

What is an Environmentally Hazardous Substance?

It depends on whose regulations you consult!

The DOT Hazardous Materials Regulations have had a “hazardous substance” concept for many years. The original rules came from EPA (CERCLA) and did not involve transport. However the EPA guidance did make its way into 49 CFR eventually. The concept revolves around a concise definition found in 49 CFR §171.8, and involves two basic issues:

Is a material on the “List of Hazardous Substances”? (Appendix A of §172.101)

and if so:

Is the quantity in one package equal to or greater than its assigned reportable quantity? (RQ)

For example, acetone is on the list of hazardous substances, but its reportable quantity is a whopping 5000 lbs. This means 5000 lbs. or more of material would have to be in one package before the configuration became a DOT hazardous substance. Acetone is a hazardous material in any event as it's a flammable liquid. But a shipper would have to determine if their acetone configuration has the additional stigma of being environmentally hazardous.

Mercury is also on the DOT list, with a 1 lb. reportable quantity. It doesn't take a lot of mercury in one package to become environmentally hazardous.

If the DOT definition is met, the material is subject to additional regulation such as the marking of the letters “RQ” on non bulk packages, and the inclusion of the letters “RQ” on the shipping document.

Interestingly enough, these requirements carry forward into the ICAO Technical Instructions, and the IMDG Code, as Subpart C of Part 171 of the HMR establishes. So exporter, beware! In training classes I find a lot of people who simply are not aware of this. In IATA/ICAO, there is a specific US variation (USG-04) which addresses this issue.

However, in recent years, the UN, and thus ICAO and the IMDG Code have introduced the term “environmentally hazardous substance” into their regulations as well. Typically, what the UN considers to be “EHS” will also be known as a marine pollutant.

This definition is quite complex to say the least. There is no list as in DOT, and IATA simply cross references the UN Model Regulation, specifically 2.9.3 of the 15th edition.

In the worst scenario, the air shipper will have to add an “Environmentally Hazardous Substance” marking to a package. (exceptions exist for small packages).



Therefore, a shipment traveling by air or ocean from the US to an international (or even domestic) destination, may be subject to both concepts, or only one of them or of course none of them. For example, if a package contains a “hazardous substance” as defined by DOT, the material is not automatically going to be considered as EHS in IMDG, or ICAO/IATA.

One can tell how confusing this issue can be! Again, shipper beware! These are two very different concepts which both share a similar name. Without careful scrutiny, shippers could find themselves out of compliance.

The DOT definition can be learned and practiced in the classroom. It might be possible to “self interpret” the definition if one is an expert in reading DOT regulations.

The UN definition is so complex that it literally requires an expert in toxicology or a marine biologist. Of course there will always be the assumption that a material safety data sheet will solve this issue. My experience is that most will not. Please remember that this topic is new in the US, and the OSHA standards for MSDS make this kind of information optional. If you have a good MSDS (soon to be called SDS), wonderful, if not, beware!

If the MSDS does not address environmentally hazardous, then you will literally have to test the material against the UN parameters. This could be expensive unfortunately.

DOT and the UN consider their “hazardous substances” to meet the definition of a dangerous good or hazardous material. So shippers can find themselves subject to shipping regulation as a result of the potential of the material to harm the environment!