inert gas manual(s)
  - Verify presence SOLAS 20 II-2/4.5.5.2  
FSS Code 15.2.2.5  
NVIC 02-88
  - Verify contents SOLAS 20 II-2/4.5.5.1.1  
FSS Code 15.2.2.5  
MS-72/C.5.C.11

### **Lifesaving Equipment**

- 13. Examine lifeboats
  - Verify equipped with a self-contained air support system SOLAS 20 III/31.1.6  
LSA Code 4.8
  - Verify equipped with fire protection systems SOLAS 20 III/31.1.7  
LSA Code 4.9
- 14. Examine emergency equipment
  - Verify presence of emergency escape equipment 46 CFR 153.527  
IBC Code 14.3.1
  - Verify presence of stretcher 46 CFR 153.214(a)  
IBC Code 14.3.3
  - Witness operation of decontamination stations 46 CFR 153.216(b) & (c)  
IBC Code 14.3.4
  - Verify presence of protective clothing SOLAS 20 VII/10.1  
IBC Code 14.2.1, .2 & .3

### **Fire Fighting Systems**

- 15. Examine water spray system
  - Verify coverage 46 CFR 153.530(p)  
IBC Code 15.8.29
  - Witness automatic operation 46 CFR 153.530(p)(1)  
MS-75/F.3.F.27
  - Verify system has 02 remote manual actuators 46 CFR 153.530(p)(2)  
IBC Code 15.8.29

- 16. Examine fixed deck foam system
  - Verify presence IBC Code 11.3.1, .3, .9, .10 & .16
  - Verify operation of fire main isolation valves IBC Code 11.3.11  
FSS Code 14.2.3.4
  - Verify foam monitors and applicators are capable of delivering foam IBC Code 11.3.3  
IBC Code 11.3.7, .8 & .10  
FSS Code 14.2.3.2 & .3
  - Witness operational test of foam monitors IBC Code 11.3.3 & .5  
IBC Code 11.3.8 & .12  
FSS Code 14.2.3.2.2
  - Verify location of main operation station IBC Code 11.3.4
  - Verify foam type (polar/non-polar) is compatible with cargoes IBC Code 11.3.2  
MS-73/D.6.B.3

- 17. Examine additional personal fire fighting equipment
  - Verify additional fire fighting outfits SOLAS 20 II-2/10.10.2.3  
IBC Code 14.2
  - Verify additional breathing apparatuses and charges SOLAS 20 II-2/10.10.1 & 2  
SOLAS 20 VII/10.1  
IBC Code 14.2

### **Electrical Systems**

- 18. Examine components installed in designated hazardous locations
  - Identify hazardous location(s) 46 CFR 111.105-1  
46 CFR 153.466  
IBC Code 10
  - Verify fixtures are appropriate SOLAS 20 II-1/45.5.4  
SOLAS 20 II-1/45.11  
IBC Code 10
  - Verify system integrity IBC Code 10  
IBC Code 11.3.15



## Pollution Prevention

- 19. Examine containment on deck
  - Verify adequate containment 33 CFR 155.310(a)  
33 CFR 156.120(n)
  - Verify adequate peripheral cargo deck coamings 33 CFR 155.310(c)(4)  
33 CFR 156.120(n)
  - Verify means of drainage 33 CFR 155.310(a)(2)  
33 CFR 156.120(o)
  - Verify mechanical means of closing drain(s) or scupper(s) 33 CFR 155.310(a)(3)  
33 CFR 156.120(o)

## Topside Equipment

- 20. Examine access to bow and emergency towing arrangements
  - Verify safe access SOLAS 20 II-1/3-3.2  
ICLL 25(4) & 26(2)  
IMO Res MSC.62(67) Rev 1
  - Verify emergency towing arrangements SOLAS 20 II-1/3-4.1  
33 CFR 155.235
  - Verify emergency towing procedures SOLAS 20 II-1/3-4.2  
33 CFR 155.235
  - Verify design is approved by Administration SOLAS 20 II-1/3-4.1.2 & 4.1.3  
33 CFR 155.235

## Cargo Systems

21. Examine cargo tank venting arrangements
- Verify material condition SOLAS 20 II-2/4.5.3  
IBC Code 8.2
  - Verify condition of flame screens and arresters SOLAS 20 II-2/4.5.3.3  
IBC Code 8.3.6 - 8.3.7  
MS-73/D.6.B.4 & MS-75/F.3.F.17
  - Verify operation of permanently attached closures (when applicable) ICLL 20  
IBC Code 8.3.1, .2 & .8
  - Verify height of tank venting system 46 CFR 153.350 - 153.353  
SOLAS 20 II-2/4.5.3.4 & 11.6.2.1  
IBC Code 8.3.4.1 & 8.3.5
  - Verify horizontal distance from air intakes and openings 46 CFR 153.350 - 150.351  
SOLAS 20 II-2/4.5.3.4.1 & 11.6.2.2  
IBC Code 8.3.4.2
  - Verify operation of visual indicators (when applicable) SOLAS 20 II-2/4.5.3.2.2  
SOLAS 20 II-2/11.6.3.3
  - Verify presence of blank flanges (when applicable) SOLAS 20 II-2/4.5.3.5
  - Verify operation of pressure/vacuum valves SOLAS 20 II-2/11.6.1
  - Verify operation of vapor line pressure sensors and alarms SOLAS 20 II-2/11.6.3.2
22. Examine cargo pump room
- Verify operation of ventilation SOLAS 20 II-2/4.5.4.1  
IBC Code 12.1 & .2
  - Verify lighting/ventilation interlock SOLAS 20 II-2/4.5.10.1.2
  - Verify operation of hydrocarbon gas monitoring system SOLAS 20 II-2/4.5.10.1.3
  - Verify operation of bilge monitoring devices SOLAS 20 II-2/4.5.10.1.4
  - Verify electrical equipment 46 CFR 153.466  
SOLAS 20 II-1/45.11  
IBC Code 10.1.5, 11.3.15 & 12.1.8
  - Verify fixed fire extinguishing system SOLAS 20 II-2/10.9.1 & .2  
IBC Code 11.2 & 12

- 23. Examine designated observation area (when applicable)
  - Verify location 33 CFR 157.13(a)
  - Verify means to stop discharge of effluent 33 CFR 157.13(b)(2)
  - Verify communications 33 CFR 157.13)b)(2)
  
- 24. Examine liquid cargo transfer systems
  - Examine condition of piping and hose(s) 33 CFR 155.800
  - Verify operation of cargo pump remote shutdown devices 33 CFR 156.170(c)(5)  
IBC Code 5.6.1.3
  - Verify pumps, valves and pipelines are marked 33 CFR 155.800  
IBC Code 3.6
  - Verify transfer equipment tests and inspections 33 CFR 156.170(c)  
IBC Code 5.4 & 5.7
  
- 25. Examine Vapor Control System (VCS)
  - Examine drain lines 46 CFR 39.2001(d)
  - Verify electrically bonded 46 CFR39.2001(c)
  - Verify system can be Isolated from Inert Gas System 46 CFR 39.2001(e)
  - Verify presence of isolation valve and indicator 46 CFR 39.2001(g)
  - Verify markings on vapor piping 46 CFR 39.2001(h)
  - Verify presence of flange stud 46 CFR 39.2001(j)
  - Verify closed gauging system (when applicable) 46 CFR 39.2003(a)
  - Examine approval letter (when applicable) 46 CFR 39.1015  
MS-73/D.6.B.2
  
- 26. Examine high/low vapor pressure protection
  - Verify pressure indicator for main vapor collection line 46 CFR 39.20-13(a)  
46 CFR 153.372
  - Verify operation of pressure alarms 46 CFR 39.20-13(b)  
46 CFR 153.438

- 27. Examine tank liquid high level and overflow protection
  - Verify overflow alarms 46 CFR 39.20-7(a), 153.408(a) & 153.409  
SOLAS 20 II-2/11.6.3.1  
IBC Code 15.19
  - Verify high level alarm settings 46 CFR 39.20-7(c)(1)  
46 CFR 153.409(a)
  - Witness operational test of audible and visual alarm indicators 46 CFR 39.20-7(c)(3) & (d)(2)  
46 CFR 153.408(e)  
46 CFR 153.409(b)
  - Verify high level alarm markings 46 CFR 39.20-7(c)(2)  
46 CFR 153.409(d)
  - Verify tank overflow alarm markings 46 CFR 39.20-7(d)(3)  
46 CFR 153.408(d)

- 28. Examine fixed/portable vapor detection instruments
  - Verify operation of flammable vapor detection device SOLAS 20 II-2/4.5.7.1  
IBC Code 13.2
  - Verify operation of toxic vapor detection device IBC Code 13.2
  - Verify operation of oxygen content device SOLAS 20 II-2/4.5.7.2.1  
FSS Code 16.2.2.3.2
  - Verify operation of fixed gas sampling line systems SOLAS 20 II-2/4.5.7.2.2 & .3  
IBC Code 13.2.2  
FSS Code 16.2.2.3.4

□ 29. Examine Inert Gas System (IGS)

- Verify presence 46 CFR 153.500 & 32.53-10  
SOLAS 20 II-2/4.5.5.1  
SOLAS 20 II-2/4.5.5.2
- Determine type installed SOLAS 20 II-2/4.5.5.3.2  
FSS Code 15.2.2.1.4  
NVIC 02-88
- Verify volume of IG being delivered SOLAS 20 II-2/4.5.5.3.1  
FSS Code 15.2.2.1.2.4
- Verify oxygen content of inert gas in IG supply main SOLAS 20 II-2/4.5.5.3.1  
FSS Code 15.2.2.1.2.5  
FSS Code 15.2.2.4.2.2
- Verify oxygen content of inert gas forward of non-return devices FSS Code 15.2.2.1.2.1
- Verify arrangement within gas-safe zone FSS Code 15.2.3.1.3 & .4  
IMO Res A.567(14)
- Verify arrangement of pressure/vacuum breaking device SOLAS 20 II-2/11.6.3.4
- Verify arrangement of water seal on deck 46 CFR 32.53-10(b)(1)  
FSS Code 15.2.2.3.1.2 & .7
- Verify arrangement of non-return valve on deck FSS Code 15.2.2.3.1.3

- 30. Examine operational tests of Inert Gas System (IGS) audible and visual alarms and shutdowns
- Witness operational test for low water pressure or low water flow to flue gas scrubber alarm
    - FSS Code 15.2.3.2.2.3
    - FSS Code 15.2.2.2.2
    - MS-72/C.5.F.3
  - Witness operational test of high water level in flue gas scrubber alarm
    - FSS Code 15.2.3.2.2.4
    - FSS Code 15.2.2.2.2
    - MS-72/C.5.F.3
  - Witness operational high temperature alarm shutdown\*
    - FSS Code 15.2.3.2.2.5
    - FSS Code 15.2.2.2.2
    - FSS Code 15.2.3.2.1
  - Witness operational test of shutdown for failure of IG blowers\*
    - FSS Code 15.2.3.2.2.6
    - FSS Code 15.2.2.2.2
    - MS-72/C.5.F.3
  - Witness operational test of high oxygen content alarm in IGS main
    - FSS Code 15.2.2.4.5.1.1 & .5.2
    - MS-72/C.5.F.3
  - Witness operational test for failure of power to auto controlled system for gas regulating valve and indicating devices alarms
    - FSS Code 15.2.2.4.5.1.2 & .5
    - MS-72/C.5.F.3
  - Witness operational test for low water alarm for water seal
    - 46 CFR 32.53-5
    - FSS Code 15.2.3.2.2.7
    - MS-72/C.5.F.3
  - Witness operational test for low gas pressure in IG main forward of all non-return devices alarm
    - FSS Code 15.2.2.4.5.1.3 & 5.2
    - MS-72/C.5.F.3
  - Witness operational test for high gas pressure in IG main forward of all non-return devices alarm(s)
    - FSS Code 15.2.2.4.5.1.4
    - FSS Code 15.2.2.4.2
    - MS-72/C.5.F.3
  - Verify inert gas generator system alarms
    - FSS Code 15.2.3.2
    - FSS Code 15.2.4.2.2
    - MS-72/C.5.F.3
- 31. Examine oil discharge monitoring and control system (ODME)
- Verify approval
    - 33 CFR 157.12(a) & (b)
    - MARPOL I/31.1
    - MS-74/E.1.D.5
  - Verify operation of recording device
    - 33 CFR 157.12d(a)(4)(viii)(C)
    - MARPOL I/31.2
  - Verify approved operation manual
    - 33 CFR 157.12c(g)
    - MARPOL I/31.4

- 32. Examine cargo temperature control systems
  - Verify means for measuring temperature 46 CFR 153.440  
IBC Code 7.1.5
  - Verify presence of temperature alarm 46 CFR 153.438  
IBC Code 7.1.5.4  
IBC Code 15.20 & 15.21
  - Verify heating coils are blanked (when applicable) IBC Code 16.6.2

- 33. Examine cargo sample stowage
  - Verify stowed in designated space IBC Code 16.5.1
  - Verify arrangement of stowage space IBC Code 16.5.2
  - Verify arrangement of stowed samples IBC Code 16.5.3 & .4

### Follow Up

- 34. Verify International Safety Management (ISM) compliance
  - Verify clear grounds exist to initiate expanded exam Procedures, App 8  
MS-73/D.1.G.2  
PSCE TTP, Ch.13
  - Verify crew familiarity with vessel's Safety Management System (SMS) ISM Code 6
  - Verify company responsibilities and authority are clearly defined ISM Code 3
  - Verify record keeping compliance ISM Code 11
  - Verify maintenance requirements ISM Code 10
  - Verify SMS training requirement ISM Code 6.5
  - Review audit documentation and follow-up actions ISM Code 1.4.6, 9  
PSCE TTP, Ch.13
- 35. Issue or endorse vessel's Certificate of Compliance
  - Issue and/or endorse Certificate of Compliance 46 USC 3711  
46 CFR 2.01-6(a)(4)  
CG-3585
  - Verify COC endorsements are accurate CG-3585
  - Obtain copy of endorsed certificates MSM I/12.E.7  
MS-73/D.6.G.1.h

## Sector 2: Appendices

### Conversions:

<b>Distance and Energy</b>					
Kilowatts (kW)	X	1.341	=	Horsepower (hp)	
Feet (ft)	X	3.281	=	Meters (m)	
Long Ton (LT)	X	.98421	=	Metric Ton (t)	
<b>Liquid</b> ( <i>NOTE: Values are approximate.</i> )					
Liquid	bbl/LT	m <sup>3</sup> /t	bbl/m <sup>3</sup>	bbl/t	
Freshwater	6.40	1.00	6.29	6.29	
Saltwater	6.24	.975	6.13	5.98	
Heavy Oil	6.77	1.06	6.66	7.06	
DFM	6.60	1.19	7.48	8.91	
Lube Oil	7.66	1.20	7.54	9.05	
<b>Weight</b>					
1 Long Ton	= 2240 lbs	1 Metric Ton	= 2204 lbs		
1 Short Ton	= 2000 lbs	1 Cubic Foot	= 7.48 gal		
1 Barrel (oil)	= 5.61 ft = 42 gal = 6.29 m <sup>3</sup>	1 psi	= .06895 Bar = 2.3106 ft of water		
<b>Temperature: Fahrenheit = Celsius</b> ( $^{\circ}\text{F} = 9/5\ ^{\circ}\text{C} + 32$ and $^{\circ}\text{C} = 5/9 (^{\circ}\text{F} - 32)$ )					
0	= -17.8	80	= 26.7	200	= 93.3
32	= 0	90	= 32.2	250	= 121.1
40	= 4.4	100	= 37.8	300	= 148.9
50	= 10.0	110	= 43.3	400	= 204.4
60	= 15.6	120	= 48.9	500	= 260
70	= 21.1	150	= 65.6	1000	= 537.8
<b>Pressure: Bars = Pounds per square inch</b>					
1 Bar	= 14.5 psi	5 Bars	= 72.5 psi	9 Bars	= 130.5 psi
2 bars	= 29.0 psi	6 Bars	= 87.0 psi	10 Bars	= 145.0 psi
3 Bars	= 43.5 psi	7 Bars	= 101.5 psi		
4 Bars	= 58.0 psi	8 Bars	= 116.0 psi		