Recognizing that dentists love
the handling of a flowable com-
posite, even with certain disad-
vantages in its physical properties, GC
America has developed a next-generation
solution, G-ænial™ (pronounced genial)
Universal Flo. "Basically, we combined
the best attributes of regular, universal,
packable, anterior composites with the
best properties of a flowable—that is what
G-ænial is all about," says Mark Heiss,
DDS, director of regulatory and academic
affairs for GC America. "It is a ground-
breaking product that falls under the cat-
egory of nanohybrid flowable composite."

As Heiss explains, the company brought
its strong R&D capabilities and perspec-
tive to the development of G-ænial. "As a
dental materials company with strength in
chemistry, we always look at not only the
resin, but the filler. We have the expertise
and the R&D ability to manage all aspects
of a composite. Although we made some
improvements to the resin, for this prod-
uct we mainly concentrated on the filler,
which helps in terms of handling, esthet-
ics, and strength. We use a unique type of
glass, so we are bringing our expertise in
glass-ionomer technology too, which is our
area of expertise. G-ænial has very small
surface-treated glass particles, which gives
it its nano aspect." One of the challenges
in manufacturing a composite is to make
sure that these particles are dispersed
evenly, that it is homogeneous. "Otherwise
you might get clumping," Heiss says.
"Fortunately, our manufacturing process
is designed to generate and manufacture
a homogenous material."

Regarding the product’s filler content,
it is more highly filled than other flow-
able products on the market," Heiss adds. "To
enhance wear resistance, we lock these
fillers in place with the resin, so there is an
internal bond between the filler and
the resin matrix. With these advances,
G-ænial has shown high wear resis-
tance. It also exhibits superior flexural
strength—in an area that is under stress,
it is not going to crack."

Not only did GC America advance the
composite chemistry, it also improved the
delivery system. "We recognize that den-
tists are extremely interested in this as-
pect—anything that can minimize waste,
make it easy to use in the clinic, and facili-
tate clean up. Some dentists experience
finger fatigue if it takes a lot of pressure
to push the material out of the syringe tip
opening. However, with G-ænial that is not
an issue. We designed the tip and syringe
to minimize or prevent fatigue. We even
thought about the barrel—it is constructed
with a rectangular flange, so the syringe
doesn’t roll when it is placed on the counter.
We also incorporated a fine tip and a long
nozzle—for better reach, improved acces-
sibility, easier flow control, and less waste."

Heiss points out some additional physical
properties that will appeal to G-ænial users.
“Clinicians want to know if the product is
glossy or not, and does it maintain its gloss.
Almost any product can start out shiny, and
the patient is happy at first—but what is just
as important is the ability to maintain that
gloss. G-ænial is very easy to polish, and once
you polish it to a gloss, it maintains its luster."

Kelley Reinfelds, product manager, ex-
plains that the company has developed a
unique set of attributes in G-ænial that
are valuable to clinicians and their pa-
tients. “Most times, when your product is
a flowable, you compare it against other
flowables,” she says. “And when it is a com-
posite, you compare it against conventional
composites. With G-ænial, we are able to
do a lot of physical property testing against
both types of competitors, which is highly
unusual. So even though we are in the
category of flowables, we are also testing
ourselves against composites—and faring
better in physical property testing against
both. So it is a one-of-a-kind product. We
do not want to pigeon hole it as just another
flowable." Heiss agrees, “Yes, it is flowable,
has the best attributes of a packable, like
a conventional nanohybrid composite. So in many ways, it is the best of all worlds.”

“This product is such an unusual blend of two categories,” Reinfelds continues. “It can be difficult to categorize—it looks and feels like a flowable composite but acts like another composite category. However, we have to place it somewhere in the catalog. Because it comes in a syringe and behaves like a flowable, it is going to be in that section; however, it does have so many unique characteristics. Today, the market is so crowded, there seems to be a new composite every time you turn around. So we really concentrated on providing a blend of physical properties and handling that will best benefit the dentist. I believe we have achieved that with G-ænial—and we will continue to come out with better and better composites in the future.” This ground-breaking “next generation” composite will be featured in a number of scientific presentations during the upcoming International Association for Dental Research meeting, March 2011.

With 90 years of history, GC’s R&D prowess is highly regarded. “We have more scientists and researchers dedicated to dental materials than most if not all other large dental companies,” Reinfelds says. “There are some bigger companies, but they do not have the R&D arm that GC does when it comes to this area. What we have accomplished as a dental company shows our commitment to quality and to our customers. Within the realm of composites, GC America will keep refining materials to offer the best of both worlds, as Mark said. We truly want to provide a quality product with the most incredible esthetics, great strength, low shrinkage, and everything else a clinician could ask for.”

Finally, no sacrifices.

- Use from bottom to top in Class I, II, III, IV and V restorations
- Over 167 MPa flexural strength
- Wear resistance superior to all leading flowables and conventional composites tested
- No voids when placing and exceptionally easy to handle

G-ænial Universal Flo. Your final flowable has evolved.

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