

Standard Cargo Special Edition: Misdeclared Cargo

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The Standard
for service and security

The Standard



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The shipment of an undisclosed cargo can be a shipowner's worst nightmare and, in some scenarios, can lead to a major casualty, putting the safety of the ship's crew, hull, cargo and the environment at risk.

The misdeclaration of cargo is not a new phenomenon. There were a number of high-profile incidents in the 1990s where calcium hypochlorite was suspected to be the cause, for example, the CMA DJAKARTA in July 1999, ACONCAGUA in December 1998 and RECIFE in September 1991. Whilst the industry was quick to respond to these incidents with legislative changes, and many carriers subsequently refused to carry dangerous goods, recently the Standard Club has been involved in a number of multimillion dollar incidents caused by misdeclared cargo, and specifically involving calcium hypochlorite on container ships.

In this special edition of Standard Cargo we want to draw your attention to several recent incidents involving the misdeclaration of dangerous goods shipped in containers. Adam Jackson of CWA starts off the articles by explaining the dangers associated with calcium hypochlorite. We will then explain a carrier-led initiative CINS, endorsed by the Standard Club that is looking to resolve container incidents. Enam Hussain and Annie O'Sullivan will discuss two Standard Club case studies and James Bean will finish off this special edition by explaining a member's rights of recovery in respect of misdeclared dangerous cargoes.

The Standard Club will continue to investigate misdeclared cargo incidents with its members and we will publish further special bulletins over the next year highlighting best practices for container operators.



Misdeclaration of Dangerous Cargoes – Calcium Hypochlorite



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A series of fires and explosions on container ships at sea has highlighted the dangers surrounding the misdeclaration and incorrect packaging of dangerous cargoes.

- An estimated 10% of container cargoes are believed to be listed in the International Maritime Dangerous Goods (IMDG) Code
- Cargoes such as calcium hypochlorite have been implicated in high-profile fire and explosion incidents, often caused by a misdeclaration on the cargo manifest
- Calcium hypochlorite is not the only cargo that has led to fire and explosion incidents on board container ships when misdeclared or mispackaged

Introduction

Calcium hypochlorite is one of an estimated 10% of container cargoes believed to be listed in the International Maritime Dangerous Goods (IMDG) Code.

A misdeclaration of one of these cargoes on the manifest can lead to mishandling by the crew, who are uninformed of the potentially dangerous goods carried aboard the vessel and therefore do not stow these cargoes in accordance with the IMDG Code. This can put the vessel and crew in danger and has been cited as a cause of some high-profile fire and explosion incidents.

Calcium hypochlorite – the facts

Calcium hypochlorite is commonly used in water treatment as a disinfectant and bleaching agent and is carried as a white or yellowish solid in powder, granule or tablet form. Calcium hypochlorite is known under a large number of different names and can be shipped in a variety of grades represented by separate UN numbers. The IMDG carriage guidelines are broadly similar for all six UN numbers for different calcium hypochlorite grades, with calcium hypochlorite shipped under UN numbers 1748 and 2880 having the highest chlorine strength and being the most liable to thermally degrade.

Calcium hypochlorite is an oxidising substance that undergoes exothermic decomposition (releasing gaseous chlorine, oxygen and heat) when exposed to temperatures between 30°C and 55°C or in the presence of impurities such as powdered metals or certain organic compounds. Oxygen will sustain and exacerbate any fire already caused by the decomposition reaction, and gaseous chlorine is toxic via respiration.



Source: MV Hansa Brandenburg,
Leonhardt & Blumberg

Packaging and stowing of calcium hypochlorite

In incidents when calcium hypochlorite has been suspected as the cause of fires or explosions, such as on board the ZIM HAIFA in June 2007, CMA DJAKARTA in July 1999, ACONCAGUA in December 1998 or RECIFE in September 1991, the containers carrying calcium hypochlorite may not have been stowed in accordance with the IMDG Code.

- The IMDG Code enforces strict quantity limits on both the inner and outer packaging of calcium hypochlorite
- Calcium hypochlorite can be carried in reefer containers, although, it is highly corrosive to the metal framework of the reefer container in the presence of moisture
- In normal carriage conditions, containers carrying calcium hypochlorite should only be stowed on deck, away from sources of heat such as bunker tanks or direct sunlight (this equally applies when the containers are ashore)
- Containers should also be stowed to allow the maximum amount of air circulation facilitating cooling

Concluding comments

Calcium hypochlorite is not the only cargo that has led to fire and explosion incidents on board container ships when misdeclared or mispackaged. At the point of manufacture, a corresponding material safety data sheet (MSDS) should be available for the goods, which will include information about potential hazards, the correct UN number for the goods and the corresponding IMDG classification. In order to combat issues caused by the misdeclaration of cargoes carried on container ships, the IMO made it a requirement for freight forwarders to declare cargoes as per their "proper shipping name" according to the IMDG Code.

Carriers should be vigilant and if the assigned cargo name cannot be found within the IMDG Code or the MSDS does not contain the correct regulatory information, then assistance should be sought. Careful checking of cargo declarations and their corresponding MSDS should assist in curbing further fire and explosion incidents on board container ships, limiting the already excessive number of incidents that have occurred in recent years.



The Cargo Incident Notification System and Organisation



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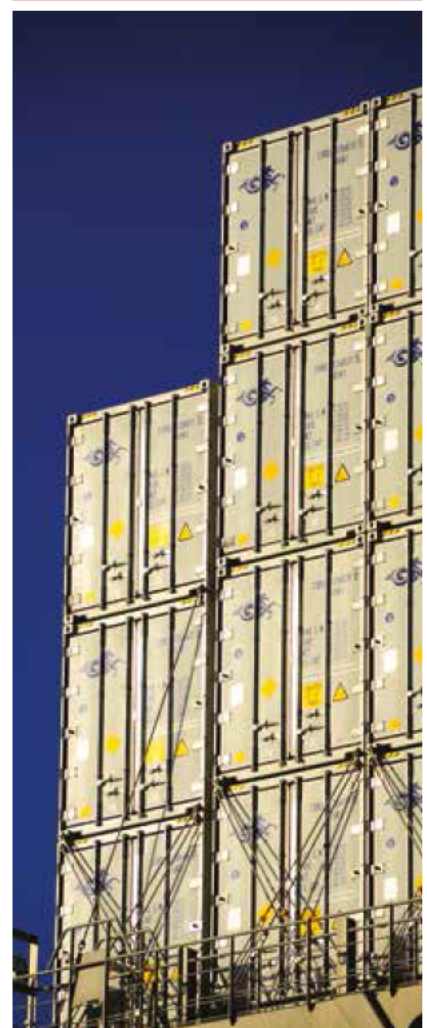
A statistical view on the misdeclaration of cargo

Background

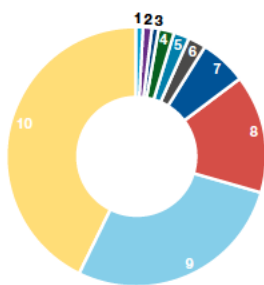
The Cargo Incident Notification System and Organisation (CINS) was created in November 2010 by CMA-CGM, Evergreen, Hapag-Lloyd, Maersk Line and the Mediterranean Shipping Company after multiple serious cargo incidents, endangering people's lives on board and the environment. These triggered the creation of a partnership, enabling the container lines to receive a rapid alert in the case of a worrying incident and allowing them to manage the related risks. The total number of CINS members is 27, representing over 60% of the container shipping industry.

The TT Club and the International Group of P&I Clubs are also involved in the project as advisory members of the CINS Committee. The Container Owners Association is acting as a neutral host for the database.

- Data about cargo that has or could have caused an accident is fed into the CINS database by the members
- Analysis of this data allows greater awareness of areas of concern
- This has shown that one of the main causes of incidents is the misdeclaration of cargo



Analysis by incident type, Jun 2011 – Sept 2013



1 Radiological contamination	1%
2 Tank container structural integrity failure	1%
3 Explosion	1%
4 Smuggling	2%
5 Inspection	2%
6 Flexytank structural integrity failure	2%
7 Fire	6%
8 Other	15%
9 Misdeclared	27%
10 Leakage	43%

Source: Compiled for CINS by TT Club, September 2013

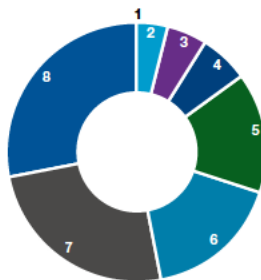
The data

The intention of CINS is to allow the structured capture of key causal information relating to cargo and container incidents. All information about cargo that either has or could have caused an accident is fed into the CINS database via a web application. Analysis of the captured data allows production of statistics and identification of industry trends. This will also provide the shipowners with the evidence to back up their claims if any clear patterns emerge indicating that further action ought to be taken either at industry or regulatory level. The available CINS statistics are already showing trends and guiding shipowners on how to act in order to change the culture, make container shipping safer and ensure cargo arrives at its destination.

The analysis of the CINS data, performed by the TT Club specialists, is revealing in that the number two cause of incidents, after leakages, is the misdeclaration of cargo.

This revelation is resulting in increased numbers of carriers being in favour of measures unprecedented in the shipping industry, such as mandatory auditing and registration of shippers comparable with the International Air Transport Association (IATA).

Analysis by potential cause, Jun 2011 – Sept 2013



1 Overweight	0%
2 Handling error	4%
3 Incorrect stowage	5%
4 Incorrect packing	6%
5 Undetermined	15%
6 Other	17%
7 Poor packing	25%
8 Misdeclared	28%

Other outcomes of the initiative could be changes in legislation or other safe practice recommendations and closer co-operation of the carriers on various levels.

Conclusion

At the heart of this initiative is a quest for quality – both in terms of service delivery, ensuring the cargo arrives in sound condition on time and also improving the way in which all parties in the maritime industry carry out their obligations and communicate. It is hoped that it will enhance the safety of cargo carriage in the supply chain and reduce the risk to people involved, assets and the environment.

The P&I club experience of misdeclared cargoes



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Recently, there have been a number of claims caused by misdeclared cargo and specifically involving calcium hypochlorite. It is important to highlight this trend and the inherent dangers of misdeclared cargo as it can compromise the safety of crews and vessels.



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Calcium hypochlorite

In a recent case involving a misdeclared cargo of calcium hypochlorite, the cargo was wrongly stowed as a direct result of the misdeclaration.

In this particular case, the vessel had properly loaded and stowed various dangerous goods; however, the cargo of calcium hypochlorite was not declared as an International Maritime Dangerous Goods (IMDG) cargo. While awaiting a pilot for entry into the port of Tema, the crew noticed a white cloud followed by a large yellow flame and then a large explosion. The explosion was the result of the decomposition of the 'whitening agent'. The dust cloud was raised from an initial decomposition, which ignited the reefer containers.

Salvors were instructed to assist and to ensure the safety of the crew. A thermal and atmospheric investigation was undertaken and a flooding process was used until the vessel was able to be brought alongside the container discharge facility to offload the dangerous cargo. Thermal imaging was used to locate the source of the heat.

The shipment of an undisclosed cargo can be a shipowner's worst nightmare. In the event that damage is caused, owners will have the right to recover against the shipper and/or the charterer.

Beware other unexpected causes of fires on board

Calcium hypochlorite is only one of many types of cargo that can cause irrevocable damage if undeclared. In a recent case, thin, light, white smoke was discovered in cargo hold no. 4 of a member's container vessel during a journey between Ho Chi Minh City, Vietnam and Hong Kong. The vessel was able to properly load and stow dangerous goods; however, the cargo of tapioca in cargo hold no. 4 had not been declared as a dangerous good. The IMDG Code does not list specific entries for tapioca; however, it is widely known to be susceptible to self-heating.

The temperatures of the smoking containers were recorded at between 32°C and 37.1°C. Other containers registered 28°C. Experts were instructed to attend at Hong Kong. The smoking containers were removed and inspected on the barge alongside. During the unloading of some containers, there was an outbreak of fire at the base of one container. The container was discharged and lowered into the sea to submerge the base and extinguish the fire.



Rights of recovery in respect of misdeclared dangerous cargoes



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Contracts of carriage

It is an established principle that a shipper is under a duty not to load dangerous cargo that might damage a ship without the carrier's knowledge and consent. All contracts of carriage between a shipper and carrier should incorporate this duty either as express or implied terms, and sometimes both. The implied duty under English common law is absolute and requires a shipper not to load dangerous cargo that is likely to damage the ship, or expose the ship or cargo to the risk of detention and delay. In addition, the carrier is empowered at any time to unload, destroy or render a cargo innocuous, as the circumstances may require, without payment of compensation.

Charter parties

The leading textbooks assert unanimously that, in appropriate circumstances, the implied duty also applies to charterers even where they are not the actual shippers of the cargo. A number of charterparty forms contain express clauses dealing with dangerous cargo, the breach of which can give rise to an indemnity to an owner for liabilities arising as a result of shipping dangerous goods. Such liabilities can include the ship's proportion of general average, salvage costs, particular average and damages for loss of use to the ship and her cargo, which has the potential to run into millions.

Notwithstanding that a shipper is under a duty not to load dangerous cargo that might damage a ship without the carrier's knowledge or consent, the carrier's and/or its subrogated insurers' prospects of meaningful recovery for their losses are likely to be slim where the shipper is uninsured or a brass plate company in China.



If you wish to discuss the topic further, please contact:

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Concluding thoughts

These recent cases indicate the dangers involved with misdeclaration of dangerous goods. Why do shippers misdeclare these cargoes? Do they wish to avoid paying the higher dangerous good fees that carriers impose? Do they wish to evade the carriage requirements on packing and quantity invoked by the IMDG? Or do they simply not care about the risks they subject the ship and crew to?

An answer to these questions is not easy to find and industry bodies such as the CINS initiative are spreading awareness about these malpractices. The Standard Club has endorsed this initiative in its quest for safer seas and ships.

Web alerts

The Standard Club issues a variety of publications and web alerts on topical issues and club updates. Keep up to date by visiting the News section on our website www.standard-club.com

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