



Rødekro 2015. Vurdering af udviklingen i den naturlige nedbrydning i nedstrømsforureningsfane efter kildeoprensning

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Bilag 6: Liste over bakterier som er kendt for nedbrydning af chlorerede ethener.

| From | To | Anaerobic /Aerobic | How | Microorganism | Ref | Ref |
|------|----------------------|--------------------|--------------------------|-------------------------------------|--|--|
| cDCE | to CO2 | Aerobic | oxidation | <i>B-proteobacterium</i> | Abe 2009 | C and Cl isotope fractionation during aerobic oxidation and reductive deCl... |
| TCE | to CO2 | Aerobic | Oxidation | <i>Burkholderia cepacia</i> | Barth 2002 | Environmental isotopes in biodegradation and bioremediation Chap 4 |
| TCE | to cisDCE | Anaerobic | Reductive dechlorination | <i>Dehalobacter restrictus</i> | Lee, Conrad, Alvarez-Cohen 2007 | Environmental isotopes in biodegradation and bioremediation Chap 4 |
| PCE | to Ethene | Anaerobic | Reductive dechlorination | <i>Dehalococcoides</i> | Maymo-Gatell AEM 1997 Fletcher 2011 | |
| PCE | only to transDCE | Anaerobic | Reductive dechlorination | <i>Dehalococcoides</i> | Marco-Urrea 2011 | Transformation and C isotope fractionation of PCE and TCE |
| PCE | to cisDCE | Anaerobic | Reductive dechlorination | <i>Desulfitobacterium</i> | Cichocka 2007 Suyama 2001 Nijenhuis 2005 | Environmental isotopes in biodegradation and bioremediation Chap 4 EPA guide for assessing biodegradation - not exactly same values |
| PCE | to TCE | Anaerobic | Reductive dechlorination | <i>Desulfitobacterium</i> | Cichocka 2008 Löffler 1997 Maillard 2004, thèse Löffler et al. AEM 1997 | Environmental isotopes in biodegradation and bioremediation Chap 4 |
| PCE | to cisDCE | Anaerobic | Reductive dechlorination | <i>Desulfuromonas michiganensis</i> | Liang 2007 sung 2003 Maillard 2004, thèse | Distinguishing abiotic and biotic transformation of PCE and TCE |
| PCE | to cisDCE | Anaerobic | Reductive dechlorination | <i>Geobacter lovleyii</i> | Cichocka 2008 Sung 2006 | Environmental isotopes in biodegradation and bioremediation Chap 4 |
| VC | CO2? Cometabolism | Aerobic | Cometabolic oxidation | <i>Methylosinus trichosporium</i> | Chu 2004 | Environmental isotopes in biodegradation and bioremediation Chap 4 |
| cDCE | CO2? Cometabolism | Aerobic | Cometabolic oxidation | <i>Methylosinus trichosporium</i> | Chu 2004 | Environmental isotopes in biodegradation and bioremediation Chap 4 |
| TCE | CO2? Cometabolism | Aerobic | Cometabolic oxidation | <i>Methylosinus trichosporium</i> | Chu 2004 | Environmental isotopes in biodegradation and bioremediation Chap 4 |

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|------|--------------------------------------|-----------|--------------------------|---------------------------------------|-------------------------------|--|
| VC | | Aerobic | Oxidation | <i>Mycobacterium</i> | Chartrand 2005 | Environmental isotopes in biodegradation and bioremediation Chap 4 |
| VC | CO2? Cometabolism | Aerobic | Cometabolic oxidation | <i>Mycobacterium vaccae</i> | Chu 2004 | Environmental isotopes in biodegradation and bioremediation Chap 4 |
| VC | to ethene | Aerobic | Oxidation | <i>Nocardioides</i> | Chartrand 2005 | Environmental isotopes in biodegradation and bioremediation Chap 4 |
| cDCE | to ethene? | Aerobic | Oxidation | <i>Polaromonas</i> | Abe 2009 | Environmental isotopes in biodegradation and bioremediation Chap 4 |
| PCE | to TCE | Anaerobic | Reductive dechlorination | <i>Sulfurospirillum</i> | Buttet 2013 | |
| PCE | to cisDCE | Anaerobic | Reductive dechlorination | <i>Sulfurospirillum</i> | Buttet 2013 | |
| PCE | to cisDCE | Anaerobic | Reductive dechlorination | <i>Sulfurospirillum multivorans</i> | Nijenhuis 2005 | Environmental isotopes in biodegradation and bioremediation Chap 4 EPA guide for assessing biodegradation |
| PCE | to cisDCE | Anaerobic | Reductive dechlorination | <i>Sulfurospirillum halorespirans</i> | Cichocka 2007 Luijten 2003 | Environmental isotopes in biodegradation and bioremediation Chap 4 EPA guide for assessing biodegradation |
| PCE | TCE | Anaerobic | Reductive dechlorination | <i>Sporomusa ovata</i> | Terzenbach 1994 | |
| PCE | TCE | Anaerobic | Reductive dechlorination | <i>Acetobacterium woodii</i> | Terzenbach 1995 | |
| PCE | TCE | Anaerobic | Reductive dechlorination | <i>Clostridium formicoaceticum</i> | Terzenbach 1996 | |
| PCE | TCE | Anaerobic | Reductive dechlorination | <i>Methanlobus tindarius</i> | Terzenbach 1997 | |
| PCE | TCE | Anaerobic | Reductive dechlorination | <i>Methanosarcina</i> | Fathepure 1987 | |
| TCE | cisDCE + traces tDCE VC Ethene | Anaerobic | Reductive dechlorination | <i>Methanosarcina</i> | Jablonski 1992 | |
| | | Anaerobic | Reductive dechlorination | <i>Dehalogenimonas</i> | Richardson 2013 | |
| | | Anaerobic | Reductive dechlorination | <i>Anaeromyxobacter</i> | Richardson 2013 | |

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|--|--|-----------|--------------------------|------------------------|-----------------|--|
| | | Anaerobic | Reductive dechlorination | <i>Desulfonomile</i> | Richardson 2013 | |
| | | Anaerobic | Reductive dechlorination | <i>Desulfovibrio</i> | Richardson 2013 | |
| | | Anaerobic | Reductive dechlorination | <i>Dehalobium</i> | Richardson 2013 | |
| | | | | <i>Dehalospirillum</i> | | |