**MSA Unit 92**

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| Title: |  **Refrigeration for Marine Engineers** |
| QCF Level: | **3** |
| Credit value: | **4** |
| Learning outcomes*The learner will:* | Assessment criteria *The learner can:* |
| 1. Understand the characteristics of a refrigerant
 | * 1. Describe the properties of an ideal refrigerant
	2. Explain why the ideal is not achievable
	3. Describe the environmentally friendly modern alternative to the CFC’s of the past
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| 1. Understand the components and their arrangement in a compression type refrigerant plant
 | * 1. Describe the function of the following components of the refrigeration circuit
* compressor
* Condenser
* Evaporator
* Expansion valve
	1. Explain the condition of the refrigerant at different points around the circuit
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| **Additional information about the unit** |  |
| Unit aim(s) | To provide the knowledge and understanding of engineering thermodynamics applied to the compression refrigeration circuit. |
| Unit expiry date |  |
| Details of the relationship between the unit and relevant national occupational standards (if appropriate) | MNTB NOS (Jan 2006) – C11 Prepare and operate vessel propulsion machinery and ancillary systems. C12 Operate vessel auxiliaries and service machinery C34 Carry out maintenance of vessel mechanical machinery and systems |
| Details of the relationship between the unit and other standards or curricula (if appropriate) | Maritime and Coastguard Agency Marine Guidance Notice regarding Certificates of Competency – Engine Department,  |
| Assessment requirements specified by a sector or regulatory body (if appropriate) | Maritime Skills Alliance Assessment Strategy |
| Endorsement of the unit by a sector or other appropriate body (if required) | MCA…. |
| Location of the unit within the subject/sector classification system | Transportation |
| Name of the organisation submitting the unit | Scottish Qualifications Authority |
| Availability for use |  |
| Availability for delivery |  |
| Guided Learning Hours | 35 |