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[US/US]; 200 East Randolph Drive, MC 2207A, Chicago,
IL 60601 (US).(72) Inventors: HEPFER, Robert, P.; 406 Hunt Club Drive,
St. Charles, IL 60174 (US). MILLER, Craig, T.;
1243 Halladay Drive, Batavia, IL 60510 (US). ATTIG,
Thomas, G.; 507 Pottawatomie Trail, Batavia, IL 60510
(US). NORENBURG, Gregory, A.; 4888 Century Oak
Circle, Medina, Ohio 44256 (US). BUDGE, John, R.;
2565 Edgewood Road, Beachwood, OH 44122 (US).(74) Agent: YUSKO, David, P.; BP America Inc., BP Legal,
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(54) Title: TWO-STAGE PROCESS FOR THE HYDROGENATION OF MALEIC ACID TO 1,4-BUTANEDIOL

(57) Abstract: In the process for the conversion of maleic acid to gamma-butyrolactone, 1,4-butanediol and/or tetrahydrofuran, a feedstream comprising maleic acid is hydrogenated in a first hydrogenation zone to produce a reaction product comprising succinic acid and unreacted hydrogen which is then supplied to a second hydrogenation zone, where succinic acid is converted to 1,4-butanediol, the temperatures of the feedstream comprising maleic acid and the first hydrogenation zone are controlled such that the temperature of maleic acid in the feedstream and the first hydrogenation zone does not exceed about 130 °C, thereby minimizing the corrosive effects of the maleic acid and prolonging reactor life and improving overall process economics.