

Are your rubber conveyor belts safe for human health and the environment?

CONVEYING ADVICE

Because of its adaptability, the vast majority of the rubber used to make modern-day conveyor belts is synthetic or, at most, contains only a relatively small element of natural rubber. Especially in dry bulk handling, conveyor belts need to be able to cope with a variety of different demands including resistance to oil, fire, abrasive wear, ripping, cutting and ozone & ultraviolet.

In basic scientific terms, the creation of these rubber compounds (rubber compounding) is the process where a range of 'specific task' chemicals, reinforcements and anti-degradants are mixed together with rubber polymers. The most common polymers used in conveyor belts are Styrene-Butadiene rubber (SBR) and Nitrile rubber (NBR). There are literally dozens of different chemical components used such as anti-degradants, antiozonants as well as 'accelerators', which are essential for the vulcanization process. The chemical agents form chains of polymers to form rubber compounds that will ultimately be vulcanized to create the finished product. It is an inescapable fact that it

is necessary to use chemicals that are potentially extremely dangerous. However, it is the type of chemicals and the quantities they are used in that presents the big question — are your conveyor belts safe for the health of humans and the environment?

REGULATORY CONTROL

Fortunately, there are very strong regulations in place in Europe designed to protect human life and the environment in the form of REACH (Registration, Evaluation and Authorisation of Chemical substances) regulation EC 1907/2006. The regulations stipulate that manufacturers must register information relating to the use of chemicals, preparations (mixtures) and substances used to manufacture their finished products in a central database in the European Chemicals Agency (ECHA) based in Helsinki. This especially includes



substances of very high concern (SVHC's) which may have carcinogenic classifications (REACH article 57), mutagens and chemicals toxic for reproduction (CMR) as well as Persistent Organic Pollutants (POP's) and short-chain chlorinated paraffin's (SCCP's). Short-chain chlorinated paraffin's are commonly used, especially in Southeast Asia, to 'super-accelerate' the vulcanizing process. Of particular concern is the formation of nitrosamine gases, which are chemical compounds classified as probable human carcinogens based on animal studies, that are known to occur when certain types of vulcanization accelerators are used. The gases can release themselves from rubber belts, which could be hazardous if the belts are stored indoors.

AN OPEN DOOR

Sadly, some European conveyor belt manufacturers have chosen to ignore



Non-EU and UK based manufacturers are not subject to European regulation.



Wear a mask to avoid inhaling rubber dust.

REACH requirements, either completely or at least partially because of the impact on production costs. However, the biggest concern is that manufacturers located outside of EU member states and the UK are not subject to European regulations. Imported belting from Southeast Asia, primarily China, now dominates the European market. Competition is fierce and largely driven by the selling price. Raw materials make up more than 70% of the cost of producing an industrial conveyor belt so the incentive to minimize costs, regardless of risk to human life and the environment is huge. As with all markets, unregulated raw materials cost appreciably less than their much safer, strictly controlled compliant counterparts. This creates an extremely

significant selling price advantage for those who are not even subject to safety regulations in the first place.

Although importing belts that contain materials that are controlled or forbidden in Europe is legally permissible, those who import belts from outside of Europe are responsible for regulation compliance. This effectively means that the manufacturers are free from responsibility and the consequences while the importers may be unaware of the risks that they are exposing their business to. Much worse is the fact that those who regularly work with conveyor belts such as conveyor maintenance staff and belt splicers, are exposed to potentially serious health risks, not to mention the untold damage to the environment. Unlike car tyres,

less than 10% of conveyor belts are recycled.

PLAY IT SAFE

Always ask for written confirmation from the belt manufacturer or supplier that the belt you are buying has been produced in compliance with REACH EC 1907/2006 regulations. A certificate of origin is also helpful.

At the same time, basic safety precautions should be applied. Firstly, wear gloves when handling belts. Secondly, it is advisable to wash your hands before drinking, eating or smoking. Lastly, those involved in activity that may cause rubber dust to be produced, such as grinding for example, should wear a mask to prevent inhalation of dust particles.

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