

Ionic Liquids General Catalog



For your safe

The use of reagents involves potential danger; fires, explosions, accidental ingestion, poisoning, irritation of mucous membranes due to inhalation of vapor, chemical or physical damage to the skin, etc. Furthermore, it is required to use reagents while considering the impact on the environment.

Although various regulations and hazard information are described as much as possible on catalogs or labels, there are many chemicals with little knowledge or information on hazard. We would like you to pay attention to the following, when handling reagents.

- When ordering, please use the product code and product name listed in the catalog for accuracy.
- Please refer to the description of label, SDS, related regulations and etc when use.
- Please manage properly in accordance with the laws and regulations, and take all possible measures to prevent reagents from tipping over and falling. Please take appropriate safety measures such as wearing protective equipment.
- Please store the remaining reagents properly and manage them thoroughly. Build a database to manage usage.
- Dispose of waste or remaining reagents appropriately accordance with corresponding regulations, referring to SDS.



Contents of the catalog

The prices, packaging or other properties of products listed in the catalog are subject to change due to fluctuations of circumstances, also specification, grades, etc. are subject to change. Please check the product search site "[Cica-Web](#)" for the information. The product may be deleted due to various reasons, but if possible, a replacement may be available. Please contact distributor.

Please be aware that some products require registration, permission for use, information necessary for stable supply and legally required procedures when ordered or received.



Ionic liquid is

Compounds consisting solely of ions (anions and cations) with a melting point below 100 °C. are called ionic liquids (Ionic Liquids). Ionic liquids are substances that combine features such as non-volatility, flame resistance, high ionic conductivity and excellent electrochemical properties. As a result, they are highly promising as materials in various fields, including energy, bio- and environment-related fields. Although not all ionic liquids have all the aforementioned characteristics, research and development by industry, academia and government is expanding from the acquisition of basic data to the study of practical applications, and developments that "can only be realised with ionic liquids" are being proposed.

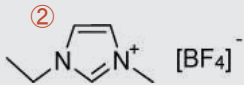
We have about 50 ionic liquids in various combinations of anions and cations.

*[Application example](#)

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① 1-Ethyl-3-methylimidazolium tetrafluoroborate	⑩	⑪	⑫
 ③ 143314-16-3 ④ C₆H₁₁N₂BF₄ ⑤ 198.0 ⑥ 15 °C ⑦ 34 cP (25 °C) ⑧ d 1.28 (24 °C) ⑨ 14.1 mS/cm (25 °C)	14644-53 14644-33		5 mL 25 mL

① Name	② Structure	③ CAS RN®	④ Formula
⑤ Formula weight	⑥ Melting point	⑦ Viscosity	⑧ Density(Specific gravity)
⑨ Conductivity	⑩ Product No.	⑪ Grade	⑫ Package

 Grade

The purity item is left blank, but each product has its own guaranteed items such as moisture value.
Please refer to the “Cica-Web” on our website. Regulations are also listed.

※Colour of products

We are trying to make our products as colourless and transparent as possible, but due to the current manufacturing process, there are products with a strong colour tone even in high-purity products. We ask for your understanding.

 Physical property

The physical properties values vary from literature to literature due to the influence of small amounts of impurities resulting from differences in synthesis methods.

Some compounds in this catalogue have actual measured values specified, but these are basically based on literature values. We ask for your understanding that these are reference data.

• EMIm X (25 °C)

Anion	Melting point (°C)	Density (g/cm ³)	Viscosity (mPa·s)	Conductivity (mS/cm)
BF ₄ ⁻	11 ¹⁾ , 15 ²⁾	1.24 ¹⁾ , 1.28 ²⁾	43 ¹⁾ , 31.8 ²⁾	13.0 ¹⁾ , 13.6 ²⁾
PF ₆ ⁻	62 ¹⁾	1.56 ¹⁾	-	5.2 ¹⁾
CH ₃ SO ₃ ⁻	39 ³⁾	1.25 ³⁾	160 ³⁾	2.7 ³⁾
CF ₃ SO ₃ ⁻	-10 ³⁾ , -9 ⁴⁾	1.383 ³⁾	42.7 ³⁾	9.29 ³⁾
[(CF ₃ SO ₂) ₂ N] ⁻	-15 ¹⁾ , -16 ²⁾	1.52 ¹⁾ , *, 1.518 ²⁾	28 ¹⁾ , 40.7 ²⁾	8.4 ¹⁾ , 5.7 ²⁾
[(C ₂ F ₅ SO ₂) ₂ N] ⁻	-1 ¹⁾ , -19 ⁵⁾	-	61 ¹⁾	3.4 ¹⁾

※ 22 °C

1) A. A.B. McEwen, H.L.Ngo, K. LeCompte, and J.L.Goldman, *J.Electrochem. Soc.*, 146, 1687 (1999)

2) A.Noda, K.Hayamizu, and M.Watanabe, *J.Phys. Chem.*, B, 105, 4603 (2001)

3) E.I. Cooper and E.J.M. O' Sullivan, *Proc. Of 8th Int. Symp.*, 382 (1992)

4) P.BonHote, A.-P.Dias, M.Armand, N.Papageorgiou, K.kalyanasundaram, and M.Gratzle, *Inorg. Chem.*, 35, 1168 (1996)

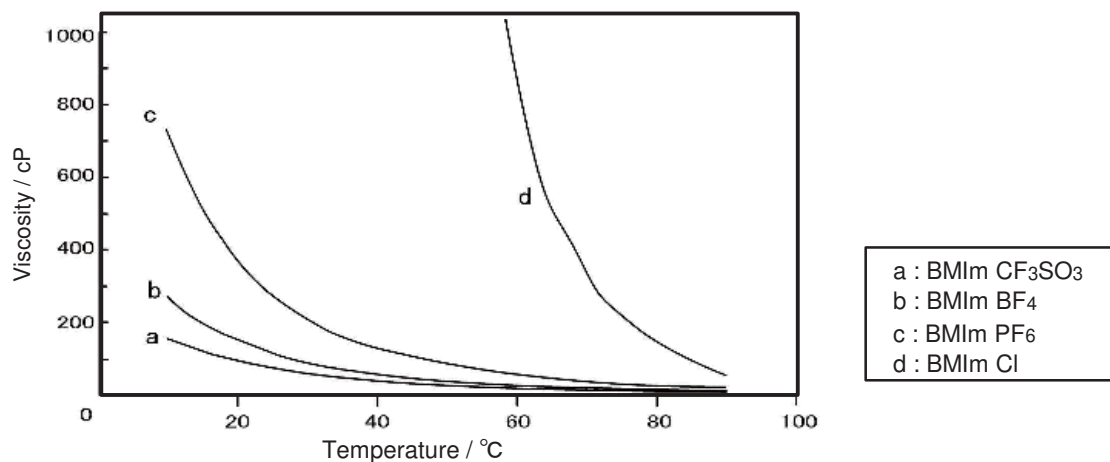
5) M.Yosizawa, W.Ogihara, and H.Ohno, *Electrochem.Solid-State Lett.*, 4, E25 (2001)



Viscosity by temperature change

The relationship between temperature and viscosity is shown as follows for the typical ionic liquids, 1-Butyl-3-methylimidazolium triflate, 1-Butyl-3-methylimidazolium tetrafluoroborate, 1-Butyl-3-methylimidazolium hexafluorophosphate and 1-Butyl-3-methylimidazolium chloride.

From the following figure, it can be seen that the viscosity changes significantly with slight changes in temperature and that differences in the constituent ions have a significant effect on the viscosity.

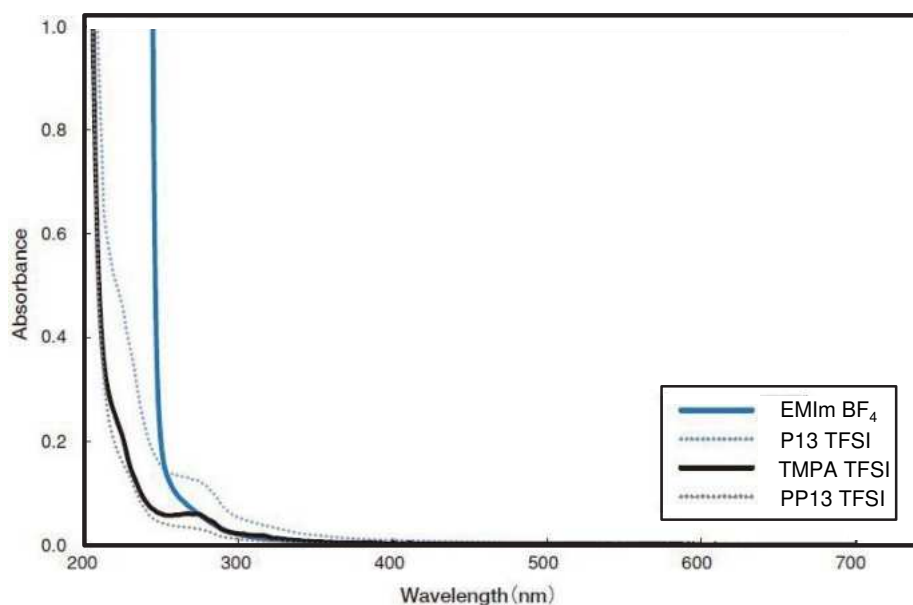


Viscosity by temperature change



Ultraviolet-visible absorption spectrum

Ultraviolet-visible absorption spectrum is shown as follows for the typical ionic liquids, 1-Ethyl-3-methylimidazolium tetrafluoroborate, *N*-Methyl-*N*-propylpyrrolidinium bis(trifluoromethanesulfonyl)imide, *N,N,N*-Trimethyl-*N*-propylammonium bis(trifluoromethanesulfonyl)imide, *N*-Methyl-*N*-propylpiperidinium bis(trifluoromethanesulfonyl)imide. EMIm BF₄ has a slight absorption, but little absorption is observed in the visible range (350-700 nm), making it colorless in appearance.



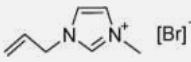
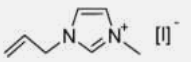
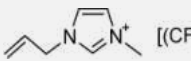
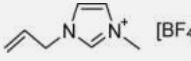
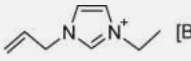
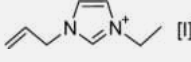
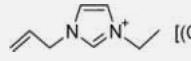
Ultraviolet-visible absorption spectrum

1-allyl-3-alkylimidazolium ionic liquids

Among the 1-allyl-3-alkylimidazolium ionic liquids developed by Prof. Ohno and his colleagues⁶⁾ at the Tokyo University of Agriculture and Technology, typical compounds have been commercialised. They are more polar than conventional ionic liquids and are expected to dissolve a wide range of compounds.

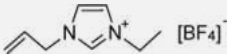
6) T. Mizuno, E. Marwanta, N. Matsumi, and H. Ohno, *Chem. Lett.*, 33, 204, 1360.

Item List

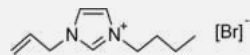
1-Allyl-3-methylimidazolium bromide				【AMIm Br】
	31410-07-8	01986-55	for advanced material research	5g
	C ₇ H ₁₁ BrN ₂	01986-35	for advanced material research	25g
	203.1	01986-15	for advanced material research	250g
58°C	1.60 mS/cm			
1-Allyl-3-methylimidazolium iodide				【AMIm I】
	65039-07-8	01120-35	for advanced material research	25g
	C ₇ H ₁₁ IN ₂	01120-25	for advanced material research	100g
	250.1			
57°C				
1-Allyl-3-methylimidazolium bis(trifluoromethanesulfonyl)imide				【AMIm TFSA】
	655249-87-9	01988-55	for advanced material research	5mL
	C ₉ H ₁₁ F ₆ N ₃ O ₄ S ₂	01988-35	for advanced material research	25mL
	403.3	01988-15	for advanced material research	250mL
35 cP	1.49	8.87 mS/cm		
1-Allyl-3-methylimidazolium tetrafluoroborate				【AMIm BF4】
	851606-63-8	01987-55	for advanced material research	5mL
	C ₇ H ₁₁ BF ₄ N ₂	01987-35	for advanced material research	25mL
	210	01987-15	for advanced material research	250mL
1-Allyl-3-ethylimidazolium bromide				【AEIm Br】
	652134-09-3	01930-55	for advanced material research	5g
	C ₈ H ₁₃ BrN ₂	01930-35	for advanced material research	25g
	217.1	01930-15	for advanced material research	250g
1-Allyl-3-ethylimidazolium iodide				【AEIm I】
	920981-07-3	01119-35	for advanced material research	25mL
	C ₈ H ₁₃ IN ₂	01119-25	for advanced material research	100mL
	264.1			
1-Allyl-3-ethylimidazolium bis(trifluoromethanesulfonyl)imide				【AEIm TFSA】
	652134-11-7	01932-55	for advanced material research	5mL
	C ₁₀ H ₁₃ F ₆ N ₃ O ₄ S ₂	01932-35	for advanced material research	25mL
	417.4	01932-15	for advanced material research	250mL

1-allyl-3-alkylimidazolium ionic liquids

1-Allyl-3-ethylimidazolium tetrafluoroborate 【AEIm BF4】

	945732-42-3	01931-55	for advanced material research	5mL
	C ₈ H ₁₃ BF ₄ N ₂	01931-35	for advanced material research	25mL
	224	01931-15	for advanced material research	250mL

1-Allyl-3-butylimidazolium bromide 【ABIm Br】

	863498-30-0	01933-55	for advanced material research	5mL
	C ₁₀ H ₁₇ BrN ₂	01933-35	for advanced material research	25mL
	245.2	01933-15	for advanced material research	250mL

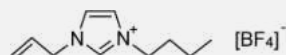
0.50 mS/cm

1-Allyl-3-butylimidazolium bis(trifluoromethanesulfonyl)imide 【ABIm TFSA】

	863498-34-4	01935-55	for advanced material research	5mL
	C ₁₂ H ₁₇ F ₆ N ₃ O ₄ S ₂	01935-35	for advanced material research	25mL
	445.4	01935-15	for advanced material research	250mL

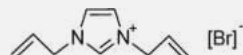
1.53 mS/cm

1-Allyl-3-butylimidazolium tetrafluoroborate 【ABIm BF4】

	863498-32-2	01934-55	for advanced material research	5mL
	C ₁₀ H ₁₇ BF ₄ N ₂	01934-35	for advanced material research	25mL
	252.1	01934-15	for advanced material research	250mL

1.22 mS/cm

1,3-Diallylimidazolium bromide 【AAIm Br】

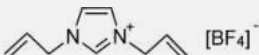
	31483-71-3	11475-55	for advanced material research	5mL
	C ₉ H ₁₃ BrN ₂	11475-35	for advanced material research	25mL
	229.1	11475-15	for advanced material research	250mL

0.74 mS/cm

1,3-Diallylimidazolium bis(trifluoromethanesulfonyl)imide 【AAIm TFSA】

	803732-17-4	11477-55	for advanced material research	5mL
	C ₁₁ H ₁₃ F ₆ N ₃ O ₄ S ₂	11477-35	for advanced material research	25mL
	429.4	11477-15	for advanced material research	250mL

1,3-Diallylimidazolium tetrafluoroborate 【AAIm BF4】

	852699-06-0	11476-55	for advanced material research	5mL
	C ₉ H ₁₃ BF ₄ N ₂	11476-35	for advanced material research	25mL
	236	11476-15	for advanced material research	250mL

1-allyl-3-alkylimidazolium ionic liquids

Solubility

- Compatibility when mixed with various solvents (Volume ratio 1:1)

Solvent	AMIm Br	AMIm TFSI	AMIm BF ₄	AEIm Br	AEIm TFSI	AEIm BF ₄
Water	○	×	○	○	×	○
Methanol	○	○	○	○	○	○
Ethanol	○	○	×	○	○	△※ ²
2-propanol	○	○	×	○	○	×
Acetone	×	○	○	△	○	○
Ethyl acetate	×	○	△	×	○	△※ ³
Acetonitrile	○	○	○	○	○	○
Tetrahydrofuran	×	○	×	×	○	△※ ²
Diethyl ether	×	△	×	×	△※ ¹	×
Hexane	×	×	×	×	×	×
Toluene	×	△	×	×	△※ ¹	×
Dichloromethane	○	○	○	○	○	○
Chloroform	○	○	○	○	○	○

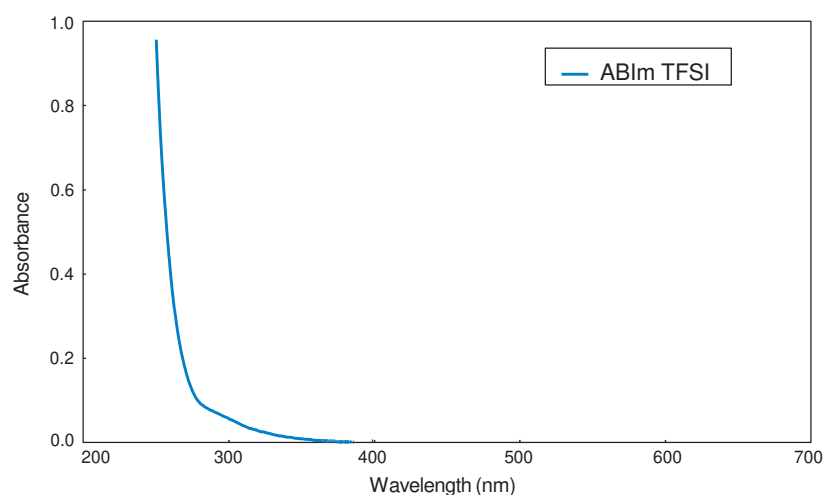
Solvent	ABIm Br	ABIm BF ₄	ABIm TFSI	AAIm Br	AAIm BF ₄	AAIm TFSI
Water	○	×	×	○	△※ ²	×
Methanol	○	○	○	○	○	○
Ethanol	○	○	○	○	△※ ⁵	○
2-propanol	○	○	○	○	△※ ³	○
Acetone	○	○	○	○	○	○
Ethyl acetate	×	○	○	×	△※ ⁶	○
Acetonitrile	○	○	○	○	○	○
Tetrahydrofuran	×	○	○	×	○	○
Diethyl ether	×	×	○	×	×	△※ ⁶
Hexane	×	×	×	×	×	×
Toluene	×	△※ ⁴	×	×	×	△※ ⁶
Dichloromethane	○	○	○	○	○	○
Chloroform	○	○	○	○	○	○

○ : Dissolve △ : Partly dissolved × : Insoluble

※¹ : 80% dissolved ※² : 40% dissolved
 ※³ : 30% dissolved ※⁴ : 70% dissolved
 ※⁵ : 50% dissolved ※⁶ : 90% dissolved

Ultraviolet-visible absorption spectrum

1-Allyl-3-butylimidazolium bis(trifluoromethanesulfonyl)imide (ABIm TFSI), a typical ionic liquid with allyl groups, is colourless in appearance and has little absorption observed in the visible range (350 ~ 700 nm).



Cellulose soluble ionic liquid

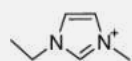
We commercialize a phosphonate-based ionic liquid, which has been actively researched by Prof. Ohno of the Tokyo University of Agriculture and Technology.

This compound has a highly polar phosphoric acid derivative as an anion and can dissolve cellulose under mild conditions ⁷⁾.

7) JY. Fukaya, K. Hayashi, M. Wada, and H. Ohno, *Green Chem.*, 2008, 10, 44-46.

Item List

1-Ethyl-3-methylimidazolium methylphosphonate



1137959-66-0

C₇H₁₅N₂O₃P

206.2

[14670-35](#)

for advanced material research

25 mL

[14670-25](#)

for advanced material research

100 mL

Solubility

●Compatibility when mixed with various solvents (Volume ratio 1:1)

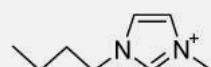
Solvent	1-Ethyl-3-methylimidazolium methylphosphonate
Water	○
Methanol	○
Ethanol	○
Acetone	○
Ethyl acetate	×
Acetonitrile	○
Tetrahydrofuran	△
Diethyl ether	×
Hexane	×
Toluene	×
Dichloromethane	○
Chloroform	○

○ : Dissolve △ : Partly dissolved × : Insoluble

Related item

1-Butyl-3-methylimidazolium chloride

【BMIm Cl】



79917-90-1

C₈H₁₅ClN₂

174.7

[05068-53](#)

for advanced material research

5 g

[05068-33](#)

for advanced material research

25 g

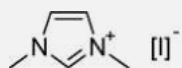
65°C

Iodine-based ionic liquids

Iodine-based ionic liquids have long been considered in fields such as dye-sensitized solar cells, but some products have been found to be colored due to iodine. This product is an ionic liquid with extremely low coloration.

Item List

1,3-Dimethylimidazolium iodide



4333-62-4

$C_5H_9IN_2$

224

[10506-35](#)

for advanced material research

25 g

[10506-25](#)

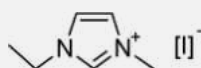
for advanced material research

100 g

88°C

1-Ethyl-3-methylimidazolium iodide

【EMIm I】



35935-34-3

$C_6H_{11}IN_2$

238.1

[14669-35](#)

for advanced material research

25 g

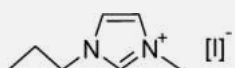
[14669-25](#)

for advanced material research

100 g

80-85°C

1-Methyl-3-propylimidazolium iodide



119171-18-5

$C_7H_{13}IN_2$

252.1

[32520-35](#)

for advanced material research

25 mL

[32520-25](#)

for advanced material research

100 mL

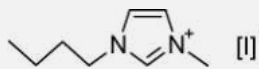
935 cP

1.54

0.96 mS/cm

1-Butyl-3-methylimidazolium iodide

【BMIm I】



65039-05-6

$C_8H_{15}IN_2$

266.1

[04235-35](#)

for advanced material research

25 mL

[04235-25](#)

for advanced material research

100 mL

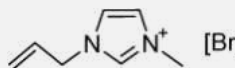
-72°C

1183 cP

1.48

0.52 mS/cm

1-Hexyl-3-methylimidazolium iodide



178631-05-5

$C_{10}H_{19}IN_2$

294.2

[18010-35](#)

for advanced material research

25 mL

[18010-25](#)

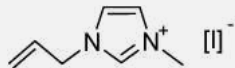
100 mL

1730 cP

0.25 mS/cm

1-Allyl-3-methylimidazolium iodide

【AMIm I】



65039-07-8

$C_7H_{11}IN_2$

250.1

[01120-35](#)

for advanced material research

25g

[01120-25](#)

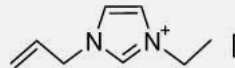
for advanced material research

100g

57°C

1-Allyl-3-ethylimidazolium iodide

【AEIm I】



920981-07-3

$C_8H_{13}IN_2$

264.1

[01119-35](#)

for advanced material research

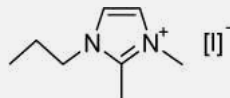
25mL

[01119-25](#)

for advanced material research

100mL

1,2-Dimethyl-3-propylimidazolium iodide



218151-78-1

$C_8H_{15}IN_2$

266.1

[11507-35](#)

for advanced material research

25 g

[11507-25](#)

for advanced material research

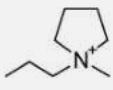
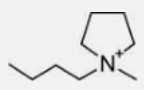
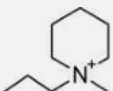
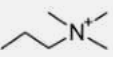
100 g

94°C

Pick up 1

Aliphatic ionic liquids developed by Mr. Matsumoto and his team at the National Institute of Advanced Industrial Science and Technology (AIST) have been commercialized.

Item List

1-Methyl-1-propylpyrrolidinium bis(trifluoromethanesulfonyl)imide					[P13 TFSA]	
 $[(CF_3SO_2)_2N]^-$	223437-05-6	26050-55	for advanced material research	5 mL		
	$C_{10}H_{18}F_6N_2O_4S_2$	26050-35	for advanced material research	25 mL		
	408.4					
59 cP	1.43	4.92 mS/cm				
1-Butyl-1-methylpyrrolidinium bis(trifluoromethanesulfonyl)imide					[P14 TFSA]	
 $[(CF_3SO_2)_2N]^-$	223437-11-4	26125-53	for advanced material research	5 mL		
	$C_{11}H_{20}F_6N_2O_4S_2$	26125-33	for advanced material research	25 mL		
	422.4					
-18°C	72 cP	1.4	2.12 mS/cm			
1-Methyl-1-propylpiperidinium bis(trifluoromethanesulfonyl)imide					[PP13 TFSA]	
 $[(CF_3SO_2)_2N]^-$	608140-12-1	26039-53	for advanced material research	5 mL		
	$C_{11}H_{20}F_6N_2O_4S_2$	26039-33	for advanced material research	25 mL		
	422.4					
176 cP	1.41	2.12 mS/cm				
N,N,N-Trimethyl-N-propylammonium bis(trifluoromethanesulfonyl)imide					[TMPA TFSA]	
 $[(CF_3SO_2)_2N]^-$	268536-05-6	41110-53	for advanced material research	5 mL		
	$C_8H_{16}F_6N_2O_4S_2$	41110-33	for advanced material research	25 mL		
	382.3					

Solubility and potential window

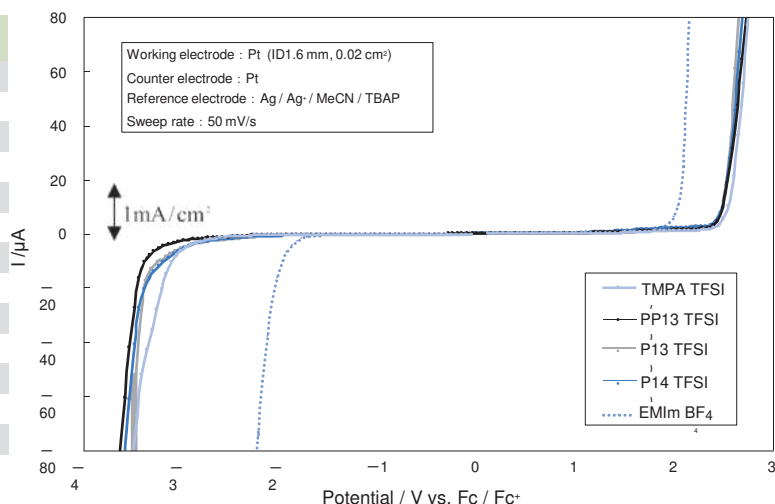
•Compatibility when mixed with various solvents (Volume ratio 1:1)

Solvent	P13 TFSA	P14 TFSA	PP13 TFSA	TMPA TFSA
Water	×	×	×	×
Methanol	○	○	○	○
Ethanol	○	○	○	○
2- propanol	○	○	○	○
Acetone	○	○	○	○
Ethyl acetate	○	○	○	○
Acetonitrile	○	○	○	○
Tetrahydrofuran	○	○	○	○
Diethyl Ether	△※ ¹	△※ ⁴	×	△※ ¹
Hexane	×	×	×	×
Toluene	△※ ³	△※ ³	△※ ³	△※ ²
Dichloromethane	○	○	○	○
Chloroform	○	○	○	○

○ : Dissolve
 △ : Partly dissolved
 × : Insoluble

※¹ : 20% dissolved
 ※² : 50% dissolved
 ※³ : 90% dissolved
 ※⁴ : 40% dissolved

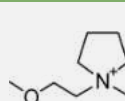
•Potential window for each ionic liquid



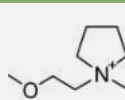
Pick up 2 ~ Nisshinbo Holdings Inc. ionic liquids

Item List

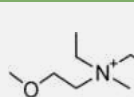
1-(2-Methoxyethyl)-1-methyl-pyrrolidinium bis(trifluoromethanesulfonyl)imide 【MEMP TFSA】

	757240-24-7	25966-55	for advanced material research	5mL
	C ₁₀ H ₁₈ F ₆ N ₂ O ₅ S ₂	25966-35	for advanced material research	25mL
	424.4	25966-05	for advanced material research	500g

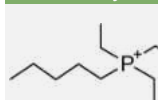
1-(2-Methoxyethyl)-1-methyl-pyrrolidinium tetrafluoroborate 【MEMP BF4】

	464927-76-2	25967-45	for advanced material research	10mL
	C ₈ H ₁₈ BF ₄ NO	25967-25	for advanced material research	100mL
	231	25967-05	for advanced material research	500g

N,N-Diethyl-N-methyl-N-(2-methoxyethyl)ammonium bis(trifluoromethanesulfonyl)imide 【DEME TFSA】

	464927-84-2	11468-55	for advanced material research	5 mL
	C ₁₀ H ₂₀ F ₆ N ₂ O ₅ S ₂	11468-35	for advanced material research	25 mL
	426.4			

N,N-Diethyl-N-methyl-N-(2-methoxyethyl)ammonium tetrafluoroborate 【DEME BF4】

	464927-72-8	11469-45	for advanced material research	10 mL
	C ₈ H ₂₀ NOBF ₄	11469-25	for advanced material research	100 mL
	233.1			
1.24 mS/cm				

Solubility

●Compatibility when mixed with various solvents (Volume ratio 1:1)

Solvent	MEMP TFSA	MEMP BF ₄	DEME TFSA	DEME BF ₄
Water	×	○	×	○
Methanol	○	○	○	○
Ethanol	○	△※ ¹	○	△※ ³
2- propanol	○	△※ ²	△※ ²	△※ ⁴
Acetone	○	○	○	○
Ethyl acetate	○	△※ ¹	○	×
Acetonitrile	○	○	○	○
Tetrahydrofuran	○	△※ ³	○	△※ ³
Hexane	×	×	×	×
Toluene	○	×	×	×
Chloroform	○	○	○	○

○ : Dissolve

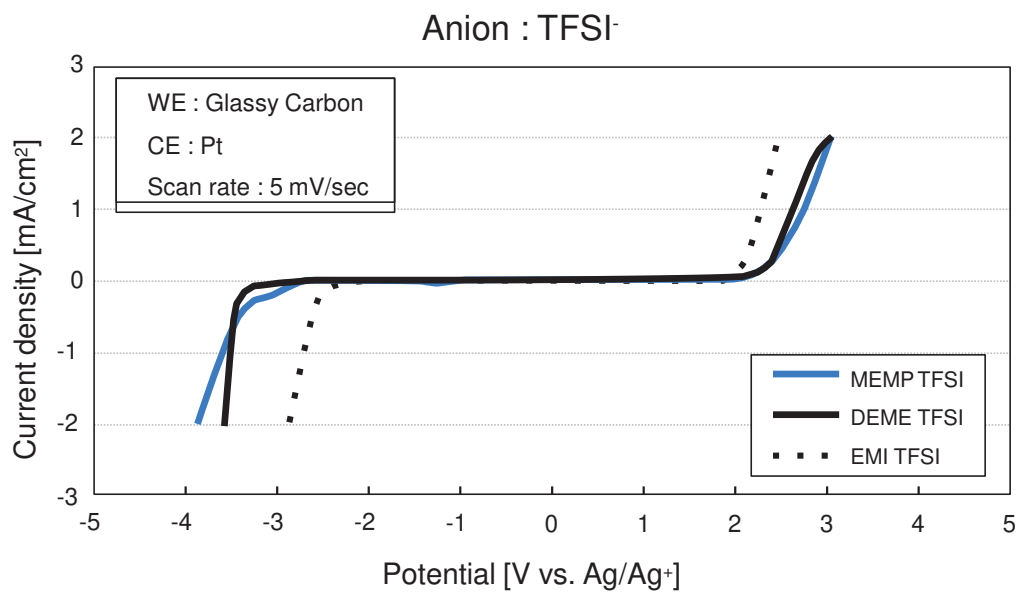
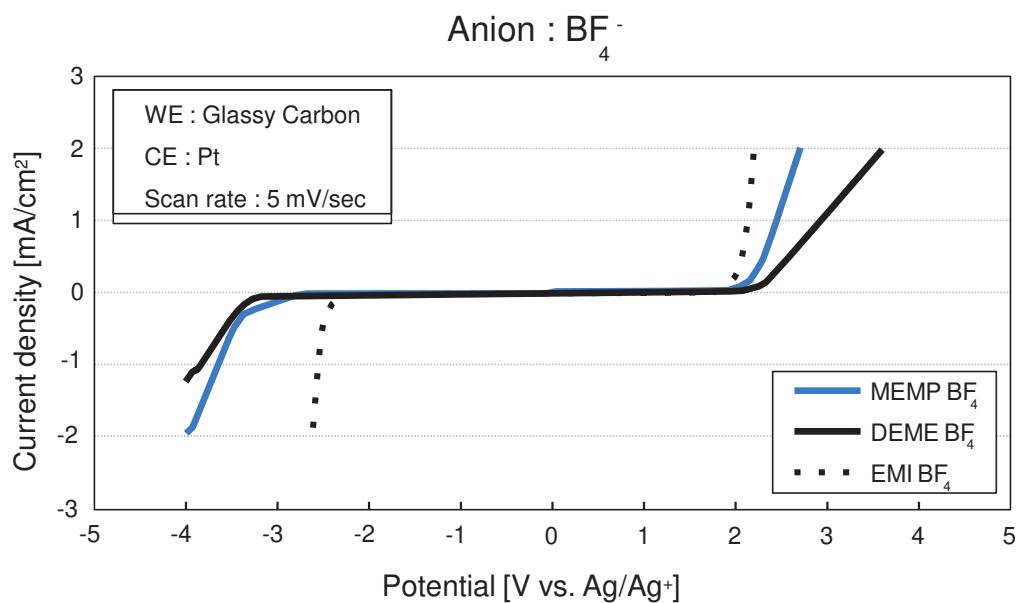
△ : Partly dissolved

×

※ 1 : 30% dissolved
 ※ 2 : 10% dissolved
 ※ 3 : 20% dissolved
 ※ 4 : max. 10% dissolved

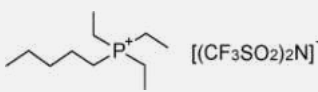
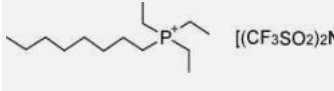
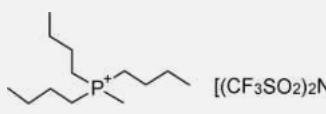
Pick up 2 ~ Nisshinbo Holdings Inc. ionic liquids

Potential window



Pick up 3 ~ Nippon Chemical Industrial Quaternary Phosphonium ionic liquids

Item List

Triethylpentylphosphonium bis(trifluoromethanesulfonyl)imide				【P ₂₂₂₅ TFSA】	
	1010707-47-7	40334-35	for advanced material research	25 mL	
	C ₁₃ H ₂₆ F ₆ NO ₄ PS ₂				
	469.4				
17°C	88 cP	1.32	1.70 mS/cm		
Triethyloctylphosphonium bis(trifluoromethanesulfonyl)imide				【P ₂₂₂₈ TFSA】	
	1002754-38-2	40335-35	for advanced material research	25 mL	
	C ₁₆ H ₃₂ F ₆ NO ₄ PS ₂				
	511.5				
< -50(Tg)	129 cP	1.26	0.98 mS/cm		
Tributylmethylphosphonium bis(trifluoromethanesulfonyl)imide				【P ₄₄₄₁ TFSA】	
	324575-10-2	40336-35	for advanced material research	25 mL	
	C ₁₅ H ₃₀ F ₆ NO ₄ PS ₂				
	497.5				
16°C	207 cP	1.28	0.42 mS/cm		

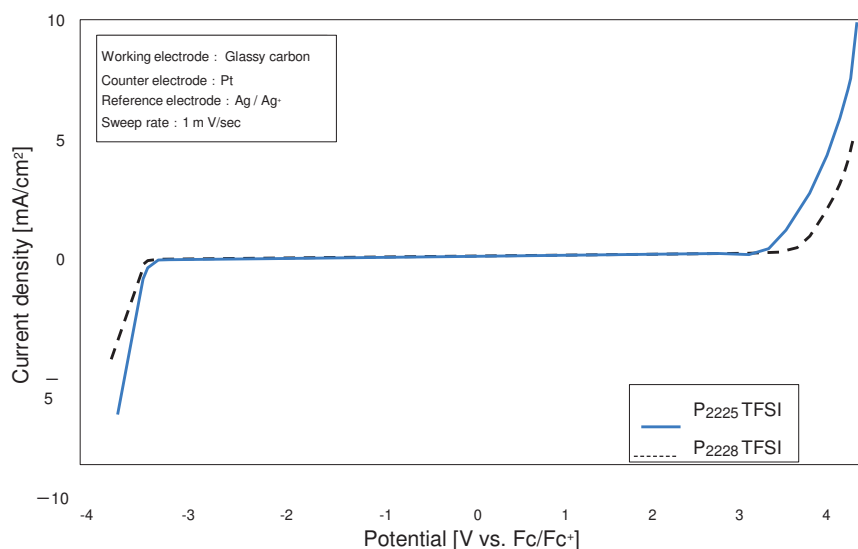
Solubility

- Compatibility when mixed with various solvents (Volume ratio 1:1)

Solvent	P ₂₂₂₅ TFSI	P ₂₂₂₈ TFSI	P ₄₄₄₁ TFSI	P ₂₂₂₍₁₀₁₎ TFSI
Water	×	×	○	×
Methanol	○	○	○	○
Ethanol	○	○	○	○
Acetone	○	○	○	○
Acetonitrile	○	○	○	○
Hexane	×	×	×	×
Chloroform	○	○	○	○

○ : Dissolve , △ : Partly dissolved , × : Insoluble

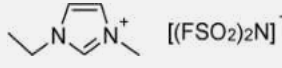
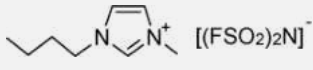
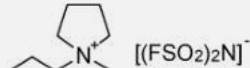
Potential window



FSI (Bis fluorosulfonyl imide) ionic liquids

FSI-based ionic liquids are widely considered as electrolytes for rechargeable batteries due to their superiority over TFSI-based ionic liquids in terms of viscosity and ionic conductivity.

Item List

1-Ethyl-3-methylimidazolium bis (fluorosulfonyl)imide				【EMIm FSA】
	235789-75-0	14697-35	for advanced material research	25 mL
	C ₆ H ₁₁ F ₂ N ₃ O ₄ S ₂			
	291.3			
	-14°C 20 cP 1.45			
1-Butyl-3-methylimidazolium bis(fluorosulfonyl)imide				【BMIm FSA】
	1235234-58-8	05816-35	for advanced material research	25 mL
	C ₈ H ₁₅ F ₂ N ₃ O ₄ S ₂			
	319.4			
	33 cP 1.36			
1-Methyl-1-propylpyrrolidinium bis(fluorosulfonyl)imide				【P13 FSA】
	852620-97-4	25978-35	for advanced material research	25mL
	C ₈ H ₁₈ F ₂ N ₂ O ₄ S ₂			
	308.4			

Solubility

● Compatibility when mixed with various solvents (Volume ratio 1:1)

Solvent	EMIm FSI	BMIm FSI	P13 FSI
Water	×	×	×
Methanol	○	○	○
Ethanol	○	○	○
2- propanol	×	△※ ¹	×
Acetone	○	○	○
Ethyl acetate	○	○	○
Acetonitrile	○	○	○
Tetrahydrofuran	○	○	○
Diethyl ether	×	×	×
Hexane	×	×	×
Toluene	×	○	×
Dichloromethane	○	○	○
Chloroform	○	○	○

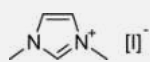
○ : Dissolve , △ : Partly dissolved , × : Insoluble

※ 1 : 10% dissolved

Imidazolium based ionic liquids

1-Alkyl-3-methylimidazolium

1,3-Dimethylimidazolium iodide



4333-62-4
C₅H₉IN₂
224

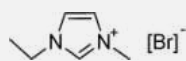
[10506-35](#)
[10506-25](#)

for advanced material research 25 g
for advanced material research 100 g

88°C

1-Ethyl-3-methylimidazolium bromide

【EMIm Br】



65039-08-9
C₆H₁₁BrN₂
191.1

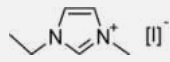
[14609-53](#)
[14609-33](#)

for advanced material research 5 g
for advanced material research 25 g

74°C

1-Ethyl-3-methylimidazolium iodide

【EMIm I】



35935-34-3
C₆H₁₁IN₂
238.1

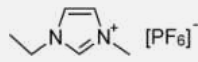
[14669-35](#)
[14669-25](#)

for advanced material research 25 g
for advanced material research 100 g

80-85°C

1-Ethyl-3-methylimidazolium hexafluorophosphate

【EMIm PF₆】



155371-19-0
C₆H₁₁F₆N₂P
256.1

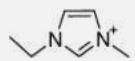
[14643-53](#)
[14643-33](#)

for advanced material research 5 g
for advanced material research 25 g

62°C

1.56

1-Ethyl-3-methylimidazolium methylphosphonate



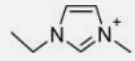
1137959-66-0
C₇H₁₅N₂O₃P
206.2

[14670-35](#)
[14670-25](#)

for advanced material research 25 mL
for advanced material research 100 mL

1-Ethyl-3-methylimidazolium bis (fluorosulfonyl)imide

【EMIm FSA】



235789-75-0
C₆H₁₁F₂N₃O₄S₂
291.3

[14697-35](#)

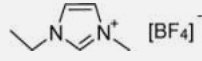
for advanced material research 25 mL

-14°C

20 cP

1.45

1-Ethyl-3-methylimidazolium tetrafluoroborate



143314-16-3
CH₃C₃H₃N₂C₂H₅BF₄
198

[14644-53](#)
[14644-33](#)

for advanced material research 5 mL
for advanced material research 25 mL

15°C

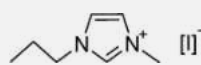
34 cP

1.28

14.1 mS/cm

Imidazolium based ionic liquids

1-Methyl-3-propylimidazolium iodide



119171-18-5

$C_7H_{13}IN_2$

252.1

[32520-35](#)

for advanced material research

25 mL

[32520-25](#)

for advanced material research

100 mL

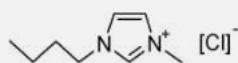
935 cP

1.54

0.96 mS/cm

1-Butyl-3-methylimidazolium chloride

【BMIm Cl】



79917-90-1

$C_8H_{15}ClN_2$

174.7

[05068-53](#)

for advanced material research

5 g

[05068-33](#)

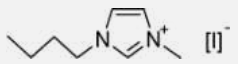
for advanced material research

25 g

65°C

1-Butyl-3-methylimidazolium iodide

【BMIm I】



65039-05-6

$C_8H_{15}IN_2$

266.1

[04235-35](#)

for advanced material research

25 mL

[04235-25](#)

for advanced material research

100 mL

-72°C

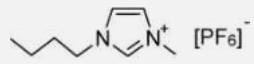
1183 cP

1.48

0.52 mS/cm

1-Butyl-3-methylimidazolium hexafluorophosphate

【BMIm PF₆】



174501-64-5

$CH_3C_3H_3N_2C_4H_9PF_6$

284.2

[05064-53](#)

for advanced material research

5 mL

[05064-33](#)

for advanced material research

25 mL

-8°C

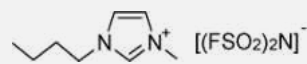
267 cP

1.37

1.37 mS/cm

1-Butyl-3-methylimidazolium bis(fluorosulfonyl)imide

【BMIm FSA】



1235234-58-8

$C_8H_{15}F_2N_3O_4S_2$

319.4

[05816-35](#)

for advanced material research

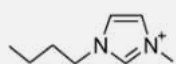
25 mL

33 cP

1.36

1-Butyl-3-methylimidazolium bis(trifluoromethanesulfonyl)imide

【BMIm TFSA】



174899-83-3

$CH_3C_3H_3N_2C_4H_9[(CF_3SO_2)_2N]$

419.4

[05063-53](#)

for advanced material research

5 mL

[05063-33](#)

for advanced material research

25 mL

-4°C

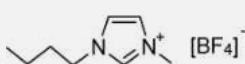
49 cP

1.44

3.41 mS/cm

1-Butyl-3-methylimidazolium tetrafluoroborate

【BMIm BF₄】



174501-65-6

$C_8H_{15}N_2BF_4$

226

[05065-53](#)

for advanced material research

5 mL

[05065-33](#)

for advanced material research

25 mL

-97(Tg)

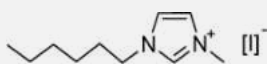
104 cP

1.21

3.15 mS/cm

Imidazolium based ionic liquids

1-Hexyl-3-methylimidazolium iodide



178631-05-5

$C_{10}H_{19}IN_2$

294.2

[18010-35](#)

for advanced material research

25 mL

[18010-25](#)

100 mL

1730 cP

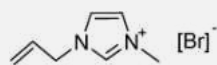
0.25 mS/cm

Imidazolium based ionic liquids

1-Alkyl-3-allylimidazolium

1-Allyl-3-methylimidazolium bromide

【AMIm Br】



31410-07-8

C₇H₁₁BrN₂

203.1

[01986-55](#)

for advanced material research

5g

[01986-35](#)

for advanced material research

25g

[01986-15](#)

for advanced material research

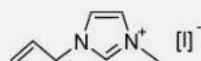
250g

58°C

1.60 mS/cm

1-Allyl-3-methylimidazolium iodide

【AMIm I】



65039-07-8

C₇H₁₁IN₂

250.1

[01120-35](#)

for advanced material research

25g

[01120-25](#)

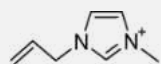
for advanced material research

100g

57°C

1-Allyl-3-methylimidazolium bis(trifluoromethanesulfonyl)imide

【AMIm TFSA】



655249-87-9

C₉H₁₁F₆N₃O₄S₂

403.3

[01988-55](#)

for advanced material research

5mL

[01988-35](#)

for advanced material research

25mL

[01988-15](#)

for advanced material research

250mL

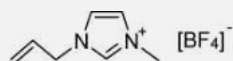
35 cP

1.49

8.87 mS/cm

1-Allyl-3-methylimidazolium tetrafluoroborate

【AMIm BF₄】



851606-63-8

C₇H₁₁BF₄N₂

210

[01987-55](#)

for advanced material research

5mL

[01987-35](#)

for advanced material research

25mL

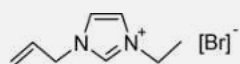
[01987-15](#)

for advanced material research

250mL

1-Allyl-3-ethylimidazolium bromide

【AEIm Br】



652134-09-3

C₈H₁₃BrN₂

217.1

[01930-55](#)

for advanced material research

5g

[01930-35](#)

for advanced material research

25g

[01930-15](#)

for advanced material research

250g

1-Allyl-3-ethylimidazolium iodide

【AEIm I】

920981-07-3

C₈H₁₃IN₂

264.1

[01119-35](#)

for advanced material research

25mL

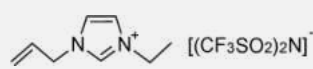
[01119-25](#)

for advanced material research

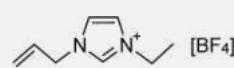
100mL

Imidazolium based ionic liquids

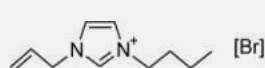
1-Allyl-3-ethylimidazolium bis(trifluoromethanesulfonyl)imide 【AEIm TFSA】

	652134-11-7	01932-55	for advanced material research	5mL
	$C_{10}H_{13}F_6N_3O_4S_2$	01932-35	for advanced material research	25mL
	417.4	01932-15	for advanced material research	250mL

1-Allyl-3-ethylimidazolium tetrafluoroborate 【AEIm BF₄】

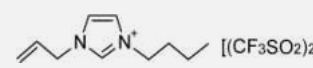
	945732-42-3	01931-55	for advanced material research	5mL
	$C_8H_{13}BF_4N_2$	01931-35	for advanced material research	25mL
	224	01931-15	for advanced material research	250mL

1-Allyl-3-butylimidazolium bromide 【ABIm Br】

	863498-30-0	01933-55	for advanced material research	5mL
	$C_{10}H_{17}BrN_2$	01933-35	for advanced material research	25mL
	245.2	01933-15	for advanced material research	250mL

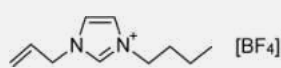
0.50 mS/cm

1-Allyl-3-butylimidazolium bis(trifluoromethanesulfonyl)imide 【ABIm TFSA】

	863498-34-4	01935-55	for advanced material research	5mL
	$C_{12}H_{17}F_6N_3O_4S_2$	01935-35	for advanced material research	25mL
	445.4	01935-15	for advanced material research	250mL

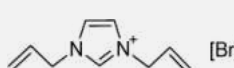
1.53 mS/cm

1-Allyl-3-butylimidazolium tetrafluoroborate 【ABIm BF₄】

	863498-32-2	01934-55	for advanced material research	5mL
	$C_{10}H_{17}BF_4N_2$	01934-35	for advanced material research	25mL
	252.1	01934-15	for advanced material research	250mL

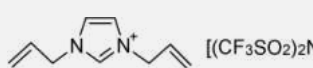
1.22 mS/cm

1,3-Diallylimidazolium bromide 【AAIm Br】

	31483-71-3	11475-55	for advanced material research	5mL
	$C_9H_{13}BrN_2$	11475-35	for advanced material research	25mL
	229.1	11475-15	for advanced material research	250mL

0.74 mS/cm

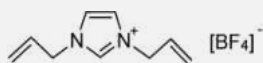
1,3-Diallylimidazolium bis(trifluoromethanesulfonyl)imide 【AAIm TFSA】

	803732-17-4	11477-55	for advanced material research	5mL
	$C_{11}H_{13}F_6N_3O_4S_2$	11477-35	for advanced material research	25mL
	429.4	11477-15	for advanced material research	250mL

Imidazolium based ionic liquids

1,3-Diallylimidazolium tetrafluoroborate

【AAIm BF₄】



852699-06-0

C₉H₁₃BF₄N₂

236

[11476-55](#)

[11476-35](#)

[11476-15](#)

for advanced material research

for advanced material research

for advanced material research

5mL

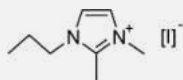
25mL

250mL

Imidazolium based ionic liquids

1,2,3-Alkylimidazolium

1,2-Dimethyl-3-propylimidazolium iodide



218151-78-1

C₈H₁₅IN₂

266.1

[11507-35](#)

for advanced material research

25 g

[11507-25](#)

for advanced material research

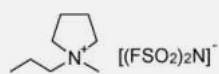
100 g

94°C

Pyrrolidinium based ionic liquids

1-Alkyl-1-methylpyrrolidinium

1-Methyl-1-propylpyrrolidinium bis(fluorosulfonyl)imide 【P13 FSA】



852620-97-4

$C_8H_{18}F_2N_2O_4S_2$

308.4

[25978-35](#)

for advanced material research

25mL

1-Methyl-1-propylpyrrolidinium bis(trifluoromethanesulfonyl)imide 【P13 TFSA】



223437-05-6

$C_{10}H_{18}F_6N_2O_4S_2$

408.4

[26050-55](#)

for advanced material research

5 mL

[26050-35](#)

for advanced material research

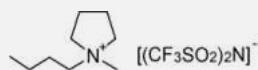
25 mL

59 cP

1.43

4.92 mS/cm

1-Butyl-1-methylpyrrolidinium bis(trifluoromethanesulfonyl)imide 【P14 TFSA】



223437-11-4

$C_{11}H_{20}F_6N_2O_4S_2$

422.4

[26125-53](#)

for advanced material research

5 mL

[26125-33](#)

for advanced material research

25 mL

-18°C

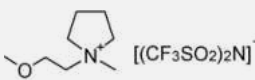
72 cP

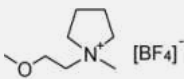
1.4

2.12 mS/cm

Pyrrolidinium based ionic liquids

1-Methyl-1-(X)pyrrolidinium

1-(2-Methoxyethyl)-1-methyl-pyrrolidinium bis(trifluoromethanesulfonyl)imide			【MEMP TFSA】	
	757240-24-7	25966-55	for advanced material research	5mL
	C ₁₀ H ₁₈ F ₆ N ₂ O ₅ S ₂	25966-35	for advanced material research	25mL
	424.4	25966-05	for advanced material research	500g

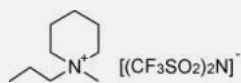
1-(2-Methoxyethyl)-1-methyl-pyrrolidinium tetrafluoroborate			【MEMP BF ₄ 】	
	464927-76-2	25967-45	for advanced material research	10mL
	C ₈ H ₁₈ BF ₄ NO	25967-25	for advanced material research	100mL
	231	25967-05	for advanced material research	500g

Piperidinium based ionic liquids

1-Alkyl-1-methylpiperidinium

1-Methyl-1-propylpiperidinium bis(trifluoromethanesulfonyl)imide

【PP13 TFSA】



608140-12-1

C₁₁H₂₀F₆N₂O₄S₂

422.4

[26039-53](#)

for advanced material research

5 mL

[26039-33](#)

for advanced material research

25 mL

176 cP

1.41

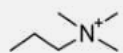
2.12 mS/cm

Ammonium based ionic liquids

Alkylammoniu

N,N,N-Trimethyl-N-propylammonium bis(trifluoromethanesulfonyl)imide

【TMPA TFSA】



268536-05-6

C₈H₁₆F₆N₂O₄S₂

382.3

[41110-53](#)

for advanced material research

5 mL

[41110-33](#)

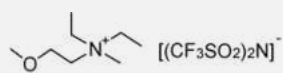
for advanced material research

25 mL

Ammonium based ionic liquids

Ammonium [Others]

N,N-Diethyl-N-methyl-N-(2-methoxyethyl)ammonium bis(trifluoromethanesulfonyl)imide 【DEME TFSA】



464927-84-2

$C_{10}H_{20}F_6N_2O_5S_2$

426.4

[11468-55](#)

for advanced material research

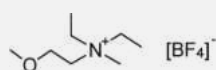
5 mL

[11468-35](#)

for advanced material research

25 mL

N,N-Diethyl-N-methyl-N-(2-methoxyethyl)ammonium tetrafluoroborate 【DEME BF₄】



464927-72-8

$C_8H_{20}NOBF_4$

233.1

[11469-45](#)

for advanced material research

10 mL

[11469-25](#)

for advanced material research

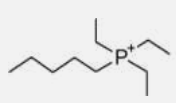
100 mL

1.24 mS/cm

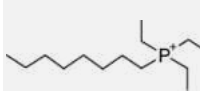
Phosphonium based ionic liquids

Alkylphosphonium

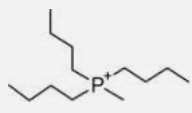
Triethylpentylphosphonium bis(trifluoromethanesulfonyl)imide 【P₂₂₂₅ TFSA】

	1010707-47-7	40334-35	for advanced material research	25 mL
	[(CF ₃ SO ₂) ₂ N] ⁻	C ₁₃ H ₂₆ F ₆ NO ₄ PS ₂		
	469.4			
17°C	88 cP	1.32	1.70 mS/cm	

Triethyloctylphosphonium bis(trifluoromethanesulfonyl)imide 【P₂₂₂₈ TFSA】

	1002754-38-2	40335-35	for advanced material research	25 mL
	[(CF ₃ SO ₂) ₂ N] ⁻	C ₁₆ H ₃₂ F ₆ NO ₄ PS ₂		
	511.5			
< -50(Tg)	129 cP	1.26	0.98 mS/cm	

Tributylmethylphosphonium bis(trifluoromethanesulfonyl)imide 【P₄₄₄₁ TFSA】

	324575-10-2	40336-35	for advanced material research	25 mL
	[(CF ₃ SO ₂) ₂ N] ⁻	C ₁₅ H ₃₀ F ₆ NO ₄ PS ₂		
	497.5			
16°C	207 cP	1.28	0.42 mS/cm	

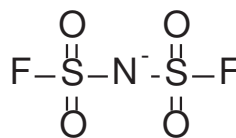
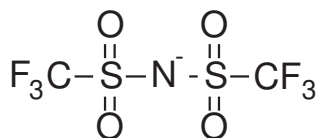
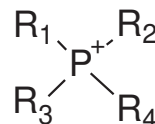
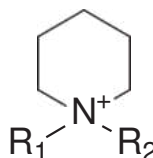
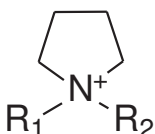
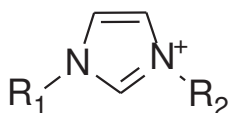
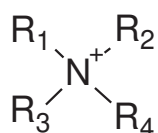
Related products

Name	CAS RN®	Formula weight	Product Code	Package
Lithium bis(fluorosulfonyl)imide	171611-11-3	187.1	24076-55	5 g
			24076-35	25 g
Lithium bis(trifluoromethanesulfonyl)imide	90076-65-6	287.1	24290-35	25 g
			24290-15	250 g
			24290-95	2 kg
Potassium bis(trifluoromethanesulfonyl)imide	90076-67-8	319.2	33005-35	25 g
			33005-15	250 g
			33005-95	2 kg
1,1,1-Trifluoro- <i>N</i> -[(trifluoromethyl)-sulfonyl]methanesulfonamide	82113-65-3	281.2	41075-35	25 g
			41075-15	250 g
			41075-95	2 kg
Lithium bis(nonafluorobutanesulfonyl)imide	119229-99-1	587.1	24039-65	1 g
			24039-55	5 g
Potassium bis(nonafluorobutanesulfonyl)imide	129135-87-1	619.3	33008-55	5 g
1,1,2,2,3,3,4,4,4-Nonafluoro- <i>N</i> -[(nonafluorobutyl)sulfonyl]-1-butanesulfonamide	39847-39-7	581.2	28395-65	1 g
			28395-55	5 g



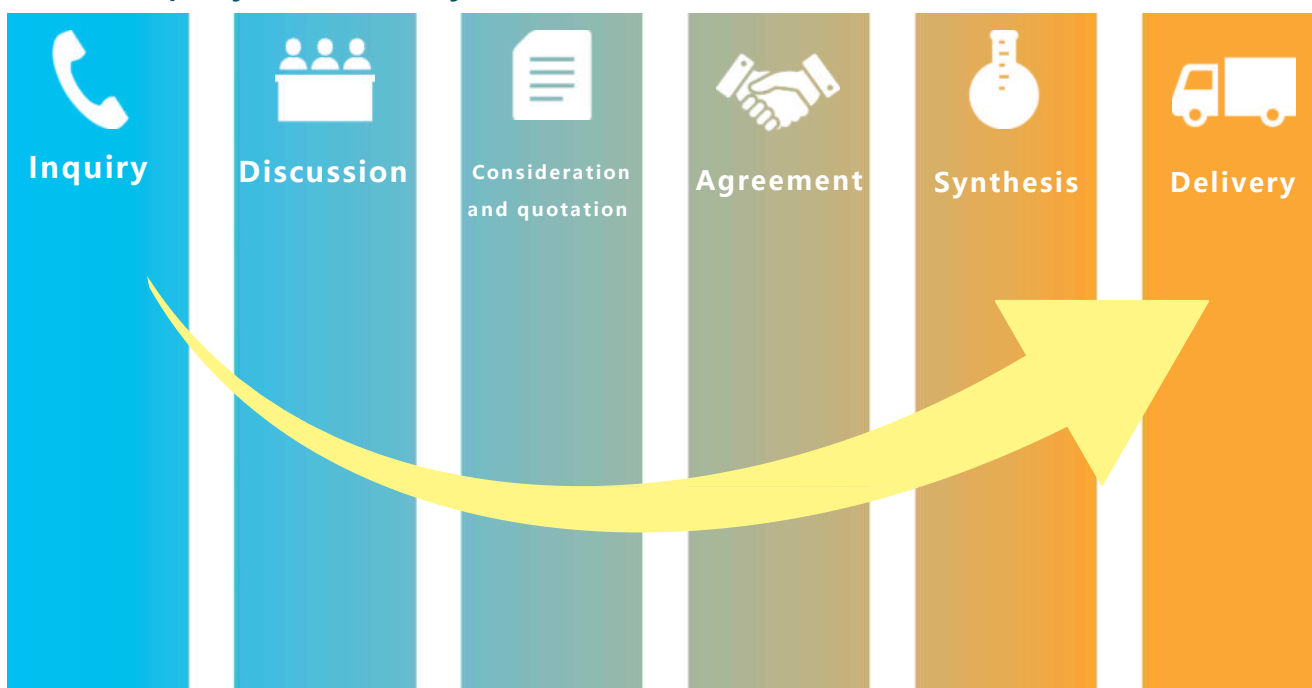
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Ionic liquids are known to change their physico-chemical properties, such as viscosity, polarity, hydrophilicity and hydrophobicity, depending on the combination of their constituent cations and anions. For this reason, ionic liquids are being investigated for practical applications, such as electrolytes for next-generation secondary batteries, cellulose dissolvers, gas absorbers and lubricants, as liquids with distinctive functions. Our ionic liquids are characterised by their high quality with minimal impurities, and we have experience in the contract synthesis of a wide range of ionic liquids. Furthermore, we can supply ionic liquids on a variety of scales, from research to production applications. If you have a specific ionic liquid, grade or quantity you require, please contact us.



etc...

From Inquiry to Delivery



*If necessary, we will conclude a confidentiality agreement.

*In the event that synthesis is difficult, or it is predicted that the customer's request will not be met, we may decline the request.



- Please use the products listed in the catalog as reagents (chemicals used for testing or research purpose).
- Product information is subject to change without notice. For the latest information, please have a look at our website "Cica-Web".



KANTO CHEMICAL CO., INC.

REAGENT DIVISION

2-1, Nihonbashi Muromachi 2-chome, Chuo-ku, Tokyo, 103-0022, Japan

TEL : +81-3-6214-1092

E-mail : kanto-61@kanto.co.jp

Website: <https://www.kanto.co.jp>