

United States District Court,  
D. Delaware.

**UNION CARBIDE CHEMS. & PLASTICS TECH. CORP. and UNION CARBIDE CORP ., Plaintiff,**  
Counter-Defendant.

v.

**SHELL OIL CO., Shell Chemical Co., and Cri Catalyst Co., Defendants,**  
Counter-Plaintiffs.

**SHELL OIL CO,**  
Plaintiff.

v.

**UNION CARBIDE CHEMS. & PLASTICS TECH. CORP. and Union Carbide Corp ,**  
Defendants.

No. CIV.A. 99-CV-274-SLR, CIV.A. 99-846-SLR

**Jan. 16, 2001.**

## **ORDER**

**ROBINSON, District J.**

At Wilmington this 16th day of January, 2001, having heard oral argument and having reviewed papers submitted in connection therewith;

IT IS ORDERED that the disputed claim language in the '343 and '481 patents, as identified by the above referenced parties, shall be construed as follows, consistent with the tenets of claim construction set forth by the United States Court of Appeals for the Federal Circuit:

1. "Salt." A compound that contains a positively charged component (cation) and a negatively charged component (anion), other than a hydrogen or hydroxyl ion, and is not an oxide. FN1

FN1. In a solution, the cations and anions are disassociated. On a finished catalyst, the cations and anions are chemically bonded. The issue of whether salt on the finished catalyst must be in the form of a crystalline structure will be resolved after the close of evidence in the jury instructions.

2. "Groups 3b through 7b inclusive." This includes, in addition to scandium (Sc) (atomic number 21), yttrium (Y) (atomic number 39), and lanthanum (La) (atomic number 57), the fourteen elements with atomic numbers 58 through 71, from cerium (Ce) (atomic number 58) through lutetium (Lu) (atomic number 71), as provided by the Periodic Table of Elements.

IT IS FURTHER ORDERED that the disputed claim language in the '243 patent shall be construed as follows:

1. "[T]he [inventive] catalyst ... contains a combination of (a) cesium in a second amount and (b) at least one other alkali metal selected from the group consisting of lithium, sodium, potassium and rubidium in a third amount, which combination comprises (a) and (b) in amounts in relation to the amount of silver in the catalyst sufficient to provide an efficiency of ethylene oxide manufacture that is greater than the efficiencies obtainable in the same ethylene oxide production system, including the same conversions, than (i) a second catalyst containing silver in the first amount and cesium in the second amount, and (ii) a third catalyst containing silver in the first amount and the alkali metal in the third amount ...." Because "[t]he catalysts of the invention are not ... restricted to binary combinations of alkali metals," (col. 8, lines 44-55; col. 30, lines 1-7), the third catalyst (in order to be a comparable catalyst) must contain the same "other alkali metal[s]" in the same (third) amount as the inventive catalyst. ( *See* col. 23, Table VI)

2. "[T]he combination of silver, cesium and other alkali metal in said catalyst is characterizable by an efficiency equation." The word "characterize" is used interchangeably with the word "determine." ( *See, e.g.*, col. 3, lines 37-8; JTX 7-0169-0176; 0336-0360) Therefore, the phrase shall be construed to mean that the synergistic combinations are determined from the efficiency equation.

3. "The same ethylene oxide production system." The file wrapper and patent describe an experimental procedure whereby, once "the conditions and parameters" for a particular ethylene oxide production system are defined, a composite design set of experiments are carried out from which the efficiency equation is obtained from which the synergistic combinations are determinable. ( *See, e.g.*, JTX 7-0176) Therefore, the phrase "same ethylene oxide production system" is construed to mean the laboratory or experimental "conditions and parameters" which define the ethylene oxide production system which ultimately will be used commercially.

4. The improved catalyst is not limited to catalysts containing combinations of alkali metals that are the same as or equivalent to the combinations of alkali metals in the specific example catalysts described in the specification.

D.Del.,2001.

Union Carbide Chems. & Plastics Tech. Corp. v. Shell Oil Co.

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