



The Chemical Company

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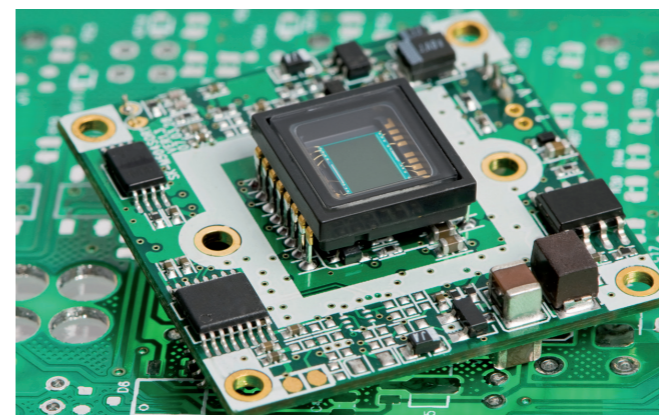
# IMIDAZOLES

With the largest dedicated imidazole production in the world, BASF offers unique solutions which contribute to customer success.

## Imidazoles in the Epoxy Resin Market

Imidazoles can be used as hardeners / accelerators or catalysts in Epoxy Curing Agents.

- As a hardener or accelerator the imidazoles become part of the resin.
- Used as catalysts the imidazoles are not consumed in the hardening process, but make the oxygen of the epoxy more attractive for reactions with other components.



Imidazoles by BASF are successfully used in epoxy resins used for electronics industry.

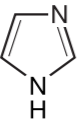
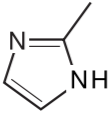
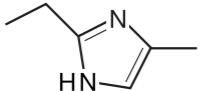
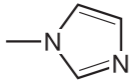
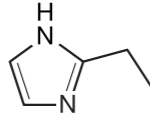
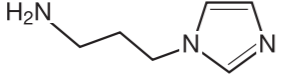
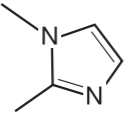
## Advantages of Imidazoles as Epoxy Curing Agents

- Very long work life (1–2 days)
- Very fast elevated temperature cure (100°C–180°C)
- Excellent high temperature stability
- Good adhesion on metals
- Form resins with a high tensile strength



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## Imidazoles Portfolio

CAS registry no.	Chemical Structure	Product	Molecular weight, g/mol	Assay, %	Boiling Point, °C	Melting Point, °C
288-32-4		Imidazole	68.08	min. 99.5	256	88 – 90
		Imidazole aqueous solution 50%	68.08	45 – 55	104	2
693-98-1		2-Methylimidazole flakes (2-MI Flakes)	82.11	min. 98.5	268	136 – 138
		2-Methylimidazole pure (2-MI Pure)	82.11	min 99.7	268	144 – 145
931-36-2		2-Ethyl-4-methylimidazole (2, 4-EMI)	110.16	87.0 – 92.0	272.8	36 – 42
		2-Ethyl-4-methylimidazole S (2, 4-EMI S)	110.16	83.0 – 87.0	270 – 276	36 – 42
		2-Ethyl-4-methylimidazole dist.(2, 4-EMI dist.)	110.16	min. 98.0	272.8	36 – 42
616-47-7		1-Methylimidazole (1-MI)	82.11	min. 99.0	198	-2
1072-62-4		2-Ethylimidazole ultra pure (2-EI)	96.13	min. 99.0	268 – 270	77 – 78
5036-48-6		N-(3-Aminopropyl) imidazole (3-API)	125.17	min. 97.0	296	-68
1739-84-0		1, 2-Dimethylimidazole (1, 2-DMI)	96.13	min. 96.0	205	20 – 40 (Range)

### Top Intermediates Supplier

The BASF Group's Intermediates division develops, produces and markets a comprehensive portfolio of more than 600 intermediates around the world. The most important

of the division's product groups include amines, diols, polyalcohols, acids and specialties. Among other applications, intermediates are used as starting materials

for coatings, plastics, pharmaceuticals, textile fibers, detergents and crop protectants. Innovative intermediates from BASF help to improve the properties of final products

and the efficiency of production processes. The ISO 9001:2000-certified Intermediates division operates plants at production sites in Europe, Asia, and the Americas.