

## **Mock Negotiation Based On USP 5,620,489**

The main focus of today's negotiation between Patent Owner and Target Company is to interpret the meaning of the term "mixture" in claim 1 of the '489 patent.

### **I. Background of the '489 patent**

The '489 patent is directed to a method of making an abrasive polishing pad used to polish semiconductor wafers. The method involves mixing a powdered metal, such as bronze, with a liquid binder (*i.e.*, an adhesive glue) to form a putty or clay-like substance. The putty-like substance is rolled into thin sheets called a "preform" and applied to a metal substrate. Abrasive diamonds are pressed into the putty material. The assembly is then heated to a temperature high enough to sinter the diamonds to the metal substrate. During the heating process, the liquid binder glue evaporates, leaving only the sintered brazing material, which affixes the diamonds to the substrate. The final product is a high precision industrial-quality abrasive polishing disk.

### **II. Target Company's product**

Target Company manufactures an abrasive polishing pad that uses a preform mixture having a composition of 5% by volume binder and 95% by volume powdered sinterable metal.

### **III. Claim 1 of the '489 patent**

Claim 1 of the '489 patent recites:

1. In a method for making an abrasive article wherein a plurality of abrasive particles and a quantity of powdered sinterable matrix material are combined together and sintered to form the article, the improvement comprising forming a soft, easily deformable and flexible preform from a mixture of said quantity of powdered sinterable matrix material and a liquid binder composition, including a plurality of abrasive particles at least partially in said preform and then sintering said preform to form said abrasive article.

Note: "the improvement comprising" is the transitional phrase associated with a so-called "Jepson claim" In a Jepson claim, everything recited prior to the transitional phrase is deemed to be admitted prior art. For this reason, it is not generally a recommended claim form.

### **IV. Questions regarding the '489 patent specification and prosecution history**

A. Claim 1 recites only a "mixture" without specifying the relative volumetric concentrations of powdered metal and binder. Can Target Company argue that the '489 specification limits the term "mixture" in claim 1 only to certain mixtures having high volumetric concentrations of binder in relation to metal powder?

Please consider '489 patent, col. 3, lines 9-12 (stating “the volume of the binder composition is high” and “the volume of the binder...in the mixture...substantially exceeds the volume of the powdered composition and the abrasive particles”).

How does this statement help Target Company? What is Patent Owner’s response?

B. Can Patent Owner argue that Target Company is attempting to improperly limit the term “mixture” to a specific proportion of binder and metal powder based on certain embodiments in the specification? In U.S. practice, is it generally proper to limit a claim based on what is disclosed in the specification?

C. Can Target Company argue that it is not attempting to improperly redefine the claim term “mixture” but is merely suggesting interpreting the term “mixture” in view of the specification, which is proper under the holding of *Phillips v. AWH Corp.*, 415 F.3d 1303, 1314-17 (Fed. Cir. 2005) (*en banc*)?

D. Can Target Company further argue that reading the '489 claims in view of the specification, a skilled artisan would understand that “mixture” means what the inventor indicates in the specification, namely: binder-powder combinations having volumetric powder ratios usually from 1 to 5%, but extending to a maximum range of 0.3 to 10% (which correspond to binder concentrations of 90 to 99.7%? See '489 patent, col. 5, lines 27-32.

E. Can Target company also argue that it does not infringe because a reasonable construction of “mixture,” consistent with the specification, does not encompass mixtures having low volumetric concentrations of binder?

F. Does common sense dictate that a “person of ordinary skill” would not interpret “mixture” to encompass the opposite of what the inventor says it means in the specification?

G. Case law supporting a disclaimer argument – *SciMed Life Systems*

In *SciMed Life Systems, Inc. v. Advanced Cardiovascular Systems, Inc.*, 242 F.3d 1337 (Fed. Cir. 2001), the claim at issue was directed to a medical catheter for balloon angioplasty to clear blocked arteries. Two catheter styles were disclosed in the specification: 1) a coaxial style; and 2) a parallel style. The specification criticized the parallel style as being less effective than the coaxial style. The claim simply recited “catheter” and did not specify parallel or coaxial style. SciMed, the patent owner, asserted its claim against a competitor that used the parallel style. The court held that the patentee disclaimed in the specification all non-coaxial catheters, and concluded that the claim term “catheter” in the claims meant “coaxial catheter.”

Can Target Company make a similar disclaimer argument for the term “mixture” in the present case?

For example, Target Company could argue that the '489 specification leaves no doubt that a skilled artisan would conclude that the '489 inventor defined powder preform

mixtures to require high volumetric binder concentration, and affirmatively disclaimed binder-powder mixtures that do not have high volumetric binder concentration.

Beginning in the Abstract, the '489 patent describes a method for making abrasive articles that uses "a soft, easily deformable and flexible preform having a high binder content."

H. Can the Patent Owner argue that the Abstract is not limiting on the claims?

I. In response, can the Target Company argue that, in the Summary of the Invention, the '489 patent underscores the importance of having high binder volume in relation to powder, plainly, and without any limiting language that would indicate reference to only a particular preferred embodiment:

To form an SEDF preform, a slurry or paste formed of the powdered composition and the binder composition and binder composition. The concentration of powdered composition and abrasive particles (if included) in the slurry or paste is low, and the volume of the binder composition is high. In fact, the volume of the binder composition or binder phase in the mixture substantially exceeds the volume of the powdered composition and the abrasive particles.

See '489 patent, col. 3, lines 7-15.

J. Can the Patent Owner argue that the above language is also merely a preferred embodiment that is not limiting on the scope of the term "mixture" in the claims?

K. Can Target Company argue that col. 3, lines 7-15 has global application throughout the specification because it is not prefaced by language that it applies only to a preferred embodiment?

Consider the statement in the specification at col. 3, line 20, that begins:

"In one preferred form of the present invention,..."

Does this statement help Target Company's position or Patent Owner's position?

L. Can Target Company argue that, throughout the specification, when referring to a preferred embodiment, the inventor is careful to indicate that the statement only relates to a preferred embodiment and not all embodiments?

For example, consider the following statements from the specification:

'489 col. 3, line 20 ("**In one preferred form** of the present invention...")

'489 col. 4, lines 63-64 ("**It is preferable** to choose a binder composition that allows air...")

'489 col. 5, lines 31-32 (“**One successful preform** has been formed...”)

'489 col. 5, lines 55-56 (“**it is preferably** a porous material...”)

'489 col. 16, line 16 (“It should be understood that **the preferred embodiments** of the invention...”)

Based on these statements, can Target Company properly infer that the statements in the '489 specification that the volumetric concentration of binder exceed the volumetric concentration of powder have global applicability and are not merely preferred embodiments? In other words, can these statements be used by Target Company to argue that when the patent applicant intended for an embodiment to be merely exemplary, he so stated.

M. Can Target Company argue that the phrase “it can be extended to a range of 0.3 to 10%” means the outer extent of the acceptable range, *i.e.*, the maximum range?

For example, can Target Company argue that for the phrase “extended to a range of” to have meaning (every word in a claim is presumed to have meaning), it must refer to the outer extent of the acceptable range, *i.e.*, the maximum range. If this phrase were construed otherwise, *e.g.*, to refer to boundaries of some intermediate range that is less than the maximum range, the phrase “extended to a range of” would be rendered superfluous (*i.e.*, extra words that do not add meaning.)

N. In the prosecution history, in remarks made to the Examiner during prosecution to secure the '489 patent, the applicant twice argued that the volume of the inventive binder composition “substantially exceeds” the volume of the metal powder. *See* '489 Prosecution History 6/3/96 Amendment, p. 20.

Can Target Company use statements to interpret “mixture” in a way where there is no infringement in a negotiation with Patent Owner?

O. Can Patent Owner make a claim differentiation argument about the scope of claim 1 in view of claim 10?

For example, would interpreting the term “mixture” in claim 1 to mean a proportion wherein the binder material is present in a higher volume than the metal powder, as Target Company suggests, render claim 10 completely superfluous and redundant?

Claim 10 recites:

10. The method of claim 1, wherein said soft, easily deformable and flexible preform is formed from a slurry or paste of said mixture of powdered sinterable matrix material and liquid binder composition, said liquid binder composition comprising at least a cement and a liquid volatile component therefor **with the volume of the liquid binder composition in the mixture being greater than the volume of the powdered**

**sinterable matrix material**, the slurry or paste being formed into a substrate on a support surface, which substrate is thereafter cured to remove at least a portion of the liquid volatile component therefrom and form said preform.

P. Is Patent Owner correct that Target Company's proposed construction of claim 1 that would restrict mixtures to those mixtures having high binder volumes violate the doctrine of claim differentiation?

Can Target Company respond that claim 10 recites at least four limitations not present in claim 1, including: (1) the SEDF preform is formed from a slurry or paste; (2) the liquid binder composition comprises cement and a liquid volatile component; (3) the slurry or paste is formed into a substrate on the support surface; and (4) the substrate is cured to remove a portion of the liquid volatile component, and thus, construing the term "mixture" in claim 1 to require a high volume of binder in relation to powder, would not make claim 10 superfluous as a matter of law?

The case law indicates that for a claim to be deemed "superfluous" under the doctrine of claim differentiation, the limitation in question must be the only difference between the claims. *See, e.g., Kraft Foods, Inc. v. Int'l Trading Co.*, 203 F.3d 1362, 1368 (Fed. Cir. 2000); *see also Mantech Environmental Corp. v. Hudson Environmental Svcs., Inc.*, 152 F.3d 1368, 1376 (Fed. Cir. 1998). Thus, if a dependent claim recites multiple limitations not present in the independent claim, claim differentiation is generally not applicable. Moreover, claim differentiation may not be used to broaden claims beyond their meaning in light of the specification and prosecution history. *See Multiform Dessicants, Inc. v. Medzam, Ltd.*, 133 F.3d 1473, 1480 (Fed. Cir. 1998).

## V. **Mock Negotiation**

Now, let's form three teams and conduct a mock negotiation (Judge Team, Patent Owner Team, and Target Company Team). Please focus the arguments on infringement considerations (ignoring validity considerations). Please try to offer support for your positions based on the outline provided in Section IV, above.