



NEW

# Performance Additives iM30K

## INTRODUCTION

3M™ Performance Additives iM30K are new, high-strength polymer additives made from a water-resistant and chemically-stable soda-lime-borosilicate glass. These hollow glass microspheres can be used as a low density filler material ideal for plastic and rubber parts created from injection molding, extrusion processes, and/or other vigorous processing equipment (e.g., Banbury mixers, etc.), offering improved processing over many conventional fillers.

3M iM30K additives help to reduce weight, improve abrasion resistance, reduce thermal expansion, increase surface hardness and contribute to material and process cost savings. They are ideal additive materials in the automotive, heavy truck, aerospace, electrical, electronics, appliance and durable goods industries, as well as in construction products such as polymer/wood composites and siding – helping not only to reduce part weight, but also to improve dimensional stability.

## MATERIAL DESCRIPTION

Properties	3M™ Performance Additives iM30K
Shape	Hollow spheres with thin walls
Composition	Soda-lime-borosilicate glass
Color, Unaided Eye	White, powdery

## TYPICAL PHYSICAL PROPERTIES

Not for specification purposes

Properties	3M™ iM30K Additives	Test Method
Isostatic crush strength (psi)	28,000 psi	3M QCM 14.1.8
True density	0.60 g/cc	3M QCM 14.24.1
Packing factor (bulk density to true particle density)	63%	
Oil absorption	33.5 g oil/100 cc of polymer additive	ASTM D282-84
Softening point	600°C	
Flotation (density<1.0 g/cc)	90% (in volume)	3M QCM 37.2
Volatile content	0.5 % max. (by weight)	3M QCM 1.5.7
Alkalinity	0.5 milli-equivalents/gram max.	3M QCM 55.19
pH	9.5 at 5% loading in water	ASTM D3100-1982
Diameter (average)	18 microns	3M QCM 193.0

## 3M™ PERFORMANCE ADDITIVES iM30K FORMULATING INFORMATION

**Flow properties:** 3M™ Performance Additives iM30K will remain free flowing for at least one year from the date of shipment when stored in the original, unopened container in accordance with the recommended storage conditions. (See below for storage recommendations.)

**Breakage:** Breakage may occur if the product is severely processed. To minimize breakage, minimize exposure to high shear processes such as high speed Cowles Dissolvers, and point contact shear such as gear pumps and 3-roll mills. For twin screw extruders, place 3M iM30K additives in the downstream port to minimize time in the extruder.

## PRODUCT PACKAGING

3M iM30K additives are packaged in heavy-duty polyethylene bags with cardboard containers designed to prevent damage during normal handling and shipping while maintaining free-flowing properties. Each container is labeled with the following:

- Name of manufacturer
- Product identification
- Lot number
- Quantity in pounds
- Density (average) of the box

## PRODUCT STORAGE

**Storage:** Ideal storage conditions include unopened cartons in a dry and temperature controlled warehouse.

Extended exposure of 3M iM30K additives boxes to high humidity and/or conditions susceptible to condensation may result in some amount of “caking” of the product.

To minimize the potential for caking and thereby maximize storage life, the following suggestions are offered:

1. Carefully re-tie opened bags immediately after use.
2. If the polyethylene bag is punctured during shipping or handling, seal the hole as soon as possible or insert the contents into an undamaged bag.
3. During hot and/or humid months, store boxes in the driest, coolest space available.

If controlled storage conditions are unavailable, carry a minimum inventory and process on a “first in/first out” basis.

## 3M™ PERFORMANCE ADDITIVES iM30K PRODUCT HANDLING AND SAFETY

Note: Before using product, read and follow the precautions and directions for use in the product label and Material Safety Data Sheet.

**Handling:** Due to the low weight and small particle size of 3M™ Performance Additives iM30K, dusting may occur while handling and processing. To minimize the dusting potential during handling, consider the following:

- Do not open packages until ready to use.
- Upon opening, have an air siphon near the opening to pull away airborne particles. (Dust collection equipment may be required—check with local OSHA regulations.)
- Remove product with a suction “wand” (with slight positive pressure aeration) and transfer to a closed mixing tank inside fully contained piping. If a closed mixing tank is not available, use dust collection equipment as close as practical to the point of entry. Pneumatic conveyor systems have been used successfully to transport product without dusting from shipping containers to batch mixing equipment. Equipment vendors should be consulted for specific recommendations.
- Static eliminators should be used to prevent static buildup.

**Safety:** For worker protection, please consider the following:

- Use chemical safety goggles for eye protection.
- For respiratory system protection wear an appropriate NIOSH/MSHA approved respirator. (For additional information about personal protective equipment, refer to the Material Safety Data Sheet.)
- Use appropriate ventilation/dust collection in the work area.

**3M™ PERFORMANCE  
ADDITIVES iM30K  
ADDITIONAL  
INFORMATION**

For additional information about 3M™ Performance Additives iM30K, or more product information about any 3M Microsphere product, please call 1-800-367-8905, or contact your local 3M representative.

**United States**

3M Specialty Materials  
3M Center, Building 223-6S-04  
St. Paul, MN 55144-1000  
**800 367 8905**  
**800 810 8514** (Fax)

**Argentina**

3M Argentina S.A.C.I.F.I.A  
Los Arboles 842  
1686 Hurlingham  
Provincia de Buenos Aires  
Argentina  
**5411 4469 8200**

**Gulf**

3M Gulf, Ltd.  
4th Floor, Entrance 4  
Hamarain Center  
Deira  
Dubai  
United Arab Emirates  
**971 4 265 2121**

**Europe**

3M Specialty Materials  
3M Belgium N. V.  
Haven 1005, Canadastraat 11  
B-2070 Zwijndrecht  
**32 3 250 7511**

**Brazil**

3M DO Brazil Ltda  
Via Anhanguera, km 110  
13001-970 Sumare  
Sao Paulo, Brazil  
**55 19 3838 7331**

**India**

Birla 3M Limited Bangalore  
Raheja Paramount,  
13, Residency Road  
Bangalore 560 025  
India  
**91 80 2231414**

**Canada**

3M Canada Company  
Specialty Materials  
1840 Oxford Street  
London, Ontario  
N5V 3R6  
**800 364 3577**

**Mexico**

3M Mexico, S.A. de C.V.  
Avenida Santa Fe #55  
Col. Santa Fe  
Delegación Alvaro Obregón  
01210 Mexico, D.F.  
**52 55 5270 0400**

**Asia Pacific**

Call (U.S.) **651 736 7123**

**Japan**

Sumitomo 3M Limited  
33-1, Tamagawadai 2-chome  
Setagaya-ku, Tokyo  
158-8583 Japan  
**813 3709 8250**

**Venezuela**

3M Manufacturera Venezuela, S.A.  
Final Avenida Tamanaco  
Centro Empresarial El Rosal, Piso 6  
Urb. El Rosal (Chacao) Caracas 1060  
**58 212 957 8111**

---

**Important Notice to Purchaser:** The information in this publication is based on tests that we believe are reliable. Your results may vary due to differences in test types and conditions. You must evaluate and determine whether the product is suitable for your intended application. Since conditions of product use are outside of our control and vary widely, the following is made in lieu of all express and implied warranties (including the implied warranties of merchantability and fitness for a particular purpose): Except where prohibited by law, 3M's only obligation and your only remedy, is replacement or, at 3M's option, refund of the original purchase price of product that is shown to have been defective when you received it. In no case will 3M be liable for any direct, indirect, special, incidental, or consequential damages (including, without limitation, lost profits, goodwill, and business opportunity) based on breach of warranty, condition or contract, negligence, strict tort, or any other legal or equitable theory.



**3M Specialty Materials**

3M Center, Building 223-6S-04  
St. Paul, MN 55144-1000

[www.3m.com/specialtymaterials](http://www.3m.com/specialtymaterials)

Issued: 8/06

© 2006 3M

5194(HB)  
98-0212-3813-8