ASHLAND

Cycletime Tips - General

Volume 3: Proper Pellet Handling

By Mark Shade

Usually little attention is paid to thermoplastic resin pellets handling because it is one of those things that seems easy and obvious. Yet proper pellet handling is essential for worker safety, environmental impact, aesthetics and economics.

Safety

Pellets can cause slips, injure eyes or cause fires. Injuries from falling can be extremely dangerous. Even with the typical eye protection found in most molding facilities, pellets, regrind particles and fines often find their way into workers' eyes.

Pellets can come from several sources which include: granulators, conveying systems and cleaning methods. Safety methods should be employed on these sources. Keep granulator guards and covers in place and in good condition. Regularly inspect conveying system components for wear and light conditions. Use vacuum cleaners to clean hoppers, granulators, and other equipment. DO NOT use compressed air for cleaning; you just move the debris from one spot to another, perhaps even making a larger problem area.

Pellets and plastic fines can become fire hazards if allowed to accumulate on or near ignition and/or heat sources. Again, with safety procedures, hazards can be greatly decreased. Properly ground equipment to eliminate static electricity charges. Remember, fines will burn much easier than pellets due to their size. Minimize fines generation by keeping granulators in good condition. Use sharp blades and correct gap settings. Lower conveying rates and elimination of sharp corners in the conveying pipes and connectors will help reduce fines generation during transport from storage to use.

Environmental Impact

Pellets are not commonly thought to be an environmental problem due to their inert and benign form. However, pellets are a growing environmental problem due to their ease of contaminating drainage ditches, storm water sewers, etc. In addition, plastic pellets are believed to be a potential hazard if eaten by birds or marine life. The EPA has classified resin pellets as "significant materials" which makes the existence of a single pellet found in storm run-off water subject to federal regulatory action that may include fines and penalties.

Use catch pans or other such devices under railcar and tanker connections and access ports to contain any possible spills. Train employees not to dispose of pellets onto ground surfaces. Utilize screens or holding tanks within drain systems to prevent loss into storm systems. Clean-up should be immediate and thorough. Store waste pellets in properly labeled, non-leaking containers. Dispose of waste pellets by recycling or resale, using

approved incineration methods or into controlled landfills. Make sure the waste vendor, if used, is qualified and understands proper handling, storage and disposal under local, state and federal laws.

Aesthetics
Pellets, regrind particles and fines fall onto and into equipment, floors, into parts containers, onto parts, into cooling fluids and into hydraulic systems. Utilize good housekeeping practices and regular inspections to eliminate these pellets accumulations. The debris found within equipment can cause malfunctions and poor performance. Debris found on and in parts reduces the value of the product. Pellets, regrind particles and fines covering floors and equipment contributes to negative appearance to the work areas and leads to negative impressions on employees, customers and visitors.

Economics
The negative economic impact of improper pellet handling can include lost inventory costs, clean-up costs, lost time costs, disposal costs and fines. Careless pellets handling will contribute to contamination of dissimilar plastics thus rendering the entire lot un-usable. Leaking conveying systems have been known to lose thousands of pounds of material between storage silos/containers and the processing equipment. Typical housekeeping costs are usually higher than they need to be if preventive measures are used. If you factor in the costs to clean-up major spills and other mishaps, the clean-up costs from mishandling and neglect can be very great. Lost production time from lost inventory is down time that can't be recovered. Every employer feels responsibility for the health and safety of employees. Protection for employees and lost time due to injuries continues to be a major concern for most processors. The injury of one employee often causes lost productive time for several other employees. With landfills becoming less accepted and more regulated, the cost to use these facilities will continue to force processors to place more emphasis on other disposal means. Government fines and penalties can appear to be unreasonable, however they are usually certain when a violation is discovered.

Operation Clean Sweep
For more information about pellet loss prevention and a copy of Pellet Loss Prevention Manual, call or write to:

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