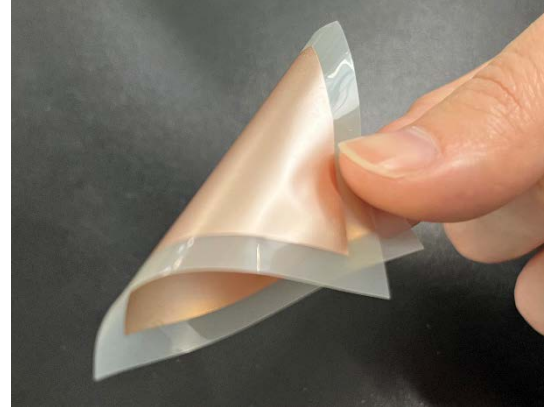


## Summary

Our fluorine-based organic piezoelectric materials are made of polymeric materials that have piezoelectric properties. They are particularly suitable for mechanical to electrical conversion (sensor) applications because they have a lower dielectric constant and a higher voltage output factor (g constant) than ceramic piezoelectric materials (PZT, etc.). They also have excellent flexibility, making it possible to attach it to curved surfaces.

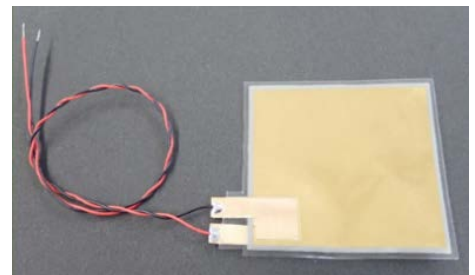
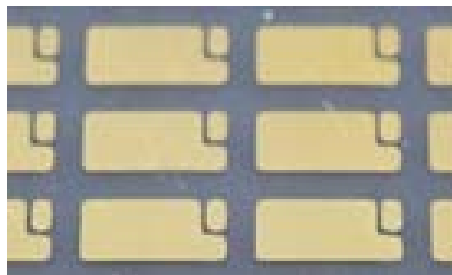
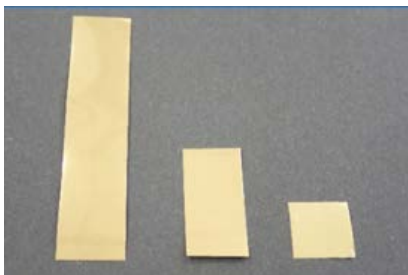


## Features

- Flexible, lightweight, and excellent workability
- Excellent impact resistance, water resistance, heat resistance (<120°C), and chemical stability
- Superior piezoelectricity and clear characteristics in 33 directions ( $d_{33} \gg d_{31}, d_{32}$ ) in comparison to general PVDF materials
- Acoustic impedance is close to that of organisms and water
- Low environmental impact due to the absence of lead

## Applications

- Sensors: vibration sensors, acceleration sensors, strain gauges, pulse/heart rate sensors
- Acoustics: speakers, microphones, electronic instrument pickups
- Ultrasonic: medical ultrasonic probes, flaw detector, hydrophone
- Others: energy harvesting, etc.

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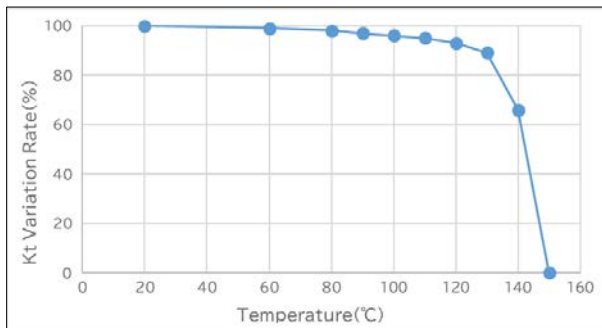


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Site Web : [www.es-france.com](http://www.es-france.com)

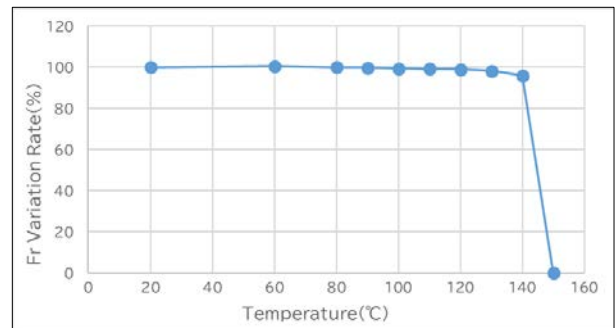
## Basic Characteristics

Item	Unit	V-1
$K_{31}$	%	7.7
$K_t$	%	29.9
$N_{31}$	m·Hz	814
$N_t$	m·Hz	1154
$d_{31}$	pC/N	8
$d_{32}$	pC/N	8
$d_{33}$	pC/N	31
$e_{33}$	mC/m <sup>2</sup>	197
$g_{33}$	mV·m/N	450
Dielectric constants	$\epsilon_{33}^T / \epsilon_0$	7.8
Qm	-	25
Modulus	GPa	1.1
Specific gravity	g/cm <sup>3</sup>	1.92

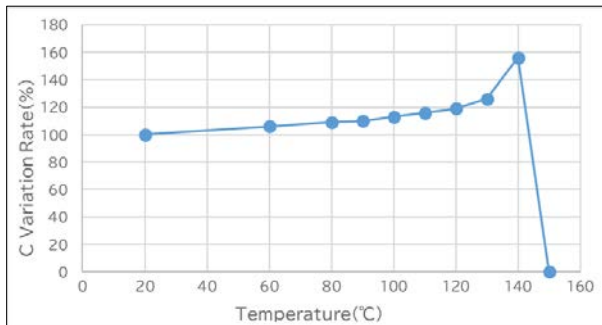
## Temp. Characteristics



Temp. characteristics of coupling factor  $K_t$



Temp. characteristics of resonance frequency  $F_r$



Temp. characteristics of capacitance  $C$

### Condition

Maintained for 1 hour at each temperature

\*The value at the start of measurement is set as 100 (%).

\*The values shown in this paper are for reference only and are not guaranteed.  
Please note that specifications are subject to change without notice for improvement.

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