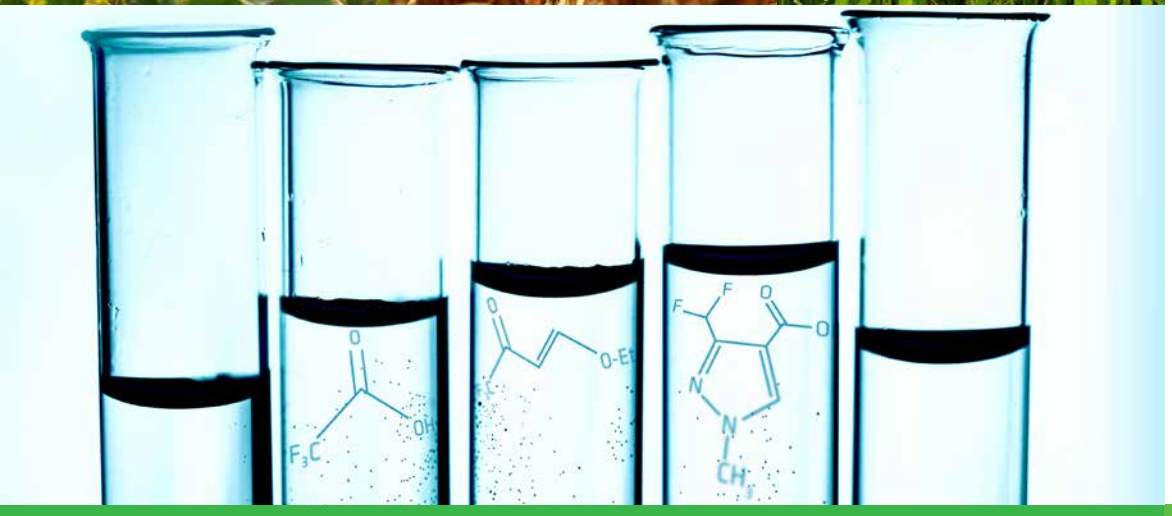
SOLVAY

asking more from chemistry®



ORGANICS

Organic Fluorinated Building Blocks

Raw materials & Advanced Intermediates

MARKETS & APPLICATIONS

Organic fluorinated building blocks: raw materials & advanced intermediates

The use of organic fluorinated intermediates has grown to become a key component for many block-busters in the agrochemical and pharmaceutical Industry.

Using our long-term knowledge, experience and capabilities in fluorine chemistry, we provide you with excellent products based on efficient production processes.

Ca. 30 % of drugs and 50 % of crop protection products under development contain fluorine. Capitalizing on an extensive expertise in fluorine chemistry, we provide fluorinated molecules, from raw material to active ingredients, based on state of the art production processes.

AGROCHEMICALS

Fluorine confers differentiating biological properties that makes its insertion on organic molecules attractive, as confirmed by the increasing number of fluorinated intermediates under development in the agro science industry (appr. 50 %).

We pursue a focus strategy to develop competitive processes that are safe to operate, sustainable and yield the required quality for existing fluorinated molecules for the agrochemicals industry.

We develop new routes to existing commercial fluorinated molecules that are cost competitive thanks to our expertise in fluorine chemistry.

We produce in-house or through our toller network, following the most stringent HSE standards developed at Solvay, based on a technical package released from our research and development center.

INDUSTRIAL APPLICATIONS

Electronic and Coating Additives

Our aliphatic fluorinated building blocks can be used for a variety of applications such as:

- Electronic conducting materials
- Coating materials for flat panel displays, touch screens and finger print scanners

Solvents and Catalysts

Fluorinated acids, alcohols as well as our ketones have excellent solvent properties.

They are used as:

- Solvents in chemical reactions
- Catalyst for silicone and alkylation reaction

PHARMACEUTICALS

We deliver the pharmaceutical industry with fluorinated raw materials from our commercial CF_2/CF_3 product tree.

A growing number of blockbuster drugs contain fluorine atoms:

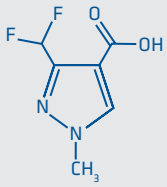
- Analgesics
- Anesthetics
- Antibiotics
- Anticancer agents
- Antiviral
- Anti-HIV

PRODUCTS

We offer a broad range of fluorinated products such as:

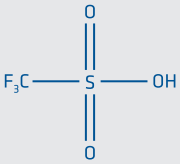
- Trifluoroacetylchloride
- Trifluoroacetic acid and its derivatives
- Triflic acid and its derivatives
- ETFBO and downstream products
- Fluorinated heterocycles Pyrazoles, Pyrimidinones and Pyridones

CF_2-Key Building Block for Several SDHI Fungicides



DFMPA – 3-(difluoromethyl)-1-methyl-1H-pyrazole-4-carboxylic acid

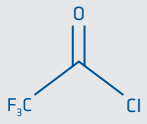
Super Acid for Catalysis Needs



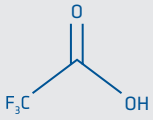
TA – Trifluoromethane sulfonic acid or Triflic Acid

Triflic acid is the strongest Brønsted acid available at industrial scale

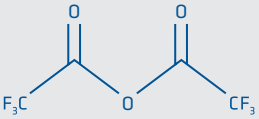
Building Blocks for Increasing Efficiency of Active Ingredients



TFAC – Trifluoroacetyl chloride



TFA – Trifluoroacetic acid



TFAH – Trifluoroacetic acid anhydride

ETFBO

4-ETHOXY-1,1,1-TRIFLUORO-3-BUTEN-2-ONE

A versatile intermediate with multiple reactive centers that grant you access to a wide variety of products.

ETFBO DOWNSTREAM PRODUCTS

- TFPZO 3-(Trifluoromethyl)-1H-pyrazole
- ETFPMOC Ethyl 2-oxo-6-(trifluoromethyl)-1,2-dihydropyridine-3-carboxylate
- TFPMO 6-(Trifluoromethyl)-pyrimidin-2(1H)-one
- ATFBO Family of (Z)-4-(Dialkyl amino)-1,1,1-Trifluorobut-3-en-2-one

TECHNOLOGIES

- Fluorinations with elemental fluorine (F_2)
- Gas and liquid phase fluorination (HF, NR_3*HF)
- Photo-oxidation

PRODUCT OVERVIEW

Fluorinated Products	Chemical Name	Abbrev	CAS Number
Acid Chlorides	Trifluoroacetyl chloride	TFAC	354-32-5
Alcohols	2,2,2-Trifluoroethanol	TFE	75-89-8
Alkanes	1,1-Dichloro-2,2,2-trifluoroethane (SOLKANE® 123)	S123	306-83-2
	1,1,1,3,3-Pentafluorobutane (SOLKANE® 365mfc)	S365mfc	406-58-6
Amines	2,2,2-Trifluoroethylamine	TFEA	753-90-2
Acids	Chlorodifluoroacetic acid	CDFA	76-04-0
	Trifluoroacetic acid	TFA	76-05-1
	Trifluoromethanesulfonic acid	TA	1493-13-6
Anhydrides	Trifluoroacetic acid anhydride	TFAH	407-25-0
	Trifluoromethanesulfonic anhydride	TAA	358-23-6
Esters and Acetoacetates	Difluoroacetic acid ethyl ester	DFAEt	454-31-9
	Trifluoroacetic acid ethyl ester	TFAEt	383-63-1
	Trifluoroacetic acid isopropyl ester	TFAiP	400-38-4
	Trifluoroacetic acid methyl ester	TFAMe	431-47-0
Ketones	4-Ethoxy-1,1,1-trifluoro-3-buten-2-one	ETFBO	59938-06-6
	1,1,1-Trifluoroacetone	TFK	421-50-1
Heterocycles	3-(difluoromethyl)-1-methyl-1H-pyrazole-4-carboxylate	DFMPA	176969-34-9
	1-Methyl-3-(trifluoromethyl)-1H-pyrazole-4-carboxylic acid	TFMPA	113100-53-1
Solvents for Li-Ion batteries	Monofluoroethylene Carbonate	F1EC	114435-02-8

Should you have any questions, please contact us: **emea.fluorides@solvay.com**

WORLDWIDE PRESENCE

With its two production plants in Europe and a strong tolling network in Asia, Solvay is the largest producer of fluoro-aliphatic derivatives.

Our dedicated R&I Team develops new molecules from two product trees, and tailor-made chemical routes to meet customers' ambitions.

INDUSTRIAL FOOTPRINT

SOLVAY

Europe
Solvay Fluor GmbH
Postfach 220
30002 Hannover
Germany
Phone +49 511 857-2444
emea.fluorides@solvay.com

NAFTA
Solvay Fluorides, LLC
504 Carnegie Center Princeton
NJ 08540
USA
Phone +1 609-860-3079

Asia
Nippon Solvay K.K.
7th floor, Atago Green Hills MORI Tower
2-5-1, Atago, Minato-ku,
Tokyo 105-6207
Japan
Phone +81 3 5425 4310

49/499/02.19/007/pdf

www.solvay-fluororganics.com