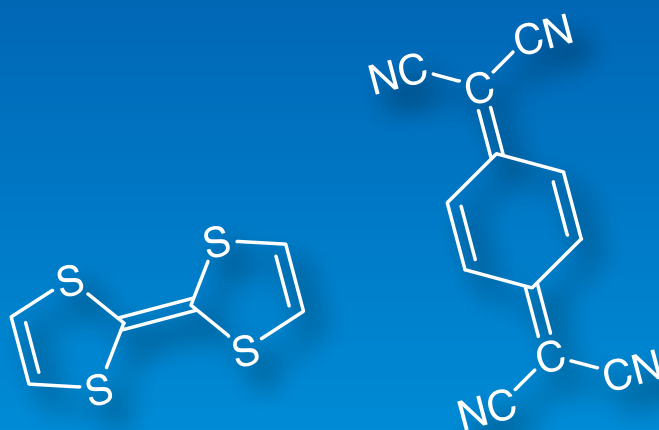


# Charge Transfer Complexes for Organic Metals



## Donors

TTF Derivatives

## Acceptors

TCNQ Derivatives  
Metal Dithiolenes

Other Donors & Acceptors

Synthetic Intermediates

# Charge Transfer Complexes for Organic Metals

The discovery in 1973 of the metal-like electronic behavior of charge transfer complexes, consisting of an electron donor, Tetrathiafulvalene (TTF) and an electron acceptor, 7,7,8,8-Tetracyanoquinodimethane (TCNQ)<sup>1)</sup> has led to intensive studies of the organic metals.

In 1980 Jéome<sup>2)</sup>, Bechgaard<sup>3)</sup> and their co-workers have found that each complex of (TMTSF)<sub>2</sub>PF<sub>6</sub> or (TMTSF)<sub>2</sub>ClO<sub>4</sub> using TMTSF analogue of TTF, becomes a superconductor at very low

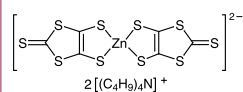
temperatures. Afterwards, organic superconductors utilizing BEDT-TTF<sup>4)</sup>, M(dmit)<sub>2</sub><sup>5)</sup> (M=Ni, Pd), etc. have successively been designed one after another. Moreover, the complexes κ-(BEDT-TTF)<sub>2</sub>Cu[N(CN)<sub>2</sub>]Br (T<sub>c</sub>=11.6K)<sup>6)</sup>, and κ-(BEDT-TTF)<sub>2</sub>Cu[N(CN)<sub>2</sub>]Cl (0.3kbar; T<sub>c</sub>=12.8K)<sup>7)</sup> having higher T<sub>c</sub> have been found and vigorous studies have been conducted toward the development of still higher T<sub>c</sub> organic superconductor.<sup>8)</sup>

Donors		TTF Derivatives	
<b>B1200</b> 100mg 1g		<b>B1299</b> 100mg	
Bis(ethylenedithio)-tetrathiafulvalene (BEDT-TTF) [66946-48-3]		Bis(ethylenedithio)-tetrathiafulvalene-d <sub>8</sub> (BEDT-TTF-d <sub>8</sub> ) [101751-48-8]	
<b>B1218</b> 100mg		<b>B1244</b> 100mg	
Bis(methylenedithio)-tetrathiafulvalene (BMDT-TTF) [68550-20-9]		Bis(trimethylenedithio)-tetrathiafulvalene (BPDT-TTF) [66946-49-4]	
<b>D2067</b> 100mg 1g		<b>T1119</b> 100mg	
Dimethyltetrathiafulvalene (SDM-TTF)		Tetrakis(methylthio)-tetrathiafulvalene (TMT-TTF) [51501-77-0]	
<b>T1143</b> 100mg		<b>T1205</b> 100mg	
Tetrakis(octadecylthio)-tetrathiafulvalene (TODT-TTF) [105782-53-4]		Tetrakis(pentylthio)-tetrathiafulvalene (TPT-TTF) [106920-29-0]	
<b>T0980</b> 1g 5g 25g		<b>T1377</b> 100mg	
Tetrathiafulvalene (TTF) [31366-25-3]		Tetrathiafulvalene-d <sub>4</sub> (TTF-d <sub>4</sub> ) [51751-16-7]	
<b>T1282</b> 1g		<b>T2468</b> 1g	
Tris(tetrathiafulvalene) Bis(tetrafluoroborate) Complex [55492-86-9]		Tetrathiafulvalene - 7,7,8,8-Tetracyanoquinodimethane Complex [40210-84-2]	
Acceptors		TCNQ Derivatives	
<b>B2309</b> 1g 5g		<b>B1466</b> 100mg	
2,5-Bis(2-hydroxyethoxy)-7,7,8,8-tetracyanoquinodimethane [58268-29-4]		Bis(tetrabutylammonium) Tetracyanodiphenylmethane [68271-98-7]	
<b>D2021</b> 100mg		<b>T0077</b> 5g 25g	
2,5-Dimethyl-7,7,8,8-tetracyanoquinodimethane [1487-82-7]		Tetracyanoethylene [670-54-2]	
<b>T1246</b> 100mg		<b>T0078</b> 5g 25g	
11,11,12,12-Tetracyanonaphtho-2,6-quinodimethane [6251-01-0]		7,7,8,8-Tetracyanoquinodimethane (TCNQ) [1518-16-7]	
<b>F0509</b> 100mg		<b>D3200</b> 100mg	
2-Fluoro-7,7,8,8-tetracyanoquinodimethane [69857-37-0]		2,5-Difluoro-7,7,8,8-tetracyanoquinodimethane [73318-02-2]	
<b>T1131</b> 100mg 1g		<b>T2468</b> 1g	
Tetrafluorotetracyanoquinodimethane sublimed [29261-33-4]		Tetrathiafulvalene - 7,7,8,8-Tetracyanoquinodimethane Complex [40210-84-2]	

## Acceptors

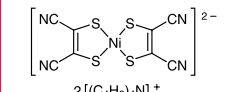
## Metal Dithiolenes

B1221 5g 25g



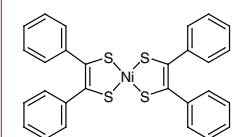
Bis(tetrabutylammonium)  
Bis(1,3-dithiole-2-thione-  
4,5-dithiolato)zinc Complex  
[68449-38-7]

B1371 1g



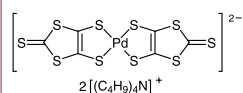
Bis(tetrabutylammonium)  
Bis(maleonitriledithiolato)-  
nickel(II) Complex  
[18958-57-1]

B1350 1g 25g



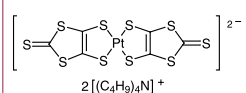
Bis(dithiobenzil)nickel(II)  
[28984-20-5]

B1437 100mg 1g



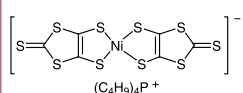
Bis(tetrabutylammonium)  
Bis(1,3-dithiole-2-thione-  
4,5-dithiolato)palladium(II)  
[72688-90-5]

B1438 100mg



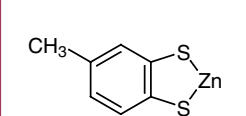
Bis(tetrabutylammonium)  
Bis(1,3-dithiole-2-thione-  
4,5-dithiolato)platinum(II)  
[72688-91-6]

T1416 1g



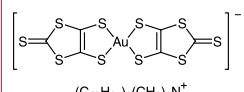
Tetrabutylphosphonium  
Bis(1,3-dithiole-2-thione-  
4,5-dithiolato)nickel(III)  
Complex [105029-70-7]

T0279 1g 5g



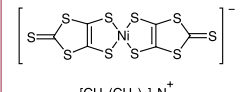
(Toluene-3,4-dithiolato)-  
zinc(II) [29726-21-4]

D2134 100mg



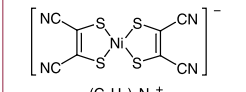
Diocetadecyldimethyl-  
ammonium Bis(1,3-dithiole-  
2-thione-4,5-dithiolato)-  
aurate(III) [120141-26-6]

T1272 100mg



Tetrabutylammonium  
Bis(1,3-dithiole-2-thione-  
4,5-dithiolato)nickel(III)  
Complex [68401-87-6]

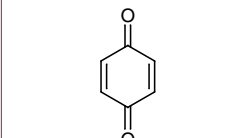
T1415 1g



Tetrabutylammonium  
Bis(maleonitriledithiolato)-  
nickel(III) Complex  
[18958-62-8]

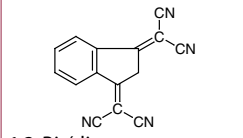
## Other Donors &amp; Acceptors

B0089 25g 500g



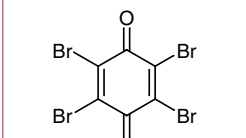
1,4-Benzoquinone  
[106-51-4]

B1416 5g



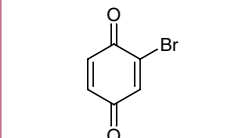
1,3-Bis(dicyano-  
methylidene)indan  
[38172-19-9]

T0617 5g 25g



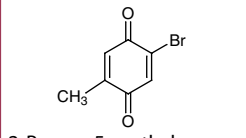
Bromanil [488-48-2]

B1601 1g



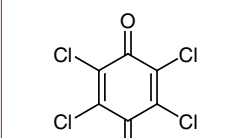
2-Bromo-1,4-benzoquinone  
[3958-82-5]

B1595 5g



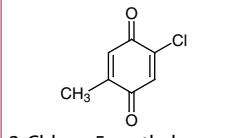
2-Bromo-5-methyl-  
1,4-benzoquinone  
[13070-25-2]

T0061 25g 500g



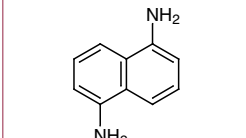
Chloranil [118-75-2]

C1336 5g



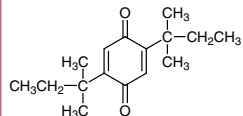
2-Chloro-5-methyl-  
1,4-benzoquinone  
[19832-87-2]

D0101 25g 500g



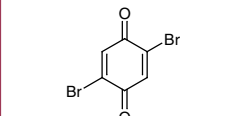
1,5-Diaminonaphthalene  
[2243-62-1]

D2152 5g



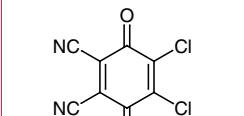
2,5-Di-*tert*-amyl-  
benzoquinone  
[4584-63-8]

D2249 1g 5g



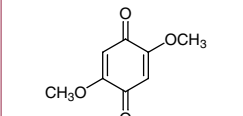
2,5-Dibromo-  
1,4-benzoquinone  
[1633-14-3]

D1070 25g 250g



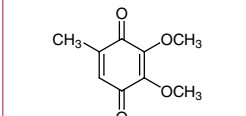
2,3-Dichloro-5,6-dicyano-  
1,4-benzoquinone [84-58-2]

D2250 5g 25g



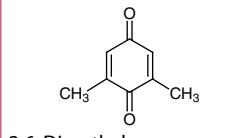
2,5-Dimethoxy-  
1,4-benzoquinone  
[3117-03-1]

D1956 1g 5g



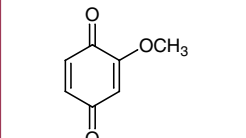
2,3-Dimethoxy-5-methyl-  
1,4-benzoquinone  
[605-94-7]

D2234 1g 5g 25g



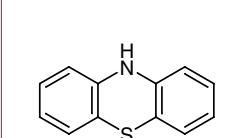
2,6-Dimethyl-  
1,4-benzoquinone  
[527-61-7]

M1045 1g 5g



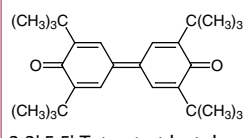
Methoxybenzoquinone  
[2880-58-2]

P0106 25g 500g



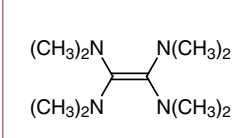
Phenothiazine [92-84-2]

T1503 1g



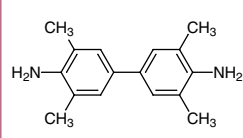
3,3',5,5'-Tetra-*tert*-butyl-  
4,4'-diphenylquinone  
[2455-14-3]

T1221 5g



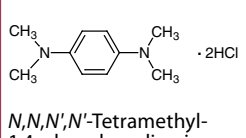
Tetrakis(dimethylamino)-  
ethylene [996-70-3]

T1023 1g 5g



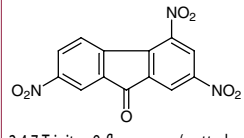
3,3',5,5'-Tetramethyl-  
benzidine [54827-17-7]

T0151 1g 25g



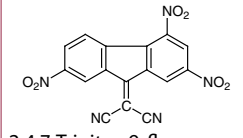
*N,N,N',N'*-Tetramethyl-  
1,4-phenylenediamine  
Dihydrochloride  
[637-01-4]

T0499 5g



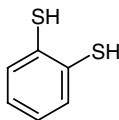
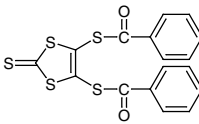
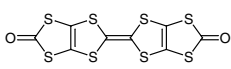
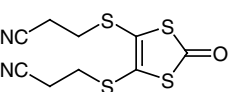
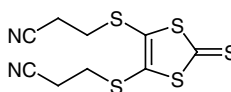
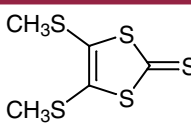
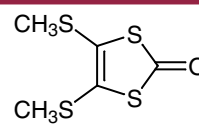
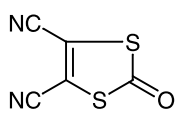
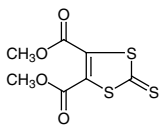
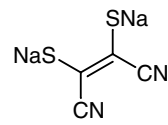
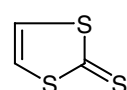
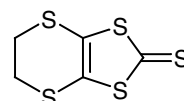
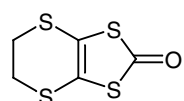
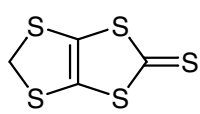
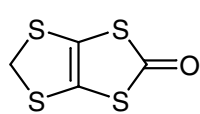
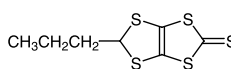
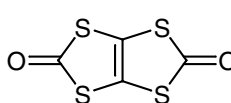
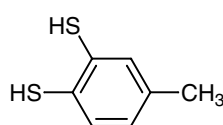
2,4,7-Trinitro-9-fluorenone (wetted  
with ca. 20% Water, containing 5g on  
a dry weight basis) [129-79-3]

T0875 1g 5g



2,4,7-Trinitro-9-fluorenyl-  
idene malononitrile  
[1172-02-7]

## Synthetic Intermediates

		<b>B1322</b> 1g 5g  1,2-Benzenedithiol [17534-15-5]	<b>B1199</b> 1g 5g  4,5-Bis(benzoylthio)-1,3-dithiole-2-thione [68494-08-6]	<b>B1272</b> 1g  Bis(carbonyldithio)-tetrathiafulvalene [64394-47-4]
<b>B2233</b> 1g  4,5-Bis(2-cyanoethylthio)-1,3-dithiol-2-one [158871-28-4]	<b>B2228</b> 1g  4,5-Bis(2-cyanoethylthio)-1,3-dithiole-2-thione [132765-35-6]	<b>B1778</b> 1g  4,5-Bis(methylthio)-1,3-dithiole-2-thione [49638-64-4]	<b>B1777</b> 1g  4,5-Bis(methylthio)-1,3-dithiol-2-one [61485-46-9]	<b>D3252</b> 1g  4,5-Dicyano-1,3-dithiol-2-one [934-31-6]
<b>D2127</b> 10g  Dimethyl 1,3-Dithiole-2-thione-4,5-dicarboxylate [7396-41-0]	<b>D1930</b> 1g 5g  Disodium Dimercaptomaleonitrile [5466-54-6]	<b>D2133</b> 5g  1,3-Dithiole-2-thione [930-35-8]	<b>E0429</b> 5g 25g  4,5-Ethylenedithio-1,3-dithiole-2-thione [59089-89-3]	<b>E0460</b> 1g 5g  4,5-Ethylenedithio-1,3-dithiol-2-one [74962-29-1]
<b>M1112</b> 1g  4,5-Methylenedithio-1,3-dithiole-2-thione [70800-59-8]	<b>M1154</b> 100mg 1g  4,5-Methylenedithio-1,3-dithiol-2-one [85720-62-3]	<b>P1635</b> 250mg 1g  5-Propyl-1,3-dithiole-2-thione [4,5-d][1,3]dithiole-2-thione [202126-48-5]	<b>T1132</b> 1g 5g 25g  1,3,4,6-Tetrathiapentalene-2,5-dione [64394-45-2]	<b>T0266</b> 1g 5g  Toluene-3,4-dithiol [496-74-2]

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