

## **Abstract**

During the loading of tankers, and during the voyage at sea, volatile organic compounds (VOCs) are released. These are responsible for damage to the health of humans and animals, for other environmental damage and for economic losses caused by – among other factors – loss of cargo.

This thesis first examines, in a study of the existing literature, what VOCs are (chapter 1) and which international and national legislation applies to them (chapters 2 through 4). It then examines their physical (chapter 5) and chemical (chapter 6) properties. Subsequently it looks at the impact of VOCs on the environment and on the health of the crew on board (chapter 7).

This thesis focuses on the existing and future systems and procedures on board gas tankers, chemical tankers and oil tankers that are designed to control the emission of VOCs (chapter 8). On the basis of this analysis it compares these systems and procedures in order to examine which provide the greatest reduction and what their financial impact is (chapter 9).

The conclusion (chapter 10) focuses on the research questions posed in the introduction, with particular emphasis on pointing out the most efficient and effective systems and procedures to control the emission of VOCs.