

IN THE UNITED STATES DISTRICT COURT  
FOR THE DISTRICT OF DELAWARE

GEVO, INC., )  
)  
Plaintiff, )  
)  
v. )  
) C.A. No. \_\_\_\_\_  
BUTAMAX(TM) ADVANCED BIOFUELS )  
LLC, a Delaware limited liability company, ) **JURY TRIAL DEMANDED**  
and E.I. DUPONT DE NEMOURS AND CO., )  
a Delaware corporation, )  
)  
Defendants. )

**COMPLAINT**

Plaintiff Gevo, Inc. (“Gevo”), by its attorneys, for its Complaint against Defendants Butamax (TM) Advanced Biofuels LLC’s (“Butamax”) and E.I. DuPont de Nemours and Co. (“DuPont”), alleges as follows:

**THE PARTIES**

1. Gevo is a corporation organized and existing under the laws of the state of Delaware, with its principal place of business in Englewood, Colorado.
2. Butamax is a limited liability corporation organized and existing under the laws of the state of Delaware, with its principal place of business in Wilmington, Delaware. Butamax is jointly owned by DuPont and B.P. p.l.c. (“BP”).
3. DuPont is a corporation organized and existing under the laws of the state of Delaware, with its principal place of business in Wilmington, Delaware.
4. On information and belief, Butamax was formed in July 2009 for the purpose of commercializing technology that BP and DuPont have been jointly developing since 2004.

5. On information and belief, individuals employed by DuPont engage in research and development activities related to the subject matter of this action.

6. On information and belief, Butamax engages in research and development related to the subject matter of this action using facilities located in the DuPont Experimental Station located in Wilmington, Delaware.

7. On information and belief, DuPont directs Butamax to engage in research and development activities related to the subject matter of this action, and controls the manner in which these activities are performed.

#### **JURISDICTION AND VENUE**

8. This action arises under the Declaratory Judgment Act and the patent laws of the United States, including Title 35, United States Code. This court has jurisdiction over the subject matter of this action under 28 U.S.C. §§ 1331, 1338(a), 2201 and 2202.

9. This court has personal jurisdiction over Butamax because Butamax is Delaware limited liability company and has committed acts within Delaware and this judicial district which give rise to this action, including ongoing research and development activities related to the subject matter of this complaint. Butamax maintains continuous and systematic contacts with the forum such that the exercise of jurisdiction over Butamax would not offend traditional notions of fair play and substantial justice.

10. This court has personal jurisdiction over DuPont because DuPont is incorporated in Delaware and has committed acts within Delaware and this judicial district which give rise to this action, including ongoing research and development activities related to the subject matter of this complaint. DuPont maintains continuous and systematic contacts with the forum such that

the exercise of jurisdiction over DuPont would not offend traditional notions of fair play and substantial justice.

11. Venue is proper in this judicial district under 28 U.S.C. §§ 1391(b) and 1400(b).

### **THE PATENTS-IN-SUIT**

12. On April 10, 2012, United States Patent No. 8,153,415 (“the ‘415 Patent”) entitled “Reduced By-Product Accumulation for Improved Production of Isobutanol” issued to Thomas Buelter, Andrew Hawkins, Stephanie Porter-Scheinman, Peter Meinhold, Catherine Asleson Dundon, Aristos Aristidou, Jun Urano, Doug Lies, Matthew Peters, Melissa Dey, Justas Jancauskas, Julie Kelly, and Ruth Berry. A true and correct copy of the ‘415 Patent is attached hereto as Exhibit 1. The entire right, title, and interest to the ‘415 Patent has been assigned to Gevo. Gevo is the owner and possessor of all rights pertaining to the ‘415 Patent.

13. On August 18, 2011, United States Patent Publication No. US 2011/ 0201073 (the “‘073 Publication”) was published. A true and correct copy of the ‘073 Publication is attached hereto as Exhibit 2. The application of the ‘073 Publication issued as the ‘415 Patent, and the ‘073 Publication includes claims that are substantially identical to claims of the ‘415 Patent.

14. The ‘415 Patent discloses and claims recombinant isobutanol-producing microorganisms containing disruptions in both endogenous 3-keto acid reductase activity and endogenous aldehyde dehydrogenase activity, and methods for producing isobutanol using such organisms. Gevo has found that disruption of aldehyde dehydrogenase activity is important to converting glucose to isobutanol with an acceptable yield and creating suitable distiller’s grains (a by-product of the biological production of isobutanol that may be used in animal feed). Gevo has also found that disruption of 3-keto acid reductase activity is important to converting glucose to isobutanol with an acceptable yield.

15. The first independent claim of the '415 Patent claims this invention as follows:

1. A recombinant microorganism comprising:

- (a) an isobutanol producing metabolic pathway, wherein said isobutanol producing metabolic pathway comprises at least one exogenous gene or at least one overexpressed endogenous gene encoding an enzyme that catalyzes a pathway step in the conversion of pyruvate to isobutanol; and
- (b) at least one modification which disrupts the expression or activity of an endogenous enzyme having 3-keto acid reductase activity, wherein said modification is selected from the group consisting of:
  - I. a mutation of an endogenous gene encoding said endogenous enzyme having 3-keto acid reductase activity; and
  - II. a mutation of a regulatory element associated with an endogenous gene encoding said endogenous enzyme having 3-keto acid reductase activity;  
wherein said endogenous enzyme having 3-keto acid reductase activity catalyzes the conversion of acetolactate to 2,3-dihydroxy-2-methylbutanoic acid (DH2MB);
- (c) at least one modification which disrupts the expression or activity of an endogenous enzyme having aldehyde dehydrogenase activity, wherein said modification is selected from the group consisting of:
  - I. a mutation of an endogenous gene encoding said endogenous enzyme having aldehyde dehydrogenase activity; and
  - II. a mutation of a regulatory element associated with an endogenous gene encoding said endogenous enzyme having aldehyde dehydrogenase activity;  
wherein said endogenous enzyme having aldehyde dehydrogenase activity catalyzes the conversion of isobutyraldehyde to isobutyrate.

16. On information and belief, Butamax and/or DuPont make isobutanol-producing yeast containing a disruption in endogenous 3-keto acid reductase activity by deleting the YMR226c gene and endogenous aldehyde dehydrogenase activity by deleting the ALD6 gene, and use such yeast to produce isobutanol.

17. Examples of the efforts of Butamax and DuPont in this area are described in at least PCT Publication Nos. WO/2011/159853 (the "853 application"), WO/2011/159894 (the "894 application") and WO/2011/159998 (the "998 application"), which, on information and

belief, were filed by Butamax and list inventors who are affiliated with DuPont. For instance, the '853 application describes creating recombinant *Saccharomyces cerevisiae* yeast "host cells comprising a butanol biosynthetic pathway such as an isobutanol biosynthetic pathway [which] may further comprise one or more additional modifications." See '853 application at ¶¶ 0187. Examples of Butamax and/or DuPont's modifications to a single recombinant yeast cell include:

a) deletion of the YMR226c gene, which encodes an enzyme endogenous to *S. cerevisiae* yeast having 3-keto acid reductase activity, and specifically catalyzes the conversion of acetolactate to 2,3-dihydroxy-2-methylbutanoic acid (DH2MB), see *id.* at ¶¶ 0187 and 0265; '894 application at ¶ 0093; '889 application at ¶ 0226, and

b) deletion of the ALD6 gene, which encodes an enzyme endogenous to *S. cerevisiae* yeast having aldehyde dehydrogenase activity, and specifically catalyzes the conversion of isobutyraldehyde to isobutyrate, see '853 application at ¶¶ 0187 and 0265; '894 application at ¶ 0093; '889 application at ¶ 0226.

**COUNT I**  
**Infringement of the '415 Patent**  
**Against Butamax and DuPont**

18. Gevo incorporates by reference the allegations set forth in paragraphs 1-17 of this Complaint.

19. On information and belief, Butamax has directly and/or indirectly infringed, and is directly or indirectly infringing, either literally or under the doctrine of equivalents, one or more claims of the '415 Patent by performing and/or directing others to perform the methods described in paragraphs 16 and 17 without Gevo's authorization. Gevo believes it will develop further evidence for this allegation after a reasonable opportunity for further investigation and

discovery. On information and belief, Butamax's infringement pursuant to 35 U.S.C. § 271 will continue unless Butamax's conduct is enjoined.

20. On information and belief, DuPont has directly and/or indirectly infringed, and is directly or indirectly infringing, either literally or under the doctrine of equivalents, one or more claims of the '415 Patent by performing and/or directing others to perform the methods described in paragraphs 16 and 17 without Gevo's authorization. Gevo believes it will develop further evidence for this allegation after a reasonable opportunity for further investigation and discovery. On information and belief, DuPont's infringement pursuant to 35 U.S.C. § 271 will continue unless DuPont's conduct is enjoined.

21. On information and belief, Butamax and/or DuPont's infringing activities have already occurred and will continue unless enjoined by this Court. Butamax and/or DuPont's infringement of the '415 Patent causes harm to Gevo. Thus, a real and substantial controversy exists between Gevo, on one hand, and Butamax and DuPont on the other.

22. As a result of Butamax's and/or DuPont's infringement of the '415 Patent, Gevo has suffered irreparable harm for which Gevo has no adequate remedy at law.

**COUNT II**  
**Infringement of Gevo's Provisional Rights in the '415 Patent**  
**Against Butamax and DuPont**

23. Gevo incorporates by reference the allegations set forth in paragraphs 1-22 of this Complaint.

24. On information and belief, Butamax and/or DuPont had actual knowledge of the '073 Publication, its specification and claims.

25. On information and belief, pursuant to 35 U.S.C. § 154(d), Butamax has directly and/or indirectly infringed, and is directly or indirectly infringing, either literally or under the

doctrine of equivalents, Gevo's provisional patent rights in one or more of the claims of the '415 Patent by performing and/or directing others to perform the methods described in paragraphs 16 and 17 without Gevo's authorization. Gevo believes it will develop further evidence for this allegation after a reasonable opportunity for further investigation and discovery.

26. On information and belief, pursuant to 35 U.S.C. § 154(d), DuPont has directly and/or indirectly infringed, and is directly or indirectly infringing, either literally or under the doctrine of equivalents, Gevo's provisional patent rights in one or more of the claims of the '415 Patent by performing and/or directing others to perform the methods described in paragraphs 16 and 17 without Gevo's authorization. Gevo believes it will develop further evidence for this allegation after a reasonable opportunity for further investigation and discovery.

27. Butamax and/or DuPont's infringement of Gevo's provisional rights in the claims of the '415 Patent harmed Gevo. Thus, a real and substantial controversy exists between Gevo, on one hand, and Butamax and DuPont on the other.

28. As a result of Butamax's and/or DuPont's infringement of Gevo's provisional rights in the claims of the '415 Patent, Gevo is entitled to recover a reasonable royalty pursuant to 35 U.S.C. § 154(d)(1).

### **PRAYER FOR RELIEF**

WHEREFORE, Gevo respectfully requests the following relief:

a) That judgment be entered declaring that Butamax and/or DuPont has/have infringed one or more claims of the '415 Patent, and Gevo's provisional rights in those claims, by without Gevo's authorization making isobutanol-producing yeast containing a disruption in both endogenous 3-keto acid reductase activity by deleting the YMR226c gene and endogenous

aldehyde dehydrogenase activity by deleting the ALD6 gene, using such yeast to produce isobutanol and/or by importing isobutanol that has been manufactured in that manner.

b) That judgment be entered declaring that Butamax and/or DuPont have induced others to infringe one or more of the claims of the '415 Patent, and Gevo's provisional rights in those claims, by without Gevo's authorization assisting, abetting, and encouraging others to make isobutanol-producing yeast containing a disruption in both endogenous 3-keto acid reductase activity by deleting the YMR226c gene and endogenous aldehyde dehydrogenase activity by deleting the ALD6 gene, use such yeast to produce isobutanol and/or import isobutanol that has been manufactured in that manner.

c) That this Court adjudge and decree that Butamax and/or DuPont infringe the '415 Patent.

d) That this Court adjudge and decree that Butamax and/or DuPont infringed Gevo's provisional rights in the claims of the '415 Patent.

e) That this Court adjudge and decree that Butamax and/or DuPont induce others to infringe the '415 Patent.

f) That this Court adjudge and decree that Butamax and/or DuPont have induced others to infringe Gevo's provisional rights in the claims of the '415 Patent.

g) That this Court enter an order that Butamax and/or DuPont and their officers, agents, servants, employees, successors and assigns, and those persons acting in concert with them, be preliminarily and permanently enjoined from infringing the '415 Patent.

h) That this Court enter an order that Butamax and/or DuPont and their officers, agents, servants, employees, successors and assigns, and those persons acting in concert with



them, be preliminarily and permanently enjoined from inducing others to infringe the '415 Patent.

i) That this Court award damages to Gevo to compensate it for each of the unlawful actions set forth in the Complaint.

j) That this Court award interest on such damages to Gevo.

k) That this Court determine that this patent infringement case is exceptional and award Gevo its expenses including its attorneys' fees incurred in this action pursuant to 35 U.S.C. § 285.

l) That interests, costs and expenses be awarded in favor Gevo.

m) That this Court order such other and further relief as the Court may deem just and proper.

#### **DEMAND FOR JURY TRIAL**

Gevo respectfully requests a trial by jury on all issues triable thereby.

MORRIS, NICHOLS, ARSHT & TUNNELL LLP

*/s/ Thomas C. Grimm*

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April 10, 2012  
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