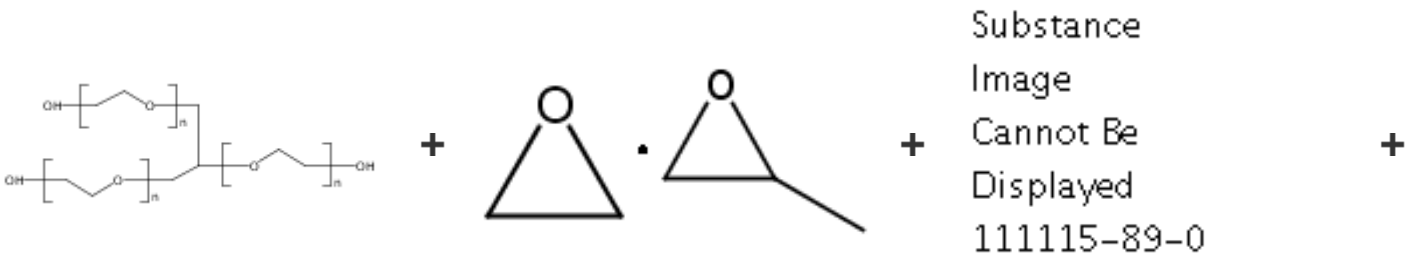
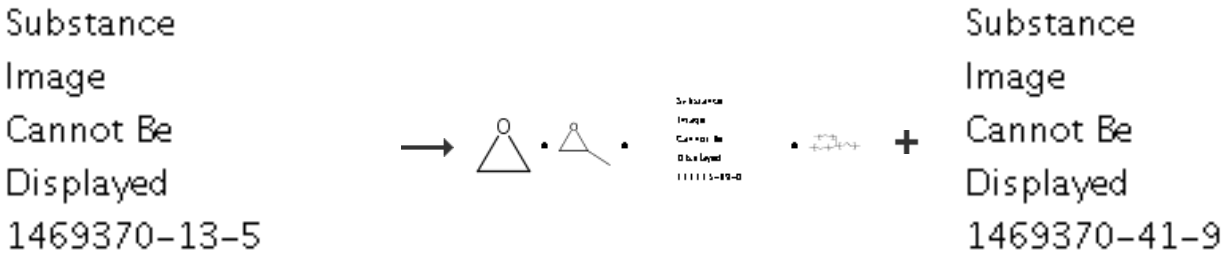
1. Single Step





Overview

Steps/Stages

1.1 C:Bu_2Sn dilaurate, C:947-19-3, C:7473-98-5, 1 h, 60°C

Notes

photochemical, UV irradiation (1000mJ/cm2) prior to heat treatment, Reactants: 4, Catalysts: 3, Steps: 1, Stages: 1, Most stages in any one step: 1

References

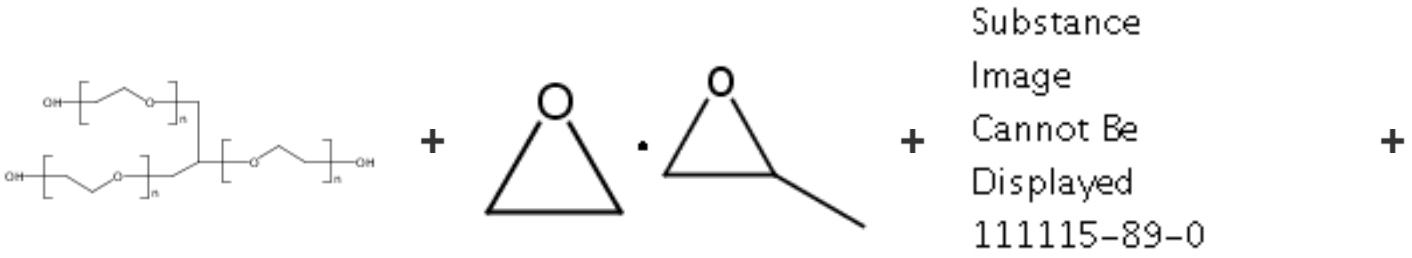
Adhesive compositions for optical parts and cured products thereof

By Nakamura, Satoshi and Morozumi, Yasutaka

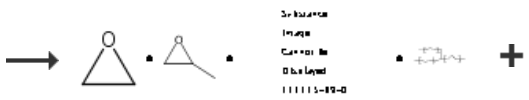
From Jpn. Kokai Tokkyo Koho, 2013213175, 17 Oct 2013

CASREACT ®: Copyright © 2016 American Chemical Society. All Rights Reserved. CASREACT contains reactions from CAS and from: ZIC/VINITI database (1974-1999) provided by InfoChem; INPI data prior to 1986; Biotransformations database compiled under the direction of Professor Dr. Klaus Kieslich; organic reactions, portions copyright 1996-2006 John Wiley & Sons, Ltd., John Wiley and Sons, Inc., Organic Reactions Inc., and Organic Syntheses Inc. Reproduced under license. All Rights Reserved.

2. Single Step



Substance Image Cannot Be Displayed 1469369-90-1



Substance Image Cannot Be Displayed 1469370-40-8

Overview

Steps/Stages

1.1 C:Bu_2Sn dilaurate, C:947-19-3, C:7473-98-5, 1 h, 60°C

Notes

photochemical, UV irradiation (1000mJ/cm2) prior to heat treatment, Reactants: 4, Catalysts: 3, Steps: 1, Stages: 1, Most stages in any one step: 1

References

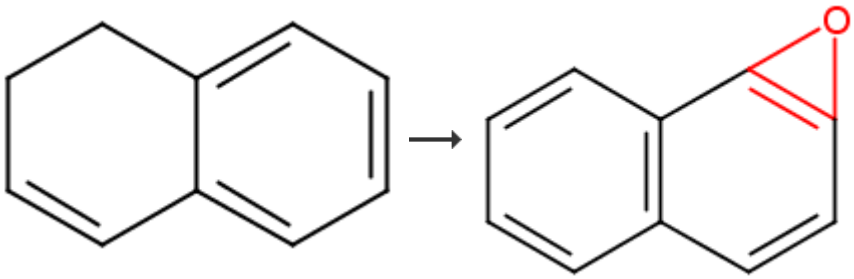
Adhesive compositions for optical parts and cured products thereof

By Nakamura, Satoshi and Morozumi, Yasutaka

From Jpn. Kokai Tokkyo Koho, 2013213175, 17 Oct 2013

CASREACT ®: Copyright © 2016 American Chemical Society. All Rights Reserved. CASREACT contains reactions from CAS and from: ZIC/VINITI database (1974-1999) provided by InfoChem; INPI data prior to 1986; Biotransformations database compiled under the direction of Professor Dr. Klaus Kieslich; organic reactions, portions copyright 1996-2006 John Wiley & Sons, Ltd., John Wiley and Sons, Inc., Organic Reactions Inc., and Organic Syntheses Inc. Reproduced under license. All Rights Reserved.

3. Single Step

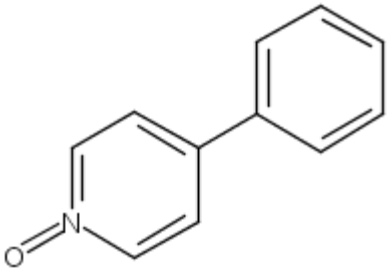


42%

Overview

Steps/Stages

1.1 R:



R:NaOCl, C:216241-44-0 polymer-supported, S:CH_2Cl_2

Notes

Reactants: 1, Reagents: 2, Catalysts: 1, Solvents: 1, Steps: 1, Stages: 1, Most stages in any one step: 1

References

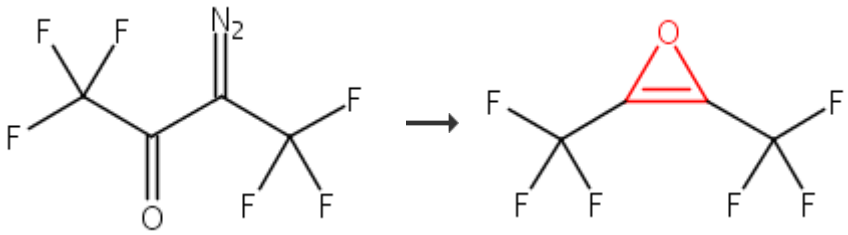
Synthesis and Characterization of a Polymer-Supported Salen Ligand for Enantioselective Epoxidation

By Angelino, Mark D. and Laibinis, Paul E.

From Macromolecules, 31(22), 7581-7587; 1998

CASREACT ®: Copyright © 2016 American Chemical Society. All Rights Reserved. CASREACT contains reactions from CAS and from: ZIC/VINITI database (1974-1999) provided by InfoChem; INPI data prior to 1986; Biotransformations database compiled under the direction of Professor Dr. Klaus Kieslich; organic reactions, portions copyright 1996-2006 John Wiley & Sons, Ltd., John Wiley and Sons, Inc., Organic Reactions Inc., and Organic Syntheses Inc. Reproduced under license. All Rights Reserved.

4. Single Step



Overview

Steps/Stages

1.1

Notes

Reactants: 1, Steps: 1, Stages: 1, Most stages in any one step: 1

References

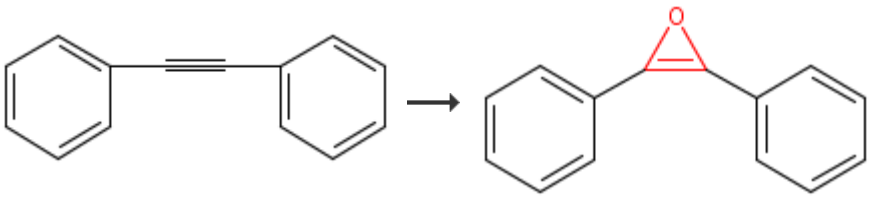
Argon-matrix isolation of bis(trifluoromethyl)oxirene, perfluoromethylethyloxirene, and their isomeric ketocarbenes

By Torres, M. et al

From Journal of the American Chemical Society, 105(6), 1698-700; 1983

CASREACT ®: Copyright © 2016 American Chemical Society. All Rights Reserved. CASREACT contains reactions from CAS and from: ZIC/VINITI database (1974-1999) provided by InfoChem; INPI data prior to 1986; Biotransformations database compiled under the direction of Professor Dr. Klaus Kieslich; organic reactions, portions copyright 1996-2006 John Wiley & Sons, Ltd., John Wiley and Sons, Inc., Organic Reactions Inc., and Organic Syntheses Inc. Reproduced under license. All Rights Reserved.

5. Single Step



46%

Overview

Steps/Stages

1.1 R:Polysorb 1 (2-oxopropylated, 2-hydroxy-2-methylpropyla), S:THF, 12 h, rt

1.2 R:H_2SO_4, S:H_2O, 0°C; 10 min, 0°C

1.3 R:H_2O_2, S:H_2O, 10 h, rt

1.4 S:Dioxane, 36 h, 70°C

Notes

solid-supported reagent, Reactants: 1, Reagents: 3, Solvents: 3, Steps: 1, Stages: 4, Most stages in any one step: 4

References

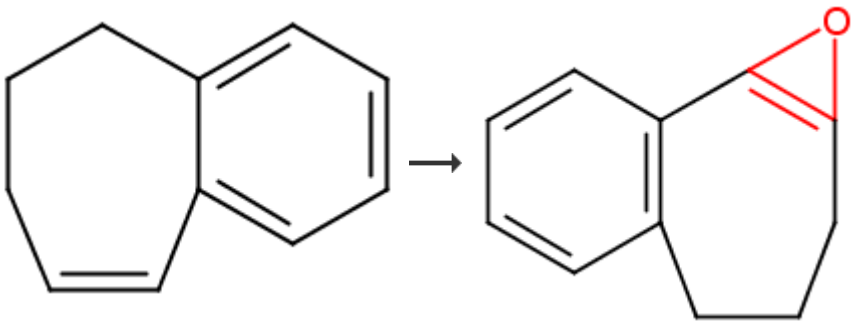
Epoxidation and oxidation reactions using divinylbenzene crosslinked polystyrene supported tert-butyl hydroperoxide

By Sheela, M. S. and Sreekumar, K.

From Indian Journal of Chemistry, Section B: Organic Chemistry Including Medicinal Chemistry, 45B(4), 943-950; 2006

CASREACT ®: Copyright © 2016 American Chemical Society. All Rights Reserved. CASREACT contains reactions from CAS and from: ZIC/VINITI database (1974-1999) provided by InfoChem; INPI data prior to 1986; Biotransformations database compiled under the direction of Professor Dr. Klaus Kieslich; organic reactions, portions copyright 1996-2006 John Wiley & Sons, Ltd., John Wiley and Sons, Inc., Organic Reactions Inc., and Organic Syntheses Inc. Reproduced under license. All Rights Reserved.

6. Single Step



71%

Overview

Steps/Stages

1.1 R:mCPBA, S:CH_2Cl_2

Notes

Reactants: 1, Reagents: 1, Solvents: 1, Steps: 1, Stages: 1, Most stages in any one step: 1

References

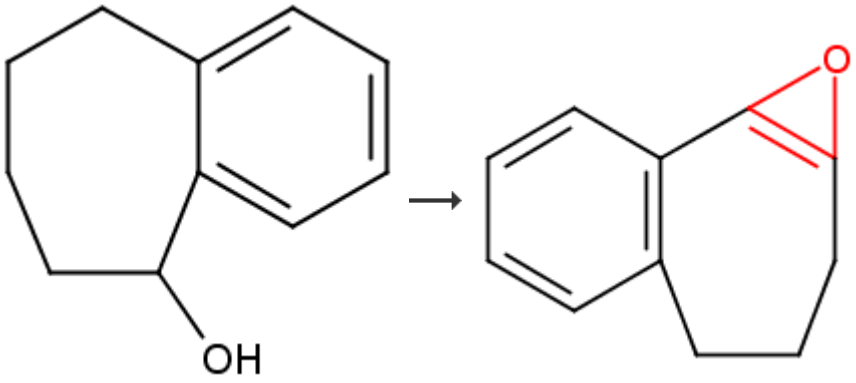
Structural effects on the rates of formation and the stability of enols of cyclic benzyl ketones

By Eldin, Sherif et al

From Journal of the American Chemical Society, 113(4), 1344-9; 1991

CASREACT ®: Copyright © 2016 American Chemical Society. All Rights Reserved. CASREACT contains reactions from CAS and from: ZIC/VINITI database (1974-1999) provided by InfoChem; INPI data prior to 1986; Biotransformations database compiled under the direction of Professor Dr. Klaus Kieslich; organic reactions, portions copyright 1996-2006 John Wiley & Sons, Ltd., John Wiley and Sons, Inc., Organic Reactions Inc., and Organic Syntheses Inc. Reproduced under license. All Rights Reserved.

7. 2 Steps



Overview

Steps/Stages

Notes

1.1 R:EtOH, S:Benzene

2.1 R:mCPBA, S:CH_2Cl_2

Reactants: 1, Reagents: 2, Solvents: 2, Steps: 2, Stages: 2, Most stages in any one step: 1

References

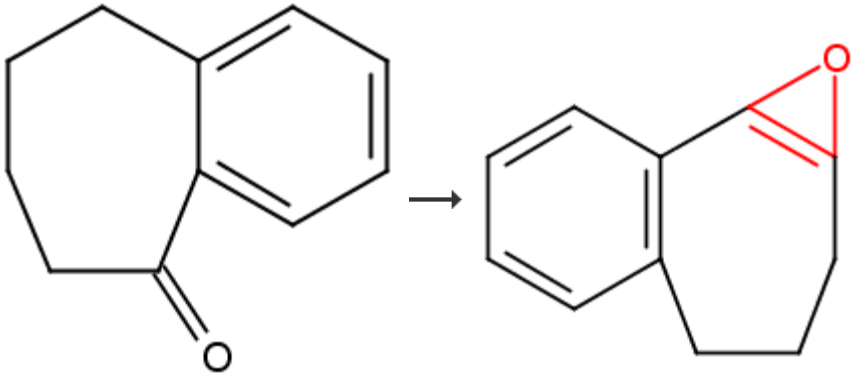
Structural effects on the rates of formation and the stability of enols of cyclic benzyl ketones

By Eldin, Sherif et al

From Journal of the American Chemical Society, 113(4), 1344-9; 1991

CASREACT ®: Copyright © 2016 American Chemical Society. All Rights Reserved. CASREACT contains reactions from CAS and from: ZIC/VINITI database (1974-1999) provided by InfoChem; INPI data prior to 1986; Biotransformations database compiled under the direction of Professor Dr. Klaus Kieslich; organic reactions, portions copyright 1996-2006 John Wiley & Sons, Ltd., John Wiley and Sons, Inc., Organic Reactions Inc., and Organic Syntheses Inc. Reproduced under license. All Rights Reserved.

8. 3 Steps



Overview

Steps/Stages

Notes

1.1 R:$NaBH_4$, S:EtOH

2.1 R:EtOH, S:Benzene

3.1 R:mCPBA, S:CH_2Cl_2

Reactants: 1, Reagents: 3, Solvents: 3, Steps: 3, Stages: 3, Most stages in any one step: 1

References

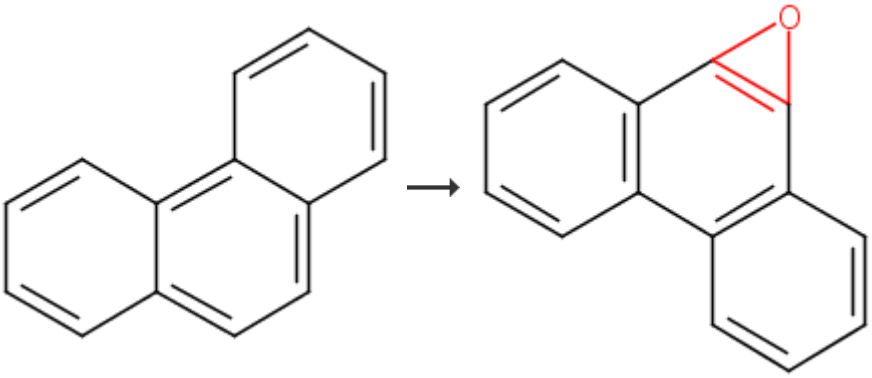
Structural effects on the rates of formation and the stability of enols of cyclic benzyl ketones

By Eldin, Sherif et al

From Journal of the American Chemical Society, 113(4), 1344-9; 1991

CASREACT ®: Copyright © 2016 American Chemical Society. All Rights Reserved. CASREACT contains reactions from CAS and from: ZIC/VINITI database (1974-1999) provided by InfoChem; INPI data prior to 1986; Biotransformations database compiled under the direction of Professor Dr. Klaus Kieslich; organic reactions, portions copyright 1996-2006 John Wiley & Sons, Ltd., John Wiley and Sons, Inc., Organic Reactions Inc., and Organic Syntheses Inc. Reproduced under license. All Rights Reserved.

9. Single Step



Overview

Steps/Stages

1.1 R:NaOCl, R:Bu_4N^+ •Br^-, S:$CHCl_3$, pH 8-9

Notes

Epoxidation, Reactants: 1, Reagents: 2, Solvents: 1, Steps: 1, Stages: 1, Most stages in any one step: 1

References

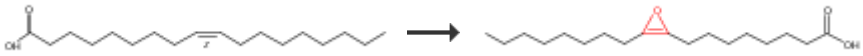
Sodium Hypochlorite

By Galvin, Jennifer M. et al

From e-EROS Encyclopedia of Reagents for Organic Synthesis, , No pp. given; 2001

CASREACT ®: Copyright © 2016 American Chemical Society. All Rights Reserved. CASREACT contains reactions from CAS and from: ZIC/VINITI database (1974-1999) provided by InfoChem; INPI data prior to 1986; Biotransformations database compiled under the direction of Professor Dr. Klaus Kieslich; organic reactions, portions copyright 1996-2006 John Wiley & Sons, Ltd., John Wiley and Sons, Inc., Organic Reactions Inc., and Organic Syntheses Inc. Reproduced under license. All Rights Reserved.

10. Single Step



97%

Overview

Steps/Stages

1.1 R:H_2O_2, C:Lipase nanoconjugates with polymers, C:691397-13-4 nanoconjugates with lipase, S:H_2O, S:PhMe, 24 h, 50°C

Notes

enzymic, biotransformation, optimization study, optimized on solvent, Reactants: 1, Reagents: 1, Catalysts: 2, Solvents: 2, Steps: 1, Stages: 1, Most stages in any one step: 1

References

Epoxidation of Fatty Acids by Pluronic-Conjugated Lipase in Organic Media

By Yuki, Oda et al

From Catalysis Letters, 146(6), 1073-1078; 2016

CASREACT ®: Copyright © 2016 American Chemical Society. All Rights Reserved. CASREACT contains reactions from CAS and from: ZIC/VINITI database (1974-1999) provided by InfoChem; INPI data prior to 1986; Biotransformations database compiled under the direction of Professor Dr. Klaus Kieslich; organic reactions, portions copyright 1996-2006 John Wiley & Sons, Ltd., John Wiley and Sons, Inc., Organic Reactions Inc., and Organic Syntheses Inc. Reproduced under license. All Rights Reserved.

11. Single Step

Overview

Steps/Stages

1.1 R:HCO_2H, R:H_2O_2, S:H_2O, 4°C; 2-5 h, rt

Notes

agitation (900 rpm), Reactants: 1, Reagents: 2, Solvents: 1, Steps: 1, Stages: 1, Most stages in any one step: 1

References

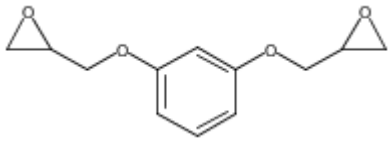
Synthesis, characterization and physicochemical properties of oleic acid ether derivatives as biolubricant basestocks

By Salimon, Jumat et al

From Journal of Oleo Science, 60(12), 613-618; 2011

CASREACT ®: Copyright © 2016 American Chemical Society. All Rights Reserved. CASREACT contains reactions from CAS and from: ZIC/VINITI database (1974-1999) provided by InfoChem; INPI data prior to 1986; Biotransformations database compiled under the direction of Professor Dr. Klaus Kieslich; organic reactions, portions copyright 1996-2006 John Wiley & Sons, Ltd., John Wiley and Sons, Inc., Organic Reactions Inc., and Organic Syntheses Inc. Reproduced under license. All Rights Reserved.

12. Single Step

Substance Image Cannot Be Displayed 363608-69-9 + Substance Image Cannot Be Displayed 135990-98-6 →  +

Substance Image Cannot Be Displayed 1185987-42-1

Overview

Steps/Stages

1.1 C:75980-60-8, 5 min

Notes

photochemical, LED lamp (2000mJ/cm2) used, silica used as filler, Reactants: 2, Catalysts: 1, Steps: 1, Stages: 1, Most stages in any one step: 1

References

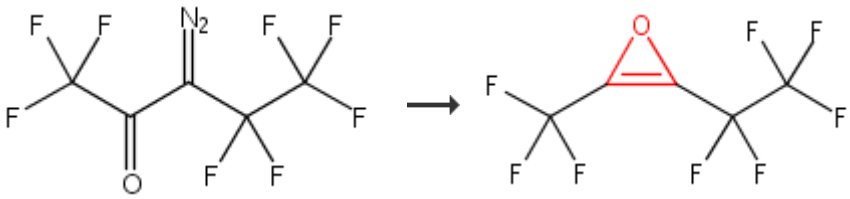
Connected structure with improved electric connection reliability, and its manufacture

By Mahara, Shigeo

From Jpn. Kokai Tokkyo Koho, 2014207224, 30 Oct 2014

CASREACT ®: Copyright © 2016 American Chemical Society. All Rights Reserved. CASREACT contains reactions from CAS and from: ZIC/VINITI database (1974-1999) provided by InfoChem; INPI data prior to 1986; Biotransformations database compiled under the direction of Professor Dr. Klaus Kieslich; organic reactions, portions copyright 1996-2006 John Wiley & Sons, Ltd., John Wiley and Sons, Inc., Organic Reactions Inc., and Organic Syntheses Inc. Reproduced under license. All Rights Reserved.

13. Single Step



Overview

Steps/Stages

1.1

Notes

Reactants: 1, Steps: 1, Stages: 1, Most stages in any one step: 1

References

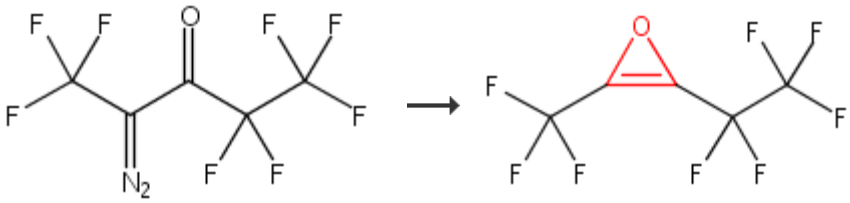
Argon-matrix isolation of bis(trifluoromethyl)oxirene, perfluoromethylethyloxirene, and their isomeric ketocarbenes

By Torres, M. et al

From Journal of the American Chemical Society, 105(6), 1698-700; 1983

CASREACT ®: Copyright © 2016 American Chemical Society. All Rights Reserved. CASREACT contains reactions from CAS and from: ZIC/VINITI database (1974-1999) provided by InfoChem; INPI data prior to 1986; Biotransformations database compiled under the direction of Professor Dr. Klaus Kieslich; organic reactions, portions copyright 1996-2006 John Wiley & Sons, Ltd., John Wiley and Sons, Inc., Organic Reactions Inc., and Organic Syntheses Inc. Reproduced under license. All Rights Reserved.

14. Single Step



Overview

Steps/Stages

1.1

Notes

Reactants: 1, Steps: 1, Stages: 1, Most stages in any one step: 1

References

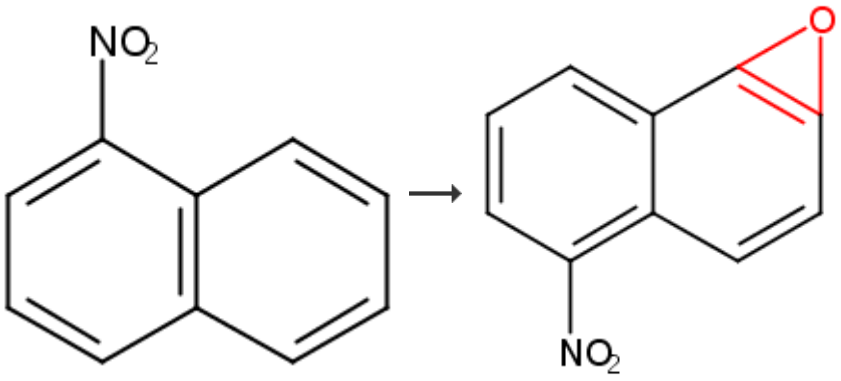
Argon-matrix isolation of bis(trifluoromethyl)oxirene, perfluoromethylethyloxirene, and their isomeric ketocarbenes

By Torres, M. et al

From Journal of the American Chemical Society, 105(6), 1698-700; 1983

CASREACT ®: Copyright © 2016 American Chemical Society. All Rights Reserved. CASREACT contains reactions from CAS and from: ZIC/VINITI database (1974-1999) provided by InfoChem; INPI data prior to 1986; Biotransformations database compiled under the direction of Professor Dr. Klaus Kieslich; organic reactions, portions copyright 1996-2006 John Wiley & Sons, Ltd., John Wiley and Sons, Inc., Organic Reactions Inc., and Organic Syntheses Inc. Reproduced under license. All Rights Reserved.

15. Single Step



reaction products with Cy3 and histidine,

Overview

Steps/Stages

1.1

Notes

transition metal alkykidene complexes used as catalyst, limited experimental detail, Reactants: 1, Steps: 1, Stages: 1, Most stages in any one step: 1

References

Preparation of fluorescent probe-based reactome array for detection, immobilization and isolation of enzymes

By Golyshin, Peter N. et al

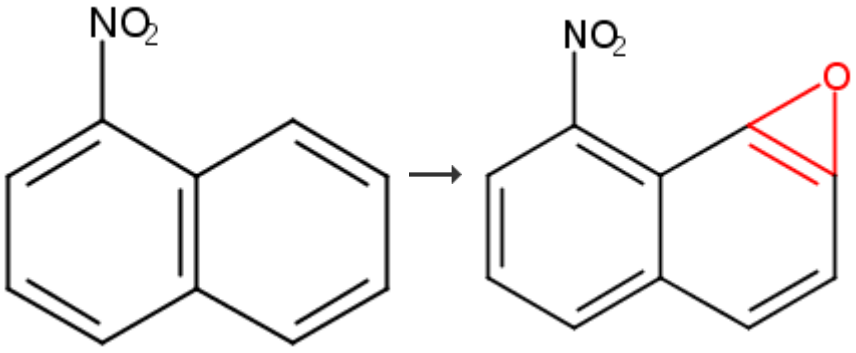
From PCT Int. Appl., 2010105851, 23 Sep 2010

Experimental Procedure

1-Nitronaphthalene-5,6-oxide. **FAB-HR[M+ H]$^+$ found**: 1268,467, **59Co-NMR(300 MHZ, CD_3CN)**: 9610

CASREACT ®: Copyright © 2016 American Chemical Society. All Rights Reserved. CASREACT contains reactions from CAS and from: ZIC/VINITI database (1974-1999) provided by InfoChem; INPI data prior to 1986; Biotransformations database compiled under the direction of Professor Dr. Klaus Kieslich; organic reactions, portions copyright 1996-2006 John Wiley & Sons, Ltd., John Wiley and Sons, Inc., Organic Reactions Inc., and Organic Syntheses Inc. Reproduced under license. All Rights Reserved.

16. Single Step



reaction products with Cy3 and histidine,

Overview

Steps/Stages

1.1

Notes

transition metal alkykidene complexes used as catalyst, limited experimental detail, Reactants: 1, Steps: 1, Stages: 1, Most stages in any one step: 1

References

Preparation of fluorescent probe-based reactome array for detection, immobilization and isolation of enzymes

By Golyshin, Peter N. et al

From PCT Int. Appl., 2010105851, 23 Sep 2010

Experimental Procedure

1-Nitronaphthalene-7,8-oxide. **FAB-HR[M+ H]$^+$ found**: 1268,467, **59Co-NMR(300 MHZ, CD_3CN)**: 6210

CASREACT ®: Copyright © 2016 American Chemical Society. All Rights Reserved. CASREACT contains reactions from CAS and from: ZIC/VINITI database (1974-1999) provided by InfoChem; INPI data prior to 1986; Biotransformations database compiled under the direction of Professor Dr. Klaus Kieslich; organic reactions, portions copyright 1996-2006 John Wiley & Sons, Ltd., John Wiley and Sons, Inc., Organic Reactions Inc., and Organic Syntheses Inc. Reproduced under license. All Rights Reserved.

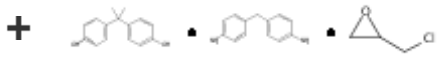
17. Single Step

Substance Image Cannot Be Displayed

402725-90-0

Substance Image Cannot Be Displayed

1125657-93-3



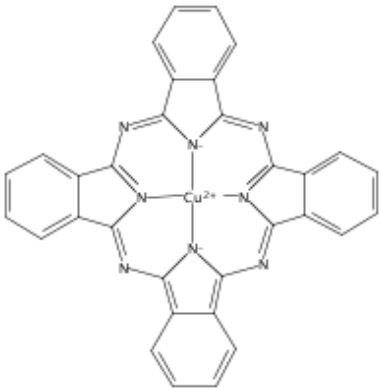
Overview

Steps/Stages

Notes

1.1 R:

R:



R:

Substance Image Cannot Be Displayed

603112-12-5

C:162881-26-7, S:1,3-Dioxolane, 10 min, 100°C

1.2 R:

C:162881-26-7, S:1,3-Dioxolane

Experimental Procedure

coated on PET film in stage 1, 405nm used in stage 2, photochemical in stage 2, Reactants: 3, Reagents: 3, Catalysts: 1, Solvents: 1, Steps: 1, Stages: 2, Most stages in any one step: 2

References

Photosensitive multilayer dry-resist films with excellent processability and fire resistance, printed circuit boards using them, and their manufacture

By Yamanaka, Toshio et al

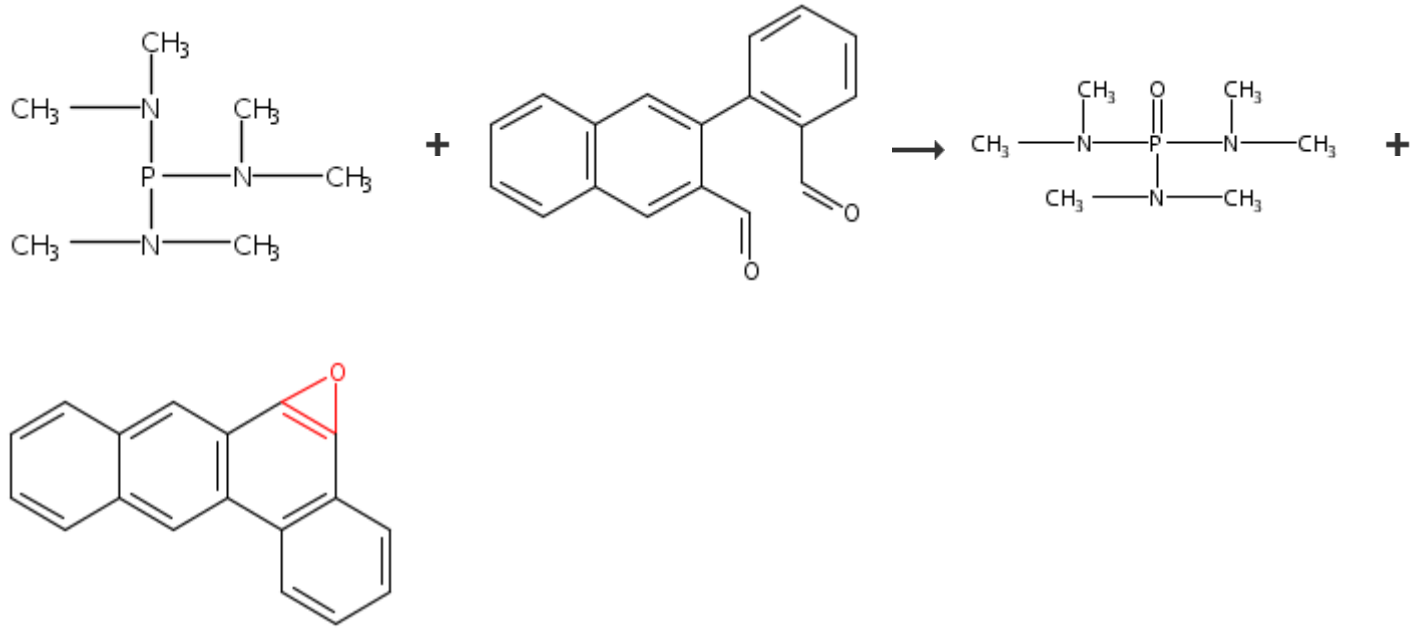
From Jpn. Kokai Tokkyo Koho, 2009048170, 05 Mar 2009

[Example] Hereinafter, the present invention will be described more specifically with reference to Examples and Comparative Examples. The present invention was not limited thereto. Preparation of the photosensitive resin composition, specific production of the photosensitive dry film resist and the evaluation of physical properties were carried out as follows. Also, the binder polymer used in the following Examples and Comparative Examples were prepared by the method shown in Synthesis Examples 1~10 below. <Preparation of photosensitive resin composition> First photosensitive layer resin composition, (A1) a binder polymer, (B1) (meth) acrylic compound, (C1) light reaction initiator, (D1) flame retardant, (E1) dyes and/or pigments, if necessary (F1) other components were mixed at a predetermined ratio and manufactured. Dioxolane with a solid content weight% (Sc) = 40% was added, the solution was uniformly dissolved and prepared as an organic solvent solution of the first photosensitive layer resin composition. Similarly, second photosensitive layer resin composition, (A2) a binder polymer, (B2) (meth) acrylic compound and preferably (C2) light reaction initiator, if necessary (F2) other components were mixed at a predetermined ratio and manufactured. Dioxolane with a solid content weight% (Sc) = 30% was added, the uniformly dissolved solution was prepared as an organic solvent solution of the second photosensitive layer resin composition. Here, the solid weight of a material other than an organic solvent, the total weight of (A), (B), (C), (D), (E) and the component (F) was shown. For example, in the case of the first photosensitive layer resin composition of (A1), (B1), (C1), (D1), and (E1) and (F1) component was the weight of the liquid materials other than the organic solvent. The liquid was assumed to be included in the weight as a solid content. <Production of the photosensitive dry film resist> The organic solvent solution of the first photosensitive layer resin composition mentioned above was applied to the support film so that the thickness after drying (photosensitive dry film resist having a thickness) was 20Mm. PET film (manufactured by Toray Industries, Inc. LUMIRROR, thickness 25Mm) was used as the support film. Then, the coating layer on the support film was dried under conditions of 100°C for 10 minutes. The organic solvent was removed. As a result, the sheets comprising a first photosensitive layer/PET film was obtained. Incidentally, the first photosensitive layer was in a B stage state. Then, the second photosensitive layer was allowed to form on the first surface of the photosensitive layer, forming a second photosensitive layer. The following direct coating method was carried out in the methods of two types of the transfer method. (Example 1) <Production of the photosensitive dry film resist> Components shown below were mixed, dioxolane in the solid weight% (Sc) = as 40% was added and dissolved uniformly. The organic solvent of the first photosensitive layer solution and an organic solvent solution of the second photosensitive layer were prepared. <Organic solvent solution of the first photosensitive layer> (A1) Binder polymer Vinyl polymer containing the carboxyl group (Daicel Cytec Co., Ltd., product name ACA320 weight average molecular weight of 25,000) 100 parts by weight (B1) (Meth)acrylic compound Bisphenol AEO-modified di(meth)acrylate (Daicel Cytec Co., Ltd., product name EB150) 20 parts by weight, bisphenol AEO-modified di(meth)acrylate (Hitachi Chemical Co., Ltd., product name FA321M) 20 parts by weight (C1) Light reaction initiator Bis(2,4,6-trimethylbenzoyl)phenyl phosphine oxide (manufactured by Ciba Specialty Chemicals Co., Ltd. Irgacure 819) 1 part by weight (D1) Flame retardants Resorcinol bis(di-2,6-xylenyl)phosphate (Daihachi Chemical Co., Ltd., product name PX-20030 parts by weight (E1) Dyes and/or pigments ORASOLBLUEGN (manufactured by Ciba Specialty Chemicals Co., Ltd.) 2 parts by weight <Organic solvent solution of the second photosensitive layer> (A2) Binder polymer Vinyl polymer containing carboxyl group (Daicel Cytec Co., Ltd., product name ACA320 weight average molecular weight of 25,000) 100 parts by weight (B2) (Meth)acrylic compound Pentaerythritol acrylate (Toagosei Co., Ltd., product name M305) 40 parts by weight (C2) Light reaction initiator An organic solvent solution of bis(2,4,6-trimethylbenzoyl)phenylphosphine oxide (manufactured by Ciba Specialty Chemicals Co., Ltd. Irgacure 819) 1 part by weight of the photosensitive resin composition of the above composition was prepared. Photosensitive dry film resist in a B-stage state of first photosensitive layer 20M thick, second photosensitive layer 5M thick was prepared by the transfer method. Results of evaluation of the physical properties of the resultant photosensitive dry film resist was as follows. Alkali solubility: Dissolved in 30 seconds in 1 wt% aqueous solution of sodium carbonate. [Example 4] <Production of the photosensitive dry film resist> Components shown below were mixed. Dioxolan was added so as to make the solid weight% (Sc) =40% and then uniformly dissolved. The organic solvent solution of the first photosensitive layer and the organic solvent solution of the second photosensitive layer was prepared. <Organic solvent solution of the first photosensitive layer> (A1) Binder polymer Soluble polyimide having carboxyl groups synthesized in Synthesis Example 4 100 parts by weight (B1) (Meth)acrylic compound Epoxy acrylate of modified bisphenol A type (Daicel Cytec Co., Ltd., product name Ebecryl3708) 50 parts by weight (C1) Light reaction initiator Bis(2,4,6-trimethylbenzoyl)phenyl phosphine oxide (Ciba Specialty Chemicals Co., Ltd., product name Irgacure 819) 2 parts by weight (D1) Flame retardants Phosphazene compound (Otsuka Chemical Co., Ltd., product name SPE-100) 15 parts by weight parts by weight (E1) Dyes and/or pigments IRGALITE BLUE GLVO (manufactured by Ciba Specialty Chemicals Co., Ltd.) 2 parts by weight <Organic solvent solution of the second photosensitive layer> (A2) Binder polymer Soluble polyimide having the carboxyl group synthesized in Synthesis Example 4 100 parts by weight (B2) (Meth)acrylic compound Epoxy acrylate of modified bisphenol A type (Daicel Cytec Co., Ltd., product name Ebecryl3708) 50 parts by weight (C2) Light reaction initiator Bis(2,4,6-trimethylbenzoyl)phenyl phosphine oxide (Ciba Specialty Chemicals Co., Ltd., product name Irgacure 819) 2 parts by weight (F2) Other components Bisphenol A type epoxy resin (Japan Epoxy Resins Co., Ltd., product name Epikote 828) 10 parts by weight as a epoxy resin, 4,4'-diaminodiphenylmethane (DDM) 1 part by weight as a curing agent. The organic solvent solution of the photosensitive resin composition of the above composition was prepared. Photosensitive dry film resist in a B-stage state first photosensitive layer 20M thick, second photosensitive layer 5M thick was prepared by direct

coating method. <Evaluation results of physical properties> Results of evaluation of the physical properties of the resultant photosensitive dry film resist was as follows. Alkali solubility: Not soluble in 1 wt% aqueous solution of sodium carbonate in 180 seconds. Dissolved in 30 seconds in an aqueous solution of sodium hydroxide. Developing property: hole of 100Mm×100Mm square, both are residue without developing holes of 200Mm×200Mm angle and are pass. Resolution: 90Mm adhesion: Pass. Flame retardant: Pass. Electrical Reliability: pass. (Line/space = 100/100Mm: 5.7×108Ω, Line/space = 25/25Mm: 3.4×106Ω) solder heat resistance: solder heat resistance pass at 300°C. Tackiness of the B stage state: Pass in tack-free. Warp: Pass in 3mm.

CASREACT ®: Copyright © 2016 American Chemical Society. All Rights Reserved. CASREACT contains reactions from CAS and from: ZIC/VINITI database (1974-1999) provided by InfoChem; INPI data prior to 1986; Biotransformations database compiled under the direction of Professor Dr. Klaus Kieslich; organic reactions, portions copyright 1996-2006 John Wiley & Sons, Ltd., John Wiley and Sons, Inc., Organic Reactions Inc., and Organic Syntheses Inc. Reproduced under license. All Rights Reserved.

18. Single Step



Overview

Steps/Stages

1.1

Notes

Synthesis of Arene Oxides, Reactants: 2, Steps: 1, Stages: 1, Most stages in any one step: 1

References

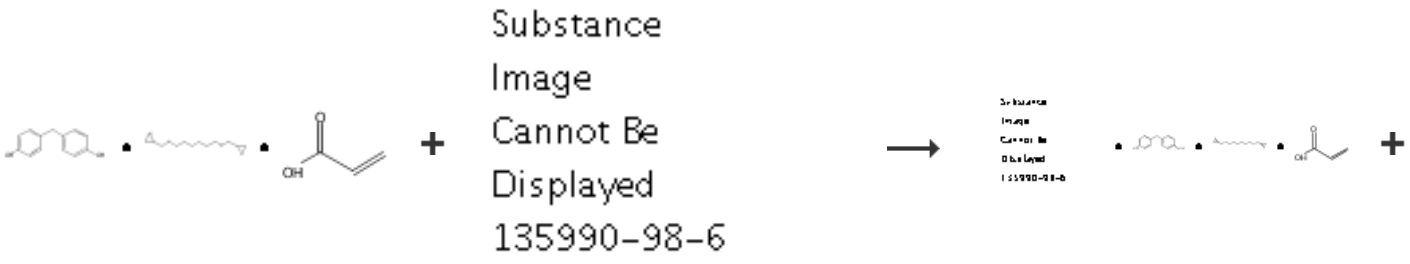
Hexamethylphosphorous Triamide

By Harvey, Ronald G.

From e-EROS Encyclopedia of Reagents for Organic Synthesis, , No pp. given; 2001

CASREACT ®: Copyright © 2016 American Chemical Society. All Rights Reserved. CASREACT contains reactions from CAS and from: ZIC/VINITI database (1974-1999) provided by InfoChem; INPI data prior to 1986; Biotransformations database compiled under the direction of Professor Dr. Klaus Kieslich; organic reactions, portions copyright 1996-2006 John Wiley & Sons, Ltd., John Wiley and Sons, Inc., Organic Reactions Inc., and Organic Syntheses Inc. Reproduced under license. All Rights Reserved.

19. Single Step



Substance
Image
Cannot Be
Displayed
1185987-42-1

Overview

Steps/Stages

1.1 R:

Substance
Image
Cannot Be
Displayed
363608-69-9

R:Al_2O_3, C:75980-60-8, C:931-36-2

Notes

photochemical, UV irradiation, conductive particle containing nickel and gold coated onto divinylbenzene resin used, Reactants: 2, Reagents: 2, Catalysts: 2, Steps: 1, Stages: 1, Most stages in any one step: 1

References

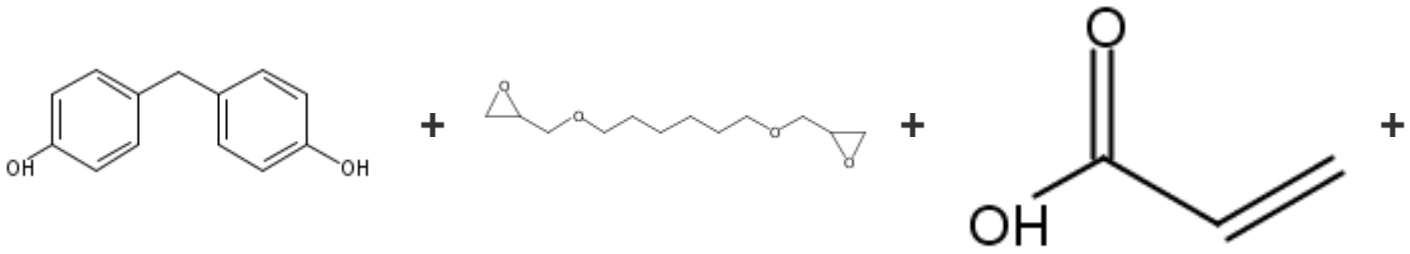
Anisotropically conductive pastes with controlled viscosity, bonded structures, and their manufacture using them

By Ishizawa, Eisuke et al

From Jpn. Kokai Tokkyo Koho, 2013033734, 14 Feb 2013

CASREACT ®: Copyright © 2016 American Chemical Society. All Rights Reserved. CASREACT contains reactions from CAS and from: ZIC/VINITI database (1974-1999) provided by InfoChem; INPI data prior to 1986; Biotransformations database compiled under the direction of Professor Dr. Klaus Kieslich; organic reactions, portions copyright 1996-2006 John Wiley & Sons, Ltd., John Wiley and Sons, Inc., Organic Reactions Inc., and Organic Syntheses Inc. Reproduced under license. All Rights Reserved.

20. 2 Steps



Substance Image Cannot Be Displayed 135990-98-6

Substance Image Cannot Be Displayed 1185987-42-1

[Step 2.1]

Overview

Steps/Stages

1.1

1.2

2.1 R:

Substance Image Cannot Be Displayed 363608-69-9

Notes

1) no experimental detail, 2) photochemical, UV irradiation, conductive particle containing nickel and gold coated onto divinylbenzene resin used, Reactants: 4, Reagents: 2, Catalysts: 2, Steps: 2, Stages: 3, Most stages in any one step: 2

References

Anisotropically conductive pastes with controlled viscosity, bonded structures, and their manufacture using them

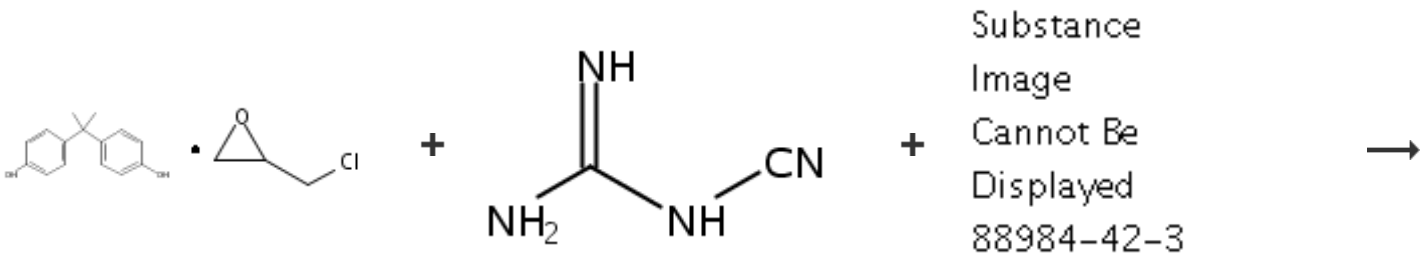
By Ishizawa, Eisuke et al

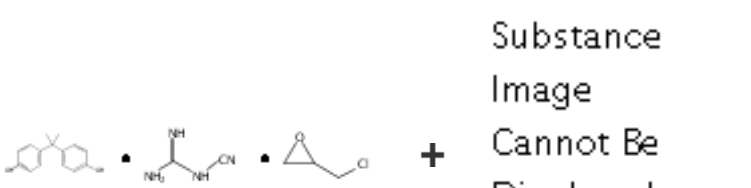
From Jpn. Kokai Tokkyo Koho, 2013033734, 14 Feb 2013

R:Al_2O_3, C:75980-60-8, C:931-36-2

CASREACT ®: Copyright © 2016 American Chemical Society. All Rights Reserved. CASREACT contains reactions from CAS and from: ZIC/VINITI database (1974-1999) provided by InfoChem; INPI data prior to 1986; Biotransformations database compiled under the direction of Professor Dr. Klaus Kieslich; organic reactions, portions copyright 1996-2006 John Wiley & Sons, Ltd., John Wiley and Sons, Inc., Organic Reactions Inc., and Organic Syntheses Inc. Reproduced under license. All Rights Reserved.

21. Single Step





Substance Image Cannot Be Displayed 1571062-77-5

Overview

Steps/Stages

1.1 C:330-54-1, 2 h, 135°C

Notes

Reactants: 3, Catalysts: 1, Steps: 1, Stages: 1, Most stages in any one step: 1

References

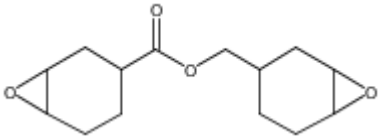
Manufacture of pressure tank from fiber-reinforced plastic

By Okamoto, Satoshi et al

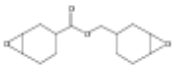
From Jpn. Kokai Tokkyo Koho, 2016017110, 01 Feb 2016

CASREACT ®: Copyright © 2016 American Chemical Society. All Rights Reserved. CASREACT contains reactions from CAS and from: ZIC/VINITI database (1974-1999) provided by InfoChem; INPI data prior to 1986; Biotransformations database compiled under the direction of Professor Dr. Klaus Kieslich; organic reactions, portions copyright 1996-2006 John Wiley & Sons, Ltd., John Wiley and Sons, Inc., Organic Reactions Inc., and Organic Syntheses Inc. Reproduced under license. All Rights Reserved.

22. Single Step



Substance Image Cannot Be Displayed 955090-22-9 + Substance Image Cannot Be Displayed 1456774-89-2 →



Substance Image Cannot Be Displayed 955090-22-9 + Substance Image Cannot Be Displayed 1456775-65-7

Overview

Steps/Stages

1.1 2 h, 70°C
1.2 C:104558-95-4

Notes

photochemical (stage 2), ultraviolet irradiation (stage 2), UV-lamp used, 120W (stage 2), Reactants: 3, Catalysts: 1, Steps: 1, Stages: 2, Most stages in any one step: 2

References

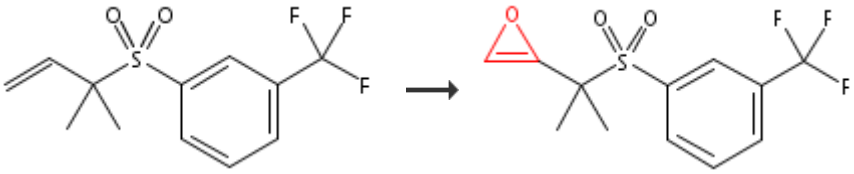
Radiation-curable coating compositions containing epoxy resins, cationic photopolymerization catalysts, and (meth)acrylates

By Yamazaki, Tetsuya et al

From Jpn. Kokai Tokkyo Koho, 2013194120, 30 Sep 2013

CASREACT ®: Copyright © 2016 American Chemical Society. All Rights Reserved. CASREACT contains reactions from CAS and from: ZIC/VINITI database (1974-1999) provided by InfoChem; INPI data prior to 1986; Biotransformations database compiled under the direction of Professor Dr. Klaus Kieslich; organic reactions, portions copyright 1996-2006 John Wiley & Sons, Ltd., John Wiley and Sons, Inc., Organic Reactions Inc., and Organic Syntheses Inc. Reproduced under license. All Rights Reserved.

23. Single Step



Overview

Steps/Stages

1.1 R:mCPBA, S:$ClCH_2CH_2Cl$, 3 h, reflux

Notes

Reactants: 1, Reagents: 1, Solvents: 1, Steps: 1, Stages: 1, Most stages in any one step: 1

References

Substituted aryl sulfone derivatives as calcium channel blockers

By Chakravarty, Prasun K. and Shao, Pengcheng Patrick

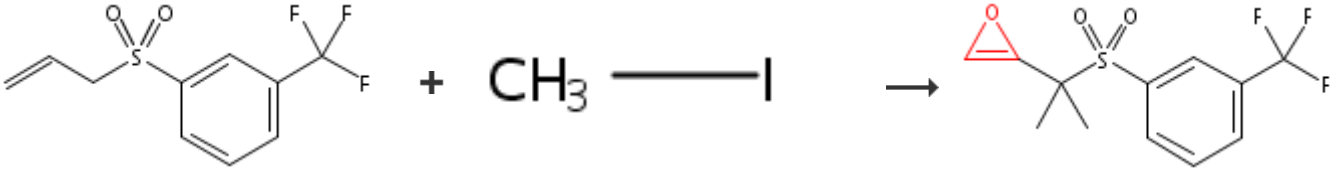
From PCT Int. Appl., 2010036596, 01 Apr 2010

Experimental Procedure

Step 3 : 2-(1-methyl-1-{[3-(trifluoromethyl)phenyl]sulfonyl}ethyl)oxirane To a solution of 1,1-dimethylprop-2-en-1-yl 3-(trifluoromethyl)phenyl sulfone (0.278 g, 1 mmol.) in 1,2-dichloroethane (1 mL) was added *m*-CPBA (85% purity, 0.404 g, 2 mmol). The resulting reaction mixture was refluxed for 3 h until TLC indicated the starting material was completely consumed. It was cooled to 0 °C, treated with $Na_2S_2O_3$ (saturated solution, 10 mL, to remove excess *m*-CPBA) and extracted with DCM (20 mLx3). Organics were washed with saturated $NaHCO_3$, dried and concentrated. Crude product was purified by column chromatography (PE:EA-10:1-3:1) to afford title compound. ^{1}H NMR ($CDCl_3$) δ: 8.10(s, 1H), 8.04(d, *J* = 8.0 Hz, 1H), 7.87(d, *J* = 8.0 Hz, 1H), 7.66 (t, *J* = 8.0 Hz, 1H)3.30-3.32 (m, 1 H), 2.64 (t, *J* = 4.0 Hz, 1H), 2.36-2.38 (m, 1 H), 1.27 (s, 3 H), 1.18 (s, 3 H).

CASREACT ®: Copyright © 2016 American Chemical Society. All Rights Reserved. CASREACT contains reactions from CAS and from: ZIC/VINITI database (1974-1999) provided by InfoChem; INPI data prior to 1986; Biotransformations database compiled under the direction of Professor Dr. Klaus Kieslich; organic reactions, portions copyright 1996-2006 John Wiley & Sons, Ltd., John Wiley and Sons, Inc., Organic Reactions Inc., and Organic Syntheses Inc. Reproduced under license. All Rights Reserved.

24. 2 Steps



Overview

Steps/Stages

Notes

1.1 R:$(Me_3Si)_2NH$ •Na, S:THF, -78°C; 30 min, -78°C
1.2 2 h, -78°C → rt; rt → -78°C; 30 min, -78°C; -78°C → rt; overnight, rt

2.1 R:mCPBA, S:$ClCH_2CH_2Cl$, 3 h, reflux

1) incremental addition of reactant and agent(methyl iodide sodium hexamethyldisilazide), Reactants: 2, Reagents: 2, Solvents: 2, Steps: 2, Stages: 3, Most stages in any one step: 2

References

Substituted aryl sulfone derivatives as calcium channel blockers

By Chakravarty, Prasun K. and Shao, Pengcheng Patrick

From PCT Int. Appl., 2010036596, 01 Apr 2010

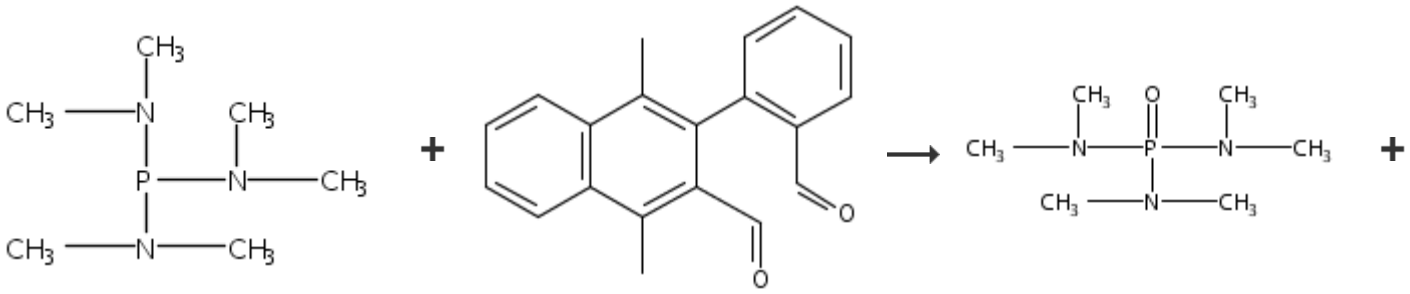
Experimental Procedure

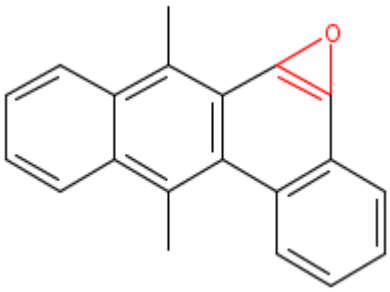
Step 1
Step 2: 1,1-dimethylprop-2-en-1-yl 3-(trifiuoromethyl)phenyl sulfone To a stirred solution of 1-(allylsulfonyl)-3-(trifluoromethyl)benzene (1.25 g, 5 mmol) in THF (20 mL) was added NaHMDS dropwise (2 mol / L in THF, 2.6 mL, 5.05 mmol) at -78 °C . The resulting reaction mixture was stirred for 30 min. MeI (0.8 g, 5.05 mmol) was added. Reaction mixture was allowed to warm up to ambient temperature for 2 hrs. Then it was cooled to -78 °C. NaHMDS (2 mol / L in THF, 2.6 mL, 5.05 mmol) was added and the resulting reaction mixture was stirred for 30 min. MeI (0.8 g, 5.05 mmol) was added. Reaction mixture was allowed to warm up to ambient temperature and stirred overnight. Brine (10 mL) was added. Reaction mixture was extracted with ethyl acetate (30 mLx3). Organics were dried over anhydrous Na_2SO_4, concentrated. Crude product was purified by column chromatography (PE:EA=10:1-3:1) to afford title compound . ^1H NMR ($CDCl_3$) δ: 8.06(s, 1H), 8.00(d, *J* = 1.6 Hz, 1H), 7.87(d, *J* = 8.0 Hz, 1H), 7.66 (t, *J* = 8.0 Hz, 1H), 6.02 (dd, *J* = 16.8 Hz, 11.2 Hz, 1H), 5.28(d, *J* = I 1.2 Hz, 1H), 5.05(d, *J* =16.8 Hz, 1H), 1.44 (s, 6 H).

Step 2
Step 3 : 2-(1-methyl-1-{[3-(trifluoromethyl)phenyl]sulfonyl}ethyl)oxirane To a solution of 1,1-dimethylprop-2-en-1-yl 3-(trifluoromethyl)phenyl sulfone (0.278 g, 1 mmol.) in 1,2-dichloroethane (1 mL) was added *m*-CPBA (85% purity, 0.404 g, 2 mmol). The resulting reaction mixture was refluxed for 3 h until TLC indicated the starting material was completely consumed. It was cooled to 0 °C, treated with $Na_2S_2O_3$ (saturated solution, 10 mL, to remove excess *m*-CPBA) and extracted with DCM (20 mLx3). Organics were washed with saturated $NaHCO_3$, dried and concentrated. Crude product was purified by column chromatography (PE:EA-10:1-3:1) to afford title compound. ^1H NMR ($CDCl_3$) δ: 8.10(s, 1H), 8.04(d, *J* = 8.0 Hz, 1H), 7.87(d, *J* = 8.0 Hz, 1H), 7.66 (t, *J* = 8.0 Hz, 1H)3.30-3.32 (m, 1 H), 2.64 (t, *J* = 4.0 Hz, 1H), 2.36-2.38 (m, 1 H), 1.27 (s, 3 H), 1.18 (s, 3 H).

CASREACT ®: Copyright © 2016 American Chemical Society. All Rights Reserved. CASREACT contains reactions from CAS and from: ZIC/VINITI database (1974-1999) provided by InfoChem; INPI data prior to 1986; Biotransformations database compiled under the direction of Professor Dr. Klaus Kieslich; organic reactions, portions copyright 1996-2006 John Wiley & Sons, Ltd., John Wiley and Sons, Inc., Organic Reactions Inc., and Organic Syntheses Inc. Reproduced under license. All Rights Reserved.

25. Single Step





Overview

Steps/Stages

1.1

Notes

Synthesis of Arene Oxides, multistep transformation, Reactants: 2, Steps: 1, Stages: 1, Most stages in any one step: 1

References

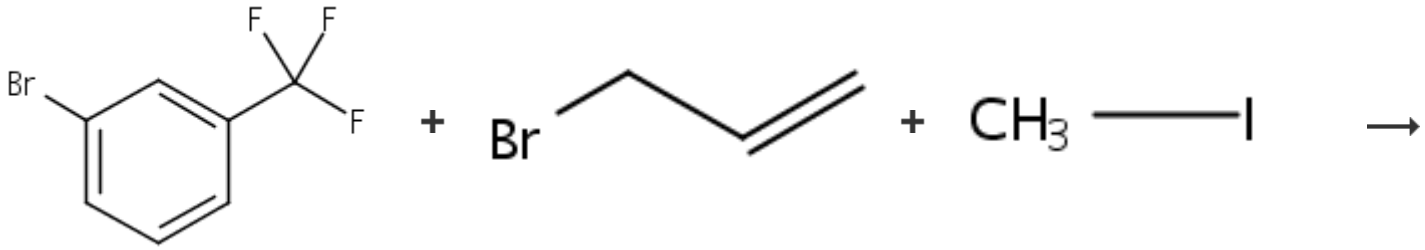
Hexamethylphosphorous Triamide

By Harvey, Ronald G.

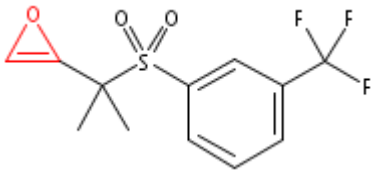
From e-EROS Encyclopedia of Reagents for Organic Synthesis, , No pp. given; 2001

CASREACT ®: Copyright © 2016 American Chemical Society. All Rights Reserved. CASREACT contains reactions from CAS and from: ZIC/VINITI database (1974-1999) provided by InfoChem; INPI data prior to 1986; Biotransformations database compiled under the direction of Professor Dr. Klaus Kieslich; organic reactions, portions copyright 1996-2006 John Wiley & Sons, Ltd., John Wiley and Sons, Inc., Organic Reactions Inc., and Organic Syntheses Inc. Reproduced under license. All Rights Reserved.

26. 3 Steps



[Step 2.2]



Overview

Steps/Stages

Notes

1.1 R:BuLi, S:THF, S:$Me(CH_2)_4Me$, -78°C; 2 h, -78°C

1.2 R:SO_2, -78°C
1.3 S:H_2O, -78°C
1.4 S:DMF, 2 h, 50°C; overnight, rt

2.1 R:$(Me_3Si)_2NH$ •Na, S:THF, -78°C; 30 min, -78°C
2.2 2 h, -78°C → rt; rt → -78°C; 30 min, -78°C; -78°C → rt; overnight, rt

3.1 R:mCPBA, S:$ClCH_2CH_2Cl$, 3 h, reflux

2) incremental addition of reactant and agent(methyl iodide sodium hexamethyldisilazide), Reactants: 3, Reagents: 4, Solvents: 5, Steps: 3, Stages: 7, Most stages in any one step: 4

References

Substituted aryl sulfone derivatives as calcium channel blockers

By Chakravarty, Prasun K. and Shao, Pengcheng Patrick

From PCT Int. Appl., 2010036596, 01 Apr 2010

Experimental Procedure

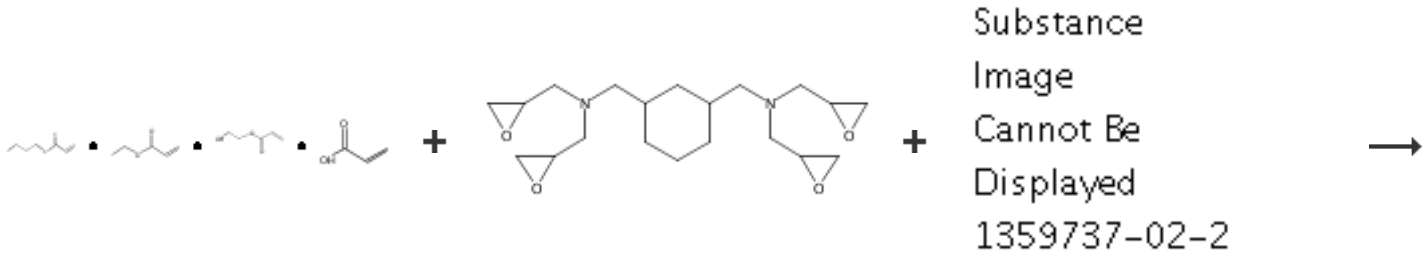
Step 1
Step 1 : 1-(allylsulfonyl)-3-(trifluoromethyl)benzene To a stirred solution of 1-bromo-3-(trifluoromethyl)benzene (22.4 g, 0.10 mol) in THF (200 mL) was added dropwise BuLi (2.5 M in hexane, 60 mL, 0.15 mol) at -78 °C with dry ice bath. After additional, the reaction mixture was stirred at -78 °C for 2 hrs. Then, SO_2 was purged into the reaction mixture until the green color turned to yellow color. H_2O (10 mL) was added to quench the reaction. Volatiles were evaporated under vacuum and DMF (250 mL) was added, followed by allyl bromide (18 g, 0.15 mol). The resulting mixture was heated at 50°C for 2 hrs, and then stirred at ambient temperature overnight The reaction mixture was poured into water (200 mL), extracted with ether (100 mL x3), dried over anhydrous Na_2SO_4, evaporated to afford the crude product. It was further purified by column chromatography (Petroleum ether: EtOAcI 0: 1 to 3 : 1) to afford title compound. ^{1}H NMR ($CDCl_3$) δ: 8.09(s, 1H), 8.03(d, *J* = 7.6 Hz, 1H), 7.87(d, *J* = 8Hz, 1H), 7.67-7.71 (m, 1H), 5.68-5.81 (m, 1H), 5.31(d, *J* =10 Hz, 1H), 5.11(d, *J* = 17.2 Hz, 1H), 3.82(d, *J* = 7.2 Hz, 2H).

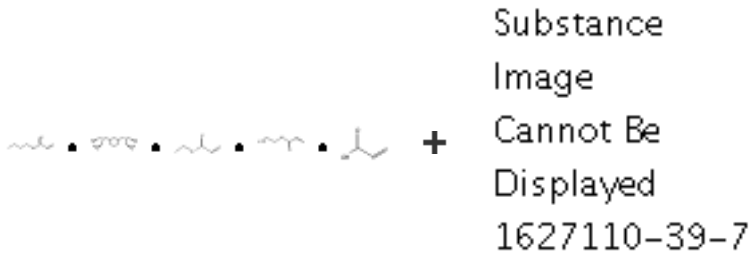
Step 2
Step 2: 1,1-dimethylprop-2-en-1-yl 3-(trifiuoromethyl)phenyl sulfone To a stirred solution of 1-(allylsulfonyl)-3-(trifluoromethyl)benzene (1.25 g, 5 mmol) in THF (20 mL) was added NaHMDS dropwise (2 mol / L in THF, 2.6 mL, 5.05 mmol) at -78 °C . The resulting reaction mixture was stirred for 30 min. MeI (0.8 g, 5.05 mmol) was added. Reaction mixture was allowed to warm up to ambient temperature for 2 hrs. Then it was cooled to -78 °C. NaHMDS (2 mol / L in THF, 2.6 mL, 5.05 mmol) was added and the resulting reaction mixture was stirred for 30 min. MeI (0.8 g, 5.05 mmol) was added. Reaction mixture was allowed to warm up to ambient temperature and stirred overnight. Brine (10 mL) was added. Reaction mixture was extracted with ethyl acetate (30 mLx3). Organics were dried over anhydrous Na_2SO_4, concentrated. Crude product was purified by column chromatography (PE:EA=10:1-3:1) to afford title compound . ^{1}H NMR ($CDCl_3$) δ: 8.06(s, 1H), 8.00(d, *J* = 1.6 Hz, 1H), 7.87(d, *J* = 8.0 Hz, 1H), 7.66 (t, *J* = 8.0 Hz, 1H), 6.02 (dd, *J* = 16.8 Hz, 11.2 Hz, 1H), 5.28(d, *J* = I 1.2 Hz, 1H), 5.05(d, *J* =16.8 Hz, 1H), 1.44 (s, 6 H).

Step 3
Step 3 : 2-(1-methyl-1-{[3-(trifluoromethyl)phenyl]sulfonyl}ethyl)oxirane To a solution of 1,1-dimethylprop-2-en-1-yl 3-(trifluoromethyl)phenyl sulfone (0.278 g, 1 mmol.) in 1,2-dichloroethane (1 mL) was added *m*-CPBA (85% purity, 0.404 g, 2 mmol). The resulting reaction mixture was refluxed for 3 h until TLC indicated the starting material was completely consumed. It was cooled to 0 °C, treated with $Na_2S_2O_3$ (saturated solution, 10 mL, to remove excess *m*-CPBA) and extracted with DCM (20 mLx3). Organics were washed with saturated $NaHCO_3$, dried and concentrated. Crude product was purified by column chromatography (PE:EA-10:1-3:1) to afford title compound. ^{1}H NMR ($CDCl_3$) δ: 8.10(s, 1H), 8.04(d, *J* = 8.0 Hz, 1H), 7.87(d, *J* = 8.0 Hz, 1H), 7.66 (t, *J* = 8.0 Hz, 1H)3.30-3.32 (m, 1 H), 2.64 (t, *J* = 4.0 Hz, 1H), 2.36-2.38 (m, 1 H), 1.27 (s, 3 H), 1.18 (s, 3 H).

CASREACT ®: Copyright © 2016 American Chemical Society. All Rights Reserved. CASREACT contains reactions from CAS and from: ZIC/VINITI database (1974-1999) provided by InfoChem; INPI data prior to 1986; Biotransformations database compiled under the direction of Professor Dr. Klaus Kieslich; organic reactions, portions copyright 1996-2006 John Wiley & Sons, Ltd., John Wiley and Sons, Inc., Organic Reactions Inc., and Organic Syntheses Inc. Reproduced under license. All Rights Reserved.

27. Single Step





Overview

Steps/Stages

1.1 C:24650-42-8, S:PhMe

Notes

photochemical, UV irradiation, high pressure mercury lamp used, coated onto silicone release agent treated polyethylene terephthalate film, Reactants: 3, Catalysts: 1, Solvents: 1, Steps: 1, Stages: 1, Most stages in any one step: 1

References

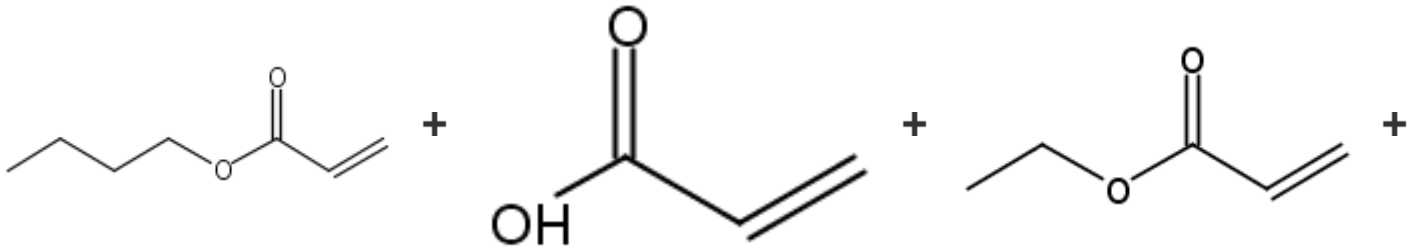
Adhesive sheet

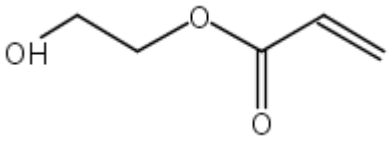
By Hirayama, Takamasa and Kitayama, Kazuhiro

From PCT Int. Appl., 2014142194, 18 Sep 2014

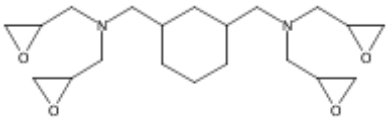
CASREACT ®: Copyright © 2016 American Chemical Society. All Rights Reserved. CASREACT contains reactions from CAS and from: ZIC/VINITI database (1974-1999) provided by InfoChem; INPI data prior to 1986; Biotransformations database compiled under the direction of Professor Dr. Klaus Kieslich; organic reactions, portions copyright 1996-2006 John Wiley & Sons, Ltd., John Wiley and Sons, Inc., Organic Reactions Inc., and Organic Syntheses Inc. Reproduced under license. All Rights Reserved.

28. 2 Steps





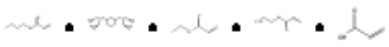
+



+ Substance Image Cannot Be Displayed 1359737-02-2 →

[Step 2.1]

[Step 2.1]



+ Substance Image Cannot Be Displayed 1627110-39-7

Overview

Steps/Stages

1.1 C:$(PhCO_2)_2$, S:PhMe, heated
2.1 C:24650-42-8, S:PhMe

Notes

2) photochemical, UV irradiation, high pressure mercury lamp used, coated onto silicone release agent treated polyethylene terephthalate film, Reactants: 6, Catalysts: 2, Solvents: 1, Steps: 2, Stages: 2, Most stages in any one step: 1

References

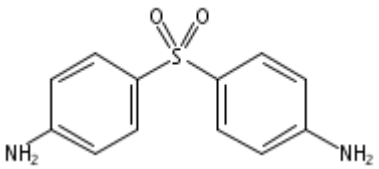
Adhesive sheet

By Hirayama, Takamasa and Kitayama, Kazuhiro

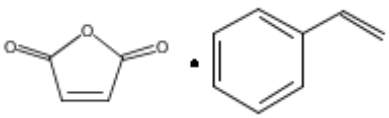
From PCT Int. Appl., 2014142194, 18 Sep 2014

CASREACT ®: Copyright © 2016 American Chemical Society. All Rights Reserved. CASREACT contains reactions from CAS and from: ZIC/VINITI database (1974-1999) provided by InfoChem; INPI data prior to 1986; Biotransformations database compiled under the direction of Professor Dr. Klaus Kieslich; organic reactions, portions copyright 1996-2006 John Wiley & Sons, Ltd., John Wiley and Sons, Inc., Organic Reactions Inc., and Organic Syntheses Inc. Reproduced under license. All Rights Reserved.

29. Single Step

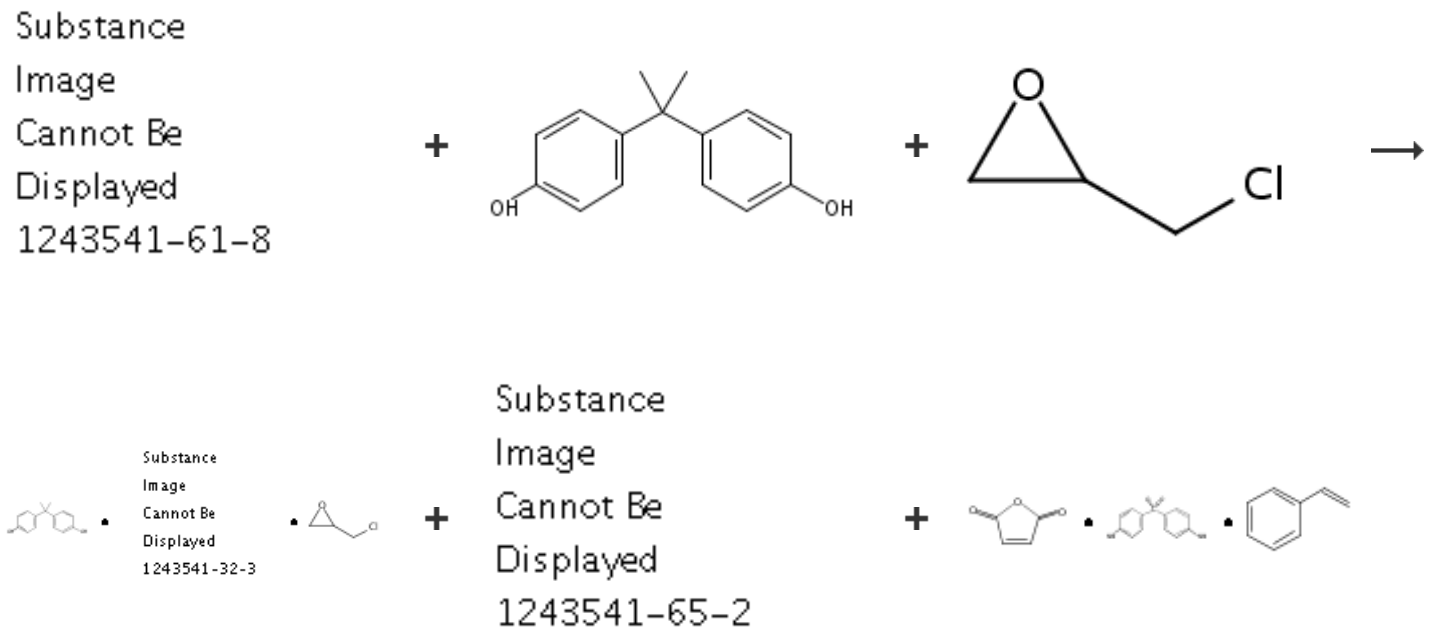


+



+ Substance Image Cannot Be Displayed 1243541-32-3 +

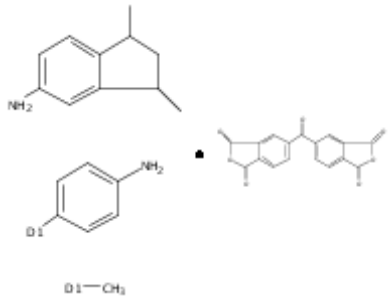
polymers



Overview

Steps/Stages

1.1 R:



C:Dabco, S:EtC(=O)Me, rt; 6 h, 180°C

Notes

photochemical, ultraviolet irradiation, Reactants: 6, Reagents: 1, Catalysts: 1, Solvents: 1, Steps: 1, Stages: 1, Most stages in any one step: 1

References

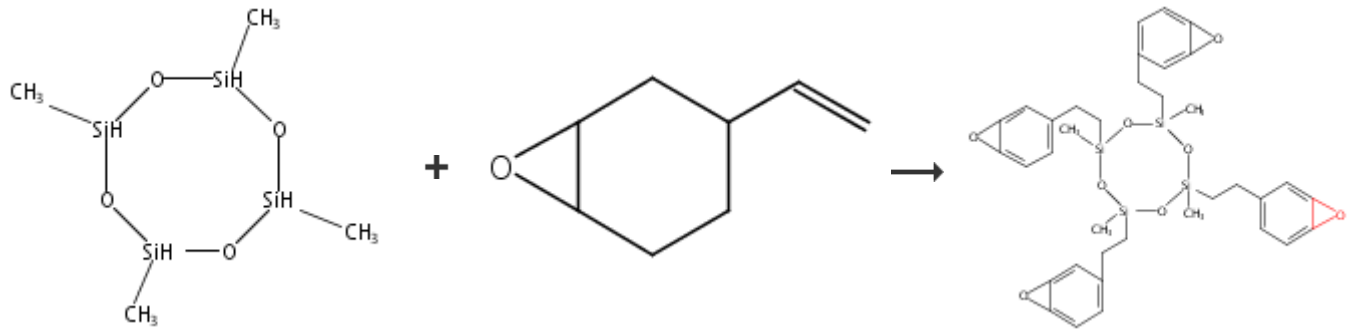
Adhesive phenoxy resin composition for electronic component and adhesive tape

By Hong, Seung U. et al

From Repub. Korea, 1481710, 21 Jan 2015

CASREACT ®: Copyright © 2016 American Chemical Society. All Rights Reserved. CASREACT contains reactions from CAS and from: ZIC/VINITI database (1974-1999) provided by InfoChem; INPI data prior to 1986; Biotransformations database compiled under the direction of Professor Dr. Klaus Kieslich; organic reactions, portions copyright 1996-2006 John Wiley & Sons, Ltd., John Wiley and Sons, Inc., Organic Reactions Inc., and Organic Syntheses Inc. Reproduced under license. All Rights Reserved.

30. Single Step



Overview

Steps/Stages

1.1 R:H_2PtCl_6, S:Me_2CHOH, 2 h, 80°C

Notes

Reactants: 2, Reagents: 1, Solvents: 1, Steps: 1, Stages: 1, Most stages in any one step: 1

References

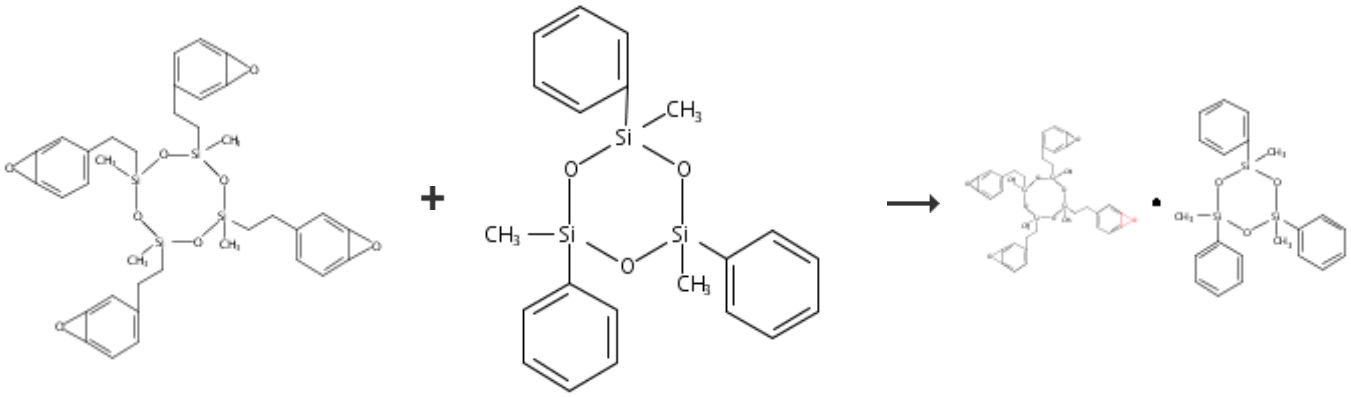
Epoxy-containing silicone resin with high light transmittance and high refractive index and manufacture method

By Zhang, Yingqiang et al

From Faming Zhuanli Shenqing, 104672457, 03 Jun 2015

CASREACT ®: Copyright © 2016 American Chemical Society. All Rights Reserved. CASREACT contains reactions from CAS and from: ZIC/VINITI database (1974-1999) provided by InfoChem; INPI data prior to 1986; Biotransformations database compiled under the direction of Professor Dr. Klaus Kieslich; organic reactions, portions copyright 1996-2006 John Wiley & Sons, Ltd., John Wiley and Sons, Inc., Organic Reactions Inc., and Organic Syntheses Inc. Reproduced under license. All Rights Reserved.

31. Single Step



polysiloxanes trimethylsilyl-terminated

Overview

Steps/Stages

1.1 R:$Me_3SiOSiMe_3$ (reaction products with polysiloxane), 40°C → 90°C; 10 h, 90°C

Notes

Reactants: 2, Reagents: 1, Steps: 1, Stages: 1, Most stages in any one step: 1

References

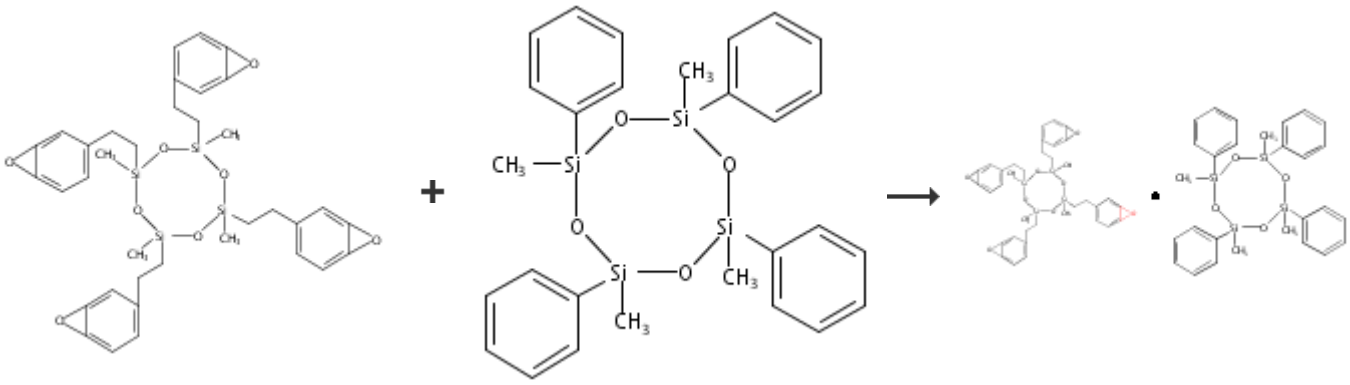
Epoxy-containing silicone resin with high light transmittance and high refractive index and manufacture method

By Zhang, Yingqiang et al

From Faming Zhuanli Shenqing, 104672457, 03 Jun 2015

CASREACT ®: Copyright © 2016 American Chemical Society. All Rights Reserved. CASREACT contains reactions from CAS and from: ZIC/VINITI database (1974-1999) provided by InfoChem; INPI data prior to 1986; Biotransformations database compiled under the direction of Professor Dr. Klaus Kieslich; organic reactions, portions copyright 1996-2006 John Wiley & Sons, Ltd., John Wiley and Sons, Inc., Organic Reactions Inc., and Organic Syntheses Inc. Reproduced under license. All Rights Reserved.

32. Single Step



polysiloxanes

trimethylsilyl-terminated

Overview

Steps/Stages

1.1 R:$Me_3SiOSiMe_3$ (reaction products with polysiloxane), 40°C → 80°C; 4 h, 80°C

Notes

Reactants: 2, Reagents: 1, Steps: 1, Stages: 1, Most stages in any one step: 1

References

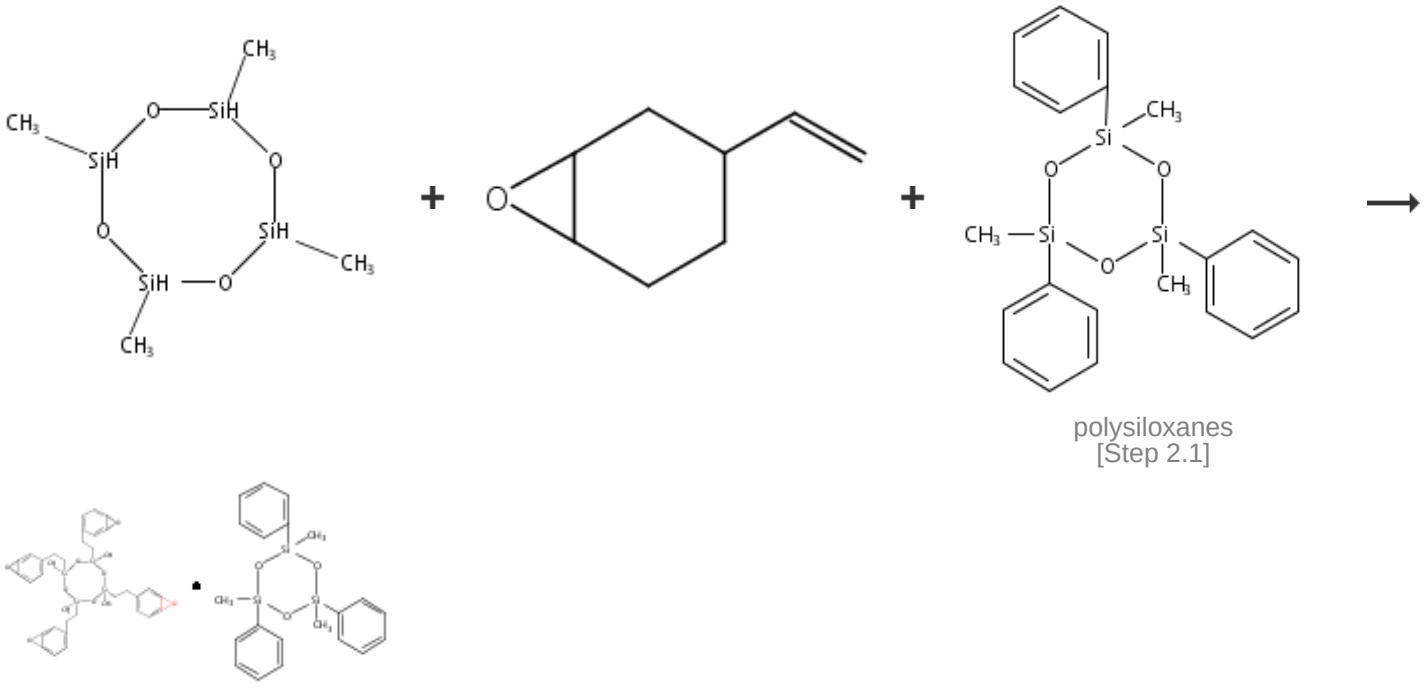
Epoxy-containing silicone resin with high light transmittance and high refractive index and manufacture method

By Zhang, Yingqiang et al

From Faming Zhuanli Shenqing, 104672457, 03 Jun 2015

CASREACT ®: Copyright © 2016 American Chemical Society. All Rights Reserved. CASREACT contains reactions from CAS and from: ZIC/VINITI database (1974-1999) provided by InfoChem; INPI data prior to 1986; Biotransformations database compiled under the direction of Professor Dr. Klaus Kieslich; organic reactions, portions copyright 1996-2006 John Wiley & Sons, Ltd., John Wiley and Sons, Inc., Organic Reactions Inc., and Organic Syntheses Inc. Reproduced under license. All Rights Reserved.

33. 2 Steps



polysiloxanes
[Step 2.1]

trimethylsilyl-terminated

Overview

Steps/Stages

Notes

1.1 R:H_2PtCl_6, S:Me_2CHOH, 2 h, 80°C

Reactants: 3, Reagents: 2, Solvents: 1, Steps: 2, Stages: 2, Most stages in any one step: 1

2.1 R:$Me_3SiOSiMe_3$ (reaction products with polysiloxane), 40°C → 90°C; 10 h, 90°C

References

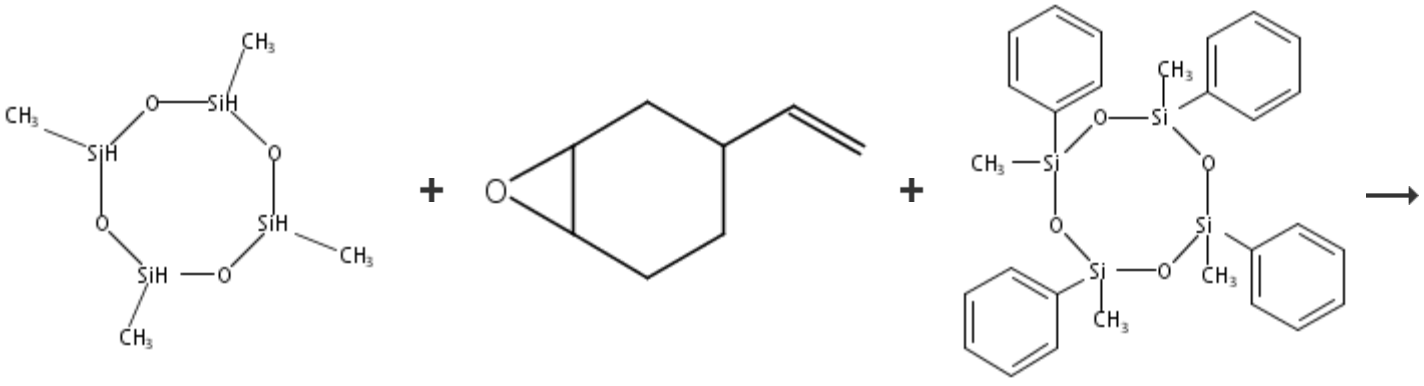
Epoxy-containing silicone resin with high light transmittance and high refractive index and manufacture method

By Zhang, Yingqiang et al

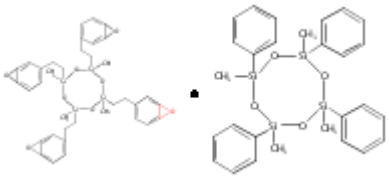
From Faming Zhuanli Shenqing, 104672457, 03 Jun 2015

CASREACT ®: Copyright © 2016 American Chemical Society. All Rights Reserved. CASREACT contains reactions from CAS and from: ZIC/VINITI database (1974-1999) provided by InfoChem; INPI data prior to 1986; Biotransformations database compiled under the direction of Professor Dr. Klaus Kieslich; organic reactions, portions copyright 1996-2006 John Wiley & Sons, Ltd., John Wiley and Sons, Inc., Organic Reactions Inc., and Organic Syntheses Inc. Reproduced under license. All Rights Reserved.

34. 2 Steps



polysiloxanes
[Step 2.1]



trimethylsilyl-terminated

Overview

Steps/Stages

Notes

1.1 R:H_2PtCl_6, S:Me_2CHOH, 2 h, 80°C

Reactants: 3, Reagents: 2, Solvents: 1, Steps: 2, Stages: 2, Most stages in any one step: 1

2.1 R:$Me_3SiOSiMe_3$ (reaction products with polysiloxane), 40°C → 80°C; 4 h, 80°C

References

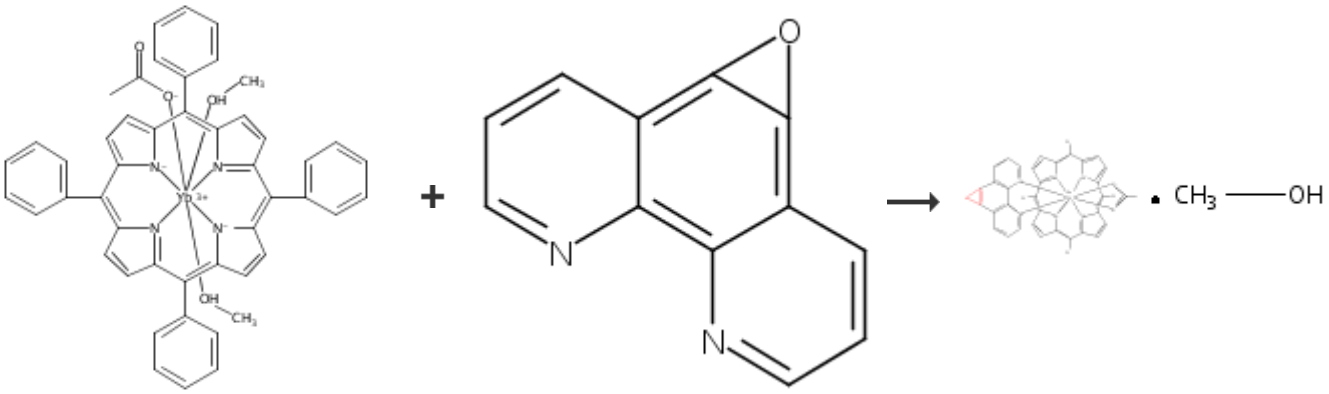
Epoxy-containing silicone resin with high light transmittance and high refractive index and manufacture method

By Zhang, Yingqiang et al

From Faming Zhuanli Shenqing, 104672457, 03 Jun 2015

CASREACT ®: Copyright © 2016 American Chemical Society. All Rights Reserved. CASREACT contains reactions from CAS and from: ZIC/VINITI database (1974-1999) provided by InfoChem; INPI data prior to 1986; Biotransformations database compiled under the direction of Professor Dr. Klaus Kieslich; organic reactions, portions copyright 1996-2006 John Wiley & Sons, Ltd., John Wiley and Sons, Inc., Organic Reactions Inc., and Organic Syntheses Inc. Reproduced under license. All Rights Reserved.

35. Single Step



89%

Overview

Steps/Stages

1.1 S:PhMe, 12 h, rt

Notes

Reactants: 2, Solvents: 1, Steps: 1, Stages: 1, Most stages in any one step: 1

References

Structure and photophysics of near-infrared emissive ytterbium(III) monoporphyrinate acetate complexes having neutral bidentate ligands

By He, Hongshan et al

From Dalton Transactions, (36), 7454-7461; 2009

Reaction Protocol

Procedure

1. Add an excess of 5,6'-epoxy-5,6-dihydroxy-1,10-phenanthroline (24.5 mg, 0.12 mmol) to a toluene solution (20 mL) of the reactant (24.6 mg, 0.027 mmol).
2. Stir the solution magnetically at room temperature for 12 hours.

View more...

Available Experimental Data

Crystal Structure Data, Elemental Analysis, State

View with MethodsNow

CASREACT ®: Copyright © 2016 American Chemical Society. All Rights Reserved. CASREACT contains reactions from CAS and from: ZIC/VINITI database (1974-1999) provided by InfoChem; INPI data prior to 1986; Biotransformations database compiled under the direction of Professor Dr. Klaus Kieslich; organic reactions, portions copyright 1996-2006 John Wiley & Sons, Ltd., John Wiley and Sons, Inc., Organic Reactions Inc., and Organic Syntheses Inc. Reproduced under license. All Rights Reserved.