

DINP PLASTICIZER

(Diisononyl Phthalate)

Introduction

1. Definition of Plasticizer

Plasticizer is material incorporated in a PVC resin to increase its workability, flexibility (lower melt viscosity, temperature of TG or elastic modulus of plastic).

Therefore the selection of optimum plasticizer affects the successful use of PVC in many diverse applications.

2. Function of plasticizer

**Process Aid*

- a. Lower hot melt viscosity
- b. Resin stability
- c. Reduced sticking of resin
- d. Increase internal lubricity
- e. Increase tensile strength
- f. Lower the processing temperature
- g. Reduce sticking in mold

**End-use Plasticizer*

- a. Softening to the resin
- b. Increase elongation
- c. Increase Flexibility
- d. Increase impact resistance
- e. Increase tear strength
- f. Increase the temp. range of usefulness
- g. Increase toughness

3. Application

Calendering

- Sheet
- Film
- Synthetic Leather
- Tarpaulin

Extrusion

- Hose
- Wire & Cable Insulation
- Sandal
- ...

Injection

- Toy
- Shoe sole
- ...

Coating

- Industrial Glove
- Wall Paper
- Vinyl gloves
- ...

➤ ***Application of DINP:***

- ✓ Electrical Resistance, Stable Viscosity
- ✓ Wire & Cable Insulations, Calendering Sheet, Wall Coverings...

DINP SPECIFICATION

Chemical name: DIISONONYL PHTHALATE

No	Items	Unit	Specification	Typical	Test method
1	Color	APHA	25 max.	10	JIS K 6751
2	Acid Value	KOH mg/g	0.05 max.	0.007	JIS K 6751
3	Volume Resistivity	Ω .cm(30 ⁰ C)	$2.0 \cdot 10^{11}$ min	$6.0 \cdot 10^{11}$	JIS K 6751
4	Specific Gravity	(20/20 ⁰ C)	0.975 ± 0.003	0.975	JIS K 6751
5	Acid value (after heating)	KOH mg/g	0.1 max	0.030	JIS K 6751
6	Refractive index	Nd25	1.486 ± 0.003	1.485	JIS K 6751
7	Heating loss	Wt%	0.1 max	0.055	JIS K 6751
8	Ester content	Wt%	99.5% min	99.7	GC

Physical properties (for reference purpose only)

No	Items	Unit	Specification	Test method
1	Molecular Weight		419	/
2	Boiling Point	⁰ C	252	@760 mmHg
3	Freezing Point	⁰ C	-48	/
4	Flash Point	⁰ C	201	/
5	Viscosity at 20 ⁰ C	Cp	76	ASTM D445