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SPECIALTY MARINE



SOY BEANS

A 'HOT' COMMODITY

Soya beans have become one of the most economically significant plants and are cultivated and harvested on a large scale, especially in the Americas. Due to their high value and the large quantities of export, this seemingly harmless cargo is responsible for multimillion-dollar claims.

With this circular, MSIG Specialty Marine would like to promote further awareness of the risks associated with the loading, carriage and discharge of soya beans, as well as provide some loss prevention recommendations.

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What is soy?

Soy, also known as soya beans, is a species of legume native to East Asia. The plant can reach more than two meters and has one to four seeds per pod.

Soya beans are one of the richest and cheapest sources of protein and are, therefore, used in diets of both humans and animals. Thus, soy is one of the world's most economically significant plants and is cultivated and harvested on a grand scale. Since the early 1990s, the demand for soya beans has increased significantly, especially in China. The main producers of soy are Brazil, the United States, Argentina, China, and India.

What are the risks?

Soya beans generally have a long shelf life provided they remain below 25°C and contain no more than 11.5% moisture. The usual 40-day voyage between Brazil and China should not be a problem, as long as the temperature and moisture contents are within the set parameters. However, if soya beans are loaded at 25–35°C and their moisture content is above 11.5%, the cargo becomes unstable, which can cause self-heating of the cargo, resulting in a fire.

First, in the process of self-heating, oxygen is subtracted, causing asphyxiation of persons when entering the hold or adjacent areas. Secondly, if the self-heating progresses, a cargo fire can occur, putting the ship and its crew in danger. It is, therefore, of utmost importance to be aware and note the conditions of the cargo before loading, as well as the conditions of the hold.

In addition to the risk of self-heating, soya beans are susceptible to mould and rotting. The warm air from the cargo will raise and come in contact with the cool steelwork of the hold and hatch covers. As a result, condensation will form and drip onto the cargo. This typically occurs when the vessel sails from a warm to a cooler climate.

Case Study

Soya beans were harvested in the “Mato Grosso” region in Brazil and transported by trucks and barges to the sea port. Due to heavy rainfall, overly moist beans went into storage. The contract of sale stated a moisture limit of 14%. Despite this being higher than the advised 11.5%, the cargo surveyor stated that the cargo was “within the limits” and the cargo was loaded.

Upon arrival in China, the vessel had to wait for another 30 days at anchorage due to port congestion. The additional waiting period caused the cargo to self-heat, resulting in a fire. Luckily, the crew was able to extinguish the fire before it spread, but the cargo in the hold was completely deteriorated. The cargo was rejected by the Chinese receivers as it was not suitable for consumption, and the receivers filed a multimillion-dollar claim for their damages.

Contractual clauses

Under the applicable international liability regimes, there is an obligation to inspect the cargo's apparent order and condition at loading, in order to enable the Master to ensure that the bill of lading is accurate. Furthermore, the Master and his crew are obliged to properly and **carefully load, handle, stow, carry, keep, care for and discharge** the cargo loaded.

Under Article IV rule 2 (m) of the Hague-Visby Rules, the carrier is protected and not responsible for damage or loss when same has resulted from an inherent vice or defect of the goods. However, parties should not rely too easily on this statutory protection as it will require serious evidence to prove that the damage resulted precisely for that reason and, furthermore, some jurisdictions do not accept the defence of inherent vice.



As there is “freedom of contract”, parties can allocate responsibilities and liabilities as they wish. In this context, legal loss prevention can be very effective to avoid cargo claims. Such measures include carefully drafting contracts with a clear allocation of liability. We advise parties to specifically check their contracts for clauses which concern the areas listed below:

◆ **Moisture content**

Most contracts of sale and charter parties have clauses stating the allowed moisture content of the cargo. This limit should be below 11.5%, in order to prevent the cargo from becoming unstable.

◆ **ICA**

MSIG Specialty Marine recommends the incorporation of the ICA (Inter Club Agreement) in charter parties, as the ICA serves as a useful mechanism in apportioning the responsibility for cargo claims in certain circumstances.

Please note that cargo damages caused by the prolonged stay of the ship at a port or anchorage ordered by the charterers, will be treated as a cargo claim under clause 8(d) of the ICA, thus apportioned 50/50 between owners and charterers (The “Yangtze Xing Hua” case¹).

◆ **Shortages**

Soya beans are often loaded by conveyor belt whereby the cargo weight is established by using the shore scale. If the weight in the discharge port is, however, determined by a draft survey, a paper shortage can occur. Therefore, ideally, if the cargo is loaded by a shore scale at the load port, it should also be discharged and weighed by a shore scale, or the other way around, to avoid different weighing methods. If this is not possible, a joint hatch sealing survey (at both ports) may be useful. The preferred method of weighing the cargo should be stated in the charter parties.

◆ **Ventilation**

Ventilation of the holds is essential in order to avoid “sweating” of the cargo and the creation of mould. Records of the temperature and humidity levels should be kept as the holds should be ventilated as per standard maritime practice. If it is not feasible due to bad weather circumstances or for any other reason, this must be indicated in the logs.



Specific ventilation instructions from the charterers can be stated in the charter party and, therefore, parties should check whether they can comply with those, and if not, what the consequences would be.

◆ **Cleaning of holds**

Since soya beans are used as foodstuff, clean cargo holds are essential. Often charter parties have (standard) clauses in place which state that the vessel needs to be delivered with clean holds, but this can be further specified. For example, this can be done by adding rider clauses specifically stating the fumigation requirements, such as the [BIMCO Cargo Fumigation Clause for Charter Parties 2015](#).

Fumigation can, however, cause problems as the Master is not able to ventilate the cargo during the voyage. As a result, the cargo can arrive damaged, although the Master has followed the orders. Court cases, especially in China, have shown that the owners could then still be held liable for cargo damages if there are no clauses in the charter party which regulate ventilation (or the lack thereof). Thus, specifically worded clauses should be inserted in the charter party, stating that cargo damage due to the lack of ventilation will not be for the shipowner’s account.

¹ Transgrain Shipping (Singapore) Pte Limited -v- Yangtze Navigation (Hong Kong) Co. Limited [2017] EWCA Civ 2107 (MV “YANGTZE XING HUA”)

Recommendations

To minimise the risks associated with transporting soya beans, we recommend the following precautionary measures:

Prior loading:

- ◆ As any other grain cargo, soya beans should be kept dry at all times.
- ◆ Holds, including bilges, should be clean, dry and preferably sealed.
- ◆ Weather tightness of the hatches should be confirmed by means of an ultrasonic test.
- ◆ The age, quantity, temperature and humidity of the soya beans should be confirmed by an independent cargo surveyor. These should be within the set parameters.
- ◆ If the moisture contents is too high, or if the cargo is obviously caked or mouldy, it should be refused for loading and a letter of protest should be issued.
- ◆ The proper functioning of the ventilation of the holds should be checked.

During loading:

- ◆ The cargo should not be loaded near sources of heat and particularly near heated tanks.
- ◆ Throughout loading, records should be kept of the humidity levels and temperatures of every batch of cargo that is loaded, and this should include taking photographs.
- ◆ When cargo appears damaged or does not meet the specifications, this should be recorded and a protest should be issued accordingly.
- ◆ Loading should be **stopped** and the hatches should be closed before rainfall. The cargo should be kept dry at all times.



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During transit:

- ◆ A daily record of the cargo temperature and humidity levels should be kept.
- ◆ The holds should be ventilated to avoid sweating and this should be recorded. If ventilation is not feasible due to bad weather circumstances or for any other reason, this must be indicated in the logs. Be aware that ventilation will not reduce the temperature of the cargo nor the risk of self-heating. It only prevents the growth of mould.
- ◆ Ensure safe entry in the hold by measuring the contents of the atmosphere. Additional recommendations for entering enclosed spaces can be found in our circular 'Enclosed Space Entry' issued in March 2024.

During discharge:

- ◆ If damages have occurred, detailed photographs of each hold should be taken, containing a time stamp.
- ◆ Representative samples should be taken by an independent surveyor throughout the discharge operations. These samples should be carefully analysed in order to confirm whether the cargo quality has been compromised.
- ◆ Use the same weighing method as in the load port to avoid shortage.
- ◆ Cargo should not be discharged during rain.

We furthermore recommend using clear provisions outlining the allocation of responsibilities in respect of the risk of shortage and cargo damages by the incorporation of charter party clauses.

This circular is meant for guidance purposes only



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