UNIPURGE™ DFDB-0964 Natural 7

The Dow Chemical Company - Purging Compound

Tuesday, November 5, 2019

General Information

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Product Description

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Introduction

- Commercial plastic processing equipment requires fast, effective, and inexpensive means of purging, particularly when processing a series of polyethylene compounds that vary widely in melt index, density, or in color.

- UNIPURGE™ DFDB-0964 Natural 7 is a pelletized polyethylene-based purge compound with excellent scrubbing characteristics and low odor. UNIPURGE DFDB-0964 Natural 7 provides a practical method of rapidly and economically cleaning plastic processing equipment, such as extruders and injection molders. When used on a regular basis, you can minimize downtime for cleanups and in facilitating transition from one resin to another. UNIPURGE DFDB-0964 Natural 7 can be utilized in film extrusion equipment, profile extrusion, wire coating, injection molding and compounding lines. UNIPURGE purge compounds have been the industry workhorse for over twenty years and have provided the first practical method of rapidly and economically cleaning extruders. UNIPURGE DFDB-0964 Natural 7 has been found to provide exceptional scouring activity, thus yielding efficient cleaning of the equipment.

How Does It Work?

- Several cleaning agents have been incorporated in a polyethylene-based composition to produce a compound with excellent scrubbing and scavenging properties. DFDB-0964 Natural 7 purge compound is designed to extrude with low power requirements. This compound is highly suitable for introduction into extruders and dies when a shutdown period is required. The compound has the rigidity needed to purge out stiff grade polyethylenes, yet can be flushed out in turn by soft grades.

Why Use Purge?

- The use of DFDB-0964 Natural 7 purge compound just prior to equipment dismantling can reduce cleanup downtime significantly. The compound effectively removes degraded polyethylene from the extruder barrel and die. Because a minimum amount of DFDB-0964 Natural 7 remains in the extruder when the extruder is run dry, the ease of extruder screw removal is increased. DFDB-0964 Natural 7 will also strip easily from the die, adapter, and head cavities. Periodic cleaning with DFDB-0964 Natural 7 purge compound is good preventive maintenance, because it decreases both the frequency and duration of shutdowns needed for cleanup. Similarly, the purging efficiency of DFDB-0964 Natural 7 purge compound dramatically reduces the amount of scrap generated when changing from a lower melt index material to a higher melt index material or from one color to another.

- These examples are just a few of the many instances in which the moderate cost of DFDB-0964 Natural 7 purge compound is more than offset by reduced equipment downtime and/or reduced scrap.

When To Use

- In addition to the conditions described previously, the use of UNIPURGE is advisable in the following circumstances:
  - 1. Excessive web tears at the die. (To remedy: introduce purge compound, do not change conditions, and return to the standard compound.)
  - 2. Shifting production from thicker to thinner gauges of 0.75 mil (19 microns) and under. (Purge before reducing the gauge.)
  - 3. Immediately before shutdown. (DFDB-0964 Natural 7 purging compound remains in extruder during shutdown period to protect interior, and is rapidly flushed out by standard compound on startup.)

How To Use

- The amount of DFDB-0964 Natural 7 purge compound required to do a satisfactory cleaning job varies with the degree of contamination and the equipment size. When UNIPURGE is used on a regular basis, the equipment reaches a higher state of cleanliness, and less purge compound is required in succeeding cleaning operations.

- For example, an extruder and die that have been in constant use over a long period will have accumulated a considerable amount of degraded resin. In this instance, it would be advisable to remove the screen pack to prevent severe plugging and possible head rupture while purging. An increase in extruder pressure behind the screen pack is an indication of clogging, and, under such circumstances, a screen pack change is considered advisable. Once DFDB-0964 Natural 7 purging compound has been used on a continuing periodic basis, the screen pack will not normally need to be removed during or after the purging operation.

- The recommended upper processing temperature limit is 250°C. Prolonged exposure to temperatures in excess of the recommended upper processing temperature should be avoided in order to prevent off-gasing or resin degradation. Allowing product to sit in an idle heated extruder should also be avoided. It is recommended that the extruder screw be turning at all times.

- DFDB-0964 Natural 7 purging compound may be used to purge any standard polyethylene extrusion compound. Normally, it is not necessary to change the compound temperature on the equipment. For more effective cleaning, however, it is advisable to use a neutral screw and to vary screw speed repeatedly from high to low and back to high. Winding or take-off equipment speed should be adjusted correspondingly to prevent breakage. If excessive slippage in the screw is encountered, DFDB-0964 Natural 7 can be diluted 50:50 with natural polyethylene resin, and then by DFDB-0964 Natural 7 full-strength. DFDB-0964 Natural 7 can then be flushed out simply by introducing the desired standard compound. The use of natural resin with DFDB-0964 Natural 7 in this procedure minimizes the chance of slippage in the screw and provides rapid cleaning at a nominal cost.

FDA Status

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- The resin content of polyethylene DFDB-0964 Natural 7 complies with Food Additive Regulation21 CFR 177.1520 for Olefin Polymers par (c) 2.1. The additives present are sanctioned by appropriate Food Additive regulations.

- The intended use for DFDB-0964 Natural 7 is as a purge compound for cleaning extruders. DFDB-0964 Natural 7 is not intended for food packaging use. This purge compound meets the FDA requirements for polyolefins intended for food contact applications to facilitate its use as a purge compound in facilities manufacturing food packaging and other food contact articles. DFDB-0964 Natural 7 cannot be used legally for holding food during cooking.

General			
Material Status	• Commercial: Active		
Availability	• Africa & Middle East • Asia Pacific	• Europe • Latin America	• North America
Uses	• Purging Compound	• Wire & Cable Applications	
Agency Ratings	• FDA 21 CFR 177.1520(c) 2.1		
Forms	• Pellets		

Processing Information

Extrusion Notes

Approximate amounts of DFDB-0964 Natural 7 purging compound recommended for use in a routine program:

2.5 in (60 mm) Extruder

First Time: 25 lb (11 kg)
Once per Week: 15 lb (7 kg)
Once per Month: 25 lb (11 kg)

3.5 in (90 mm) Extruder

First Time: 50 lb (23 kg)
Once per Week: 25 lb (11 kg)
Once per Month: 50 lb (23 kg)

4.5 in (110 mm) Extruder

First Time: 100 lb (45 kg)
Once per Week: 50 lb (23 kg)
Once per Month: 100 lb (45 kg)

6.5 in (150 mm) Extruder

First Time: 200 lb (90 kg)
Once per Week: 100 lb (45 kg)
Once per Month: 200 lb (90 kg)