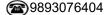


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J. Chemtracks 21(1&2) 111-114, 2019

19 Abstracted / Indexed in CDS A division of the American Chemical Society Chemical Abstract U.S.A. ISSN 0975-2017 CODEN:JCOHF7 IMPACT FACTOR : 4.950

Kinetics and thermodynamic study of mechanistic oxidation of some nitrogenous compounds by selenium dioxide

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Manuscript received online 25 November 2018, accepted on 30 July 2019

Abstract: Kinetic study of mechanistic oxidation of p-ethylaniline and benzylamine by selenium dioxide reaction in aqueous acetic acid medium is first-order each in [substrate] and [oxidant]. Presence of mineral acid catalyses the reaction rate. Primary salt effect is negligible. Increase in percentage of acetic acid in the reaction medium increases the reaction rate. A suitable mechanism has been suggested with the kinetic result have been proposed.

(Key words : Resolutions involvement. consistent. composition, deterioration)

Introduction

Selenium dioxide is a mild oxidant¹ Kinetic of oxidation of ethyl acetoacetate by hexacyanoferrate (III)² and Ce (IV)³ have already heen reported. In this note we report the kinetics or oxidation of some nitrogenous compound by selenium dioxide in aqueous acetic acid. Selenium dioxide (SeO₂) oxidation shows that it has been used as an oxidising agent to oxidiseketones,⁴⁵ aldehydes,⁶ esters,^{7,8} acids,⁹ olifines,¹⁰⁻¹² alcohols,^{13,14} kinetically as well as in chemical synthesis of 3α -hydroxy- 5α -cholet-8(14), 16diene-15-one. The oxidative nature of aromatic hydroxy acid has also been examined by selenium dioxide.¹⁵

Experimental Material and Methods

Kinetic investigation of some nitrogenous compounds by selenium dioxide, acetic acid water medium in resonance of sulphuric

acid, different chemicals were used in th : form as solutions. Some nitrogenous compourd (Koch Light) and selenium dioxide (Loba) were used as such. Acetic acid (GRS Merck) was purif ed before use. The reaction was followed by estimating the unreacted selenium dioxide iodomet ically at regular time intervals.

Results and Discussion

The pseudo first-order rate constants were calculated from integrated f rst-order equation. The rate constants were rej roducible within 1-2%. The order of title reaction in both selenium dioxide and some nit ogenous compounds is one each. The rate of ovidation of some nitrogenous compounds i largely enhanced in the presence of added 11,SO, and HCIO₄. It has been experimentally ob erved that some nitrogenous compounds is not I ydrolysed either by H,SO₁ or HCIO₁ under the conditions employed. The added sodium aceta e slightly retards the rate of oxidation. The primar / salt effect studied by added K,SO4 is negligible. The increase in the percentage of acetic ac d increase the reaction rate. The various crivation parameters were computed from the rate study measurements carried out at fou different temperatures (the results are given in Table 2). A plot of log k vs. 1 ID is linear show ng thereby that Arrhenius equation is followed. The reaction is characterized by a low energy o activation giving a large negative value of entropy of activation.

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National Conference on Chemistry for Mankind

PP 30:

Biosynthesis in Air Temperature

Brijendra Singh¹ and Shivshankar Saket² Department of Chemistry, Govt. M.M. College, Kotma, (M.P.) Department of Chemistry, Govt. P.G. College, Amarpatan, Satna, (M.P.) singh.brijendra96@gmail.com

he chemists gets nearly all his precipitates from solutions and commonly too as a result of some combination into a new substance. The precipitation of the meteorologist on the country s not a new substance it all but the same old substance in a different state. That is liquid water su h as join as solid water as snow for instance, condensed from gaseous water. Some of the chen ists precipitate softly quickly. While other fall slowly and few take forever-and-a-day to come down. So it is also with the meteorologists precipitations. Large hailstones full with a speed ar 1 that is dagesous doizzle drops just doubled along and dew doesn't fall at all it is just said to fill.

here is a tendency on the part of many meteorologists to confine the term precipitation to only hat water, liquid or solid which after dropping out of the clouds actually reaches the earth in ts broader uses however it includes as explained all natural condensates from gaseous water to liquid or solid waste it is have used in more comprehensive sense. One of the most interesting and in some respects an exceedingly important from of precipitation in fog a great swarm-1 ke assemblage in the instance air of hundreds of thousands of droplets per cubic inch so minute 1 hat it would take more of them to make a teaspoonful of water it is a surface clouds whose n y said droplets have formed on condensation nuclei such as tater microscopic particles of sea sa t, incident to the cooling of the air below its down point.

PP 31:

Chemical and analytical procedure of power plant

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invironment Management, Occupational Health and Safety Systems: NTPC has actively gone for adoption of best international practices on environment, occupational health and safe y areas. The organization has pursued the Environmental Management System (EMS) ISO 14(01 and the Occupational Health and Safety Assessment System OHSAS 18001 at its different establishments. As a result of pursing these practices, all NTPC power stations have been certified for ISO 14001 & OHSAS 18001 by reputed national and international Certifying Agencies. Pollution Control Systems While deciding the appropriate technology for its projects, NTPC integrates many environmental provisions into the plant design.

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