

HDT @0.46 Mpa (67 psi)

HDT stands for Heat Deflection Temperature or Heat Distortion Temperature. Following the ASTM D 648 (which is equivalent to the ISO 75) the HDT is the temperature at which a given polymer test bar will be bended of 0.25 mm under a given load.

In the case of the **HDT @ 0.46MPa the load value is 0.46 MPa (67 psi)**. Practically, the test bar is immersed in an oil bath that is heated and leads to a continuous increase of the bath temperature (usually 2°C per minute).

The deflection temperature is also sometimes called the '**deflection temperature under load**' (DTUL). This temperature gives an estimate of the service temperature a given polymer can withstand. However this is only an estimate, and cannot predict how the final part will perform. Other settings like speed of the temperature increase or even part design will significantly influence the final thermal performance of an application.

Still, HDT @ 0.46Mpa is *often more accurate* than **HDT @ 1.8MPa**. This last one being useful when final parts are used under high mechanical loads.

HDT @0.46 Mpa (67 psi) Values of Several Plastics

Polymer Name	Min Value (°C)	Max Value (°C)
ABS - Acrylonitrile Butadiene Styrene	68.0	100.0
ABS Flame Retardant	90.0	120.0
ABS High Heat	100.0	125.0
ABS High Impact	90.0	110.0
ABS/PC Blend - Acrylonitrile Butadiene Styrene/Polycarbonate Blend	105.0	130.0
ABS/PC Blend 20% Glass Fiber	130.0	130.0
ABS/PC Flame Retardant	90.0	110.0

Amorphous TPI Blend, Ultra-high heat, Chemical Resistant (High Flow)	263.0	263.0
Amorphous TPI Blend, Ultra-high heat, Chemical Resistant (Standard Flow)	260.0	260.0
Amorphous TPI, High Heat, High Flow, Lead-Free Solderable, 30% GF	257.0	257.0
Amorphous TPI, High Heat, High Flow, Transparent, Lead-Free Solderable (High Flow)	250.0	250.0
Amorphous TPI, High Heat, High Flow, Transparent, Lead-Free Solderable (Standard Flow)	250.0	250.0
Amorphous TPI, Highest Heat, Chemical Resistant, 260°C UL RTI	278.0	278.0
Amorphous TPI, Moderate Heat, Transparent	237.0	237.0
Amorphous TPI, Moderate Heat, Transparent (Food Contact Approved)	237.0	237.0
Amorphous TPI, Moderate Heat, Transparent (Mold Release grade)	237.0	237.0
Amorphous TPI, Moderate Heat, Transparent (Powder form)	237.0	237.0
ASA - Acrylonitrile Styrene Acrylate	80.0	95.0
ASA/PC Blend - Acrylonitrile Styrene Acrylate/Polycarbonate Blend	125.0	130.0
ASA/PC Flame Retardant	130.0	130.0
ASA/PVC Blend - Acrylonitrile Styrene Acrylate/Polyvinyl Chloride Blend	80.0	85.0
CA - Cellulose Acetate	50.0	100.0
CAB - Cellulose Acetate Butyrate	54.0	108.0
CP - Cellulose Propionate	60.0	120.0

COC - Cyclic Olefin Copolymer	127.0	170.0
CPVC - Chlorinated Polyvinyl Chloride	100.0	120.0
ECTFE - Ethylene Chlorotrifluoroethylene	90.0	92.0
ETFE - Ethylene Tetrafluoroethylene	105.0	105.0
EVA - Ethylene Vinyl Acetate	37.0	37.0
EVOH - Ethylene Vinyl Alcohol	80.0	100.0
FEP - Fluorinated Ethylene Propylene	70.0	70.0
HDPE - High Density Polyethylene	60.0	90.0
HIPS - High Impact Polystyrene	80.0	100.0
HIPS Flame Retardant V0	85.0	100.0
Ionomer (Ethylene-Methyl Acrylate Copolymer)	34.0	75.0
LCP - Liquid Crystal Polymer	220.0	220.0
LCP Carbon Fiber-reinforced	260.0	260.0
LCP Glass Fiber-reinforced	250.0	280.0
LCP Mineral-filled	220.0	260.0
LDPE - Low Density Polyethylene	40.0	50.0
MABS - Transparent Acrylonitrile Butadiene Styrene	104.0	106.0
PA 11 - (Polyamide 11) 30% Glass fiber reinforced	180.0	180.0
PA 11, Conductive	137.0	137.0
PA 11, Flexible	86.0	130.0
PA 11, Rigid	60.0	145.0
PA 12 (Polyamide 12), Conductive	114.0	114.0
PA 12, Fiber-reinforced	173.0	175.0
PA 12, Flexible	89.0	125.0

PA 12, Glass Filled	155.0	160.0
PA 12, Rigid	92.0	135.0
PA 46, 30% Glass Fiber	285.0	290.0
PA 6 - Polyamide 6	150.0	190.0
PA 6-10 - Polyamide 6-10	160.0	175.0
PA 66 - Polyamide 6-6	180.0	240.0
PA 66, 30% Glass Fiber	235.0	255.0
PA 66, 30% Mineral filled	229.0	231.0
PA 66, Impact Modified, 15-30% Glass Fiber	220.0	250.0
PA 66, Impact Modified	160.0	210.0
Polyamide semi-aromatic	110.0	150.0
PAN - Polyacrylonitrile	70.0	80.0
PAR - Polyarylate	180.0	180.0
PBT - Polybutylene Terephthalate	115.0	150.0
PBT, 30% Glass Fiber	215.0	250.0
PC (Polycarbonate) 20-40% Glass Fiber	140.0	155.0
PC (Polycarbonate) 20-40% Glass Fiber Flame Retardant	145.0	155.0
PC - Polycarbonate, high heat	150.0	190.0
PC/PBT Blend - Polycarbonate/Polybutylene Terephthalate Blend	91.0	118.0
PC/PBT blend, Glass Filled	135.0	215.0
PCTFE - Polymonochlorotrifluoroethylene	120.0	125.0
PE - Polyethylene 30% Glass Fiber	127.0	130.0
PEI - Polyetherimide	195.0	210.0

PEI, 30% Glass Fiber-reinforced	205.0	212.0
PEI, Mineral Filled	200.0	210.0
PESU - Polyethersulfone	205.0	212.0
PESU 10-30% glass fiber	215.0	221.0
PET - Polyethylene Terephthalate	75.0	115.0
PET, 30% Glass Fiber-reinforced	225.0	250.0
PET, 30/35% Glass Fiber-reinforced, Impact Modified	245.0	245.0
PETG - Polyethylene Terephthalate Glycol	69.0	71.0
PFA - Perfluoroalkoxy	70.0	75.0
PHB - Polyhydroxybutyrate	130.0	135.0
PLA - Polylactide	53.0	56.0
PMMA - Polymethylmethacrylate/Acrylic	80.0	110.0
PMMA (Acrylic) High Heat	90.0	170.0
PMMA (Acrylic) Impact Modified	75.0	100.0
PMP - Polymethylpentene	80.0	90.0
PMP 30% Glass Fiber-reinforced	121.0	177.0
PMP Mineral Filled	90.0	110.0
POM - Polyoxymethylene (Acetal)	158.0	172.0
POM (Acetal) Impact Modified	145.0	160.0
POM (Acetal) Low Friction	168.0	172.0
POM (Acetal) Mineral Filled	158.0	175.0
PP - Polypropylene 10-20% Glass Fiber	110.0	140.0
PP, 10-40% Mineral Filled	85.0	113.0
PP, 10-40% Talc Filled	100.0	127.0

PP, 30-40% Glass Fiber-reinforced	140.0	155.0
PP (Polypropylene) Copolymer	85.0	104.0
PP (Polypropylene) Homopolymer	100.0	120.0
PP, Impact Modified	75.0	88.0
PPA, 30% Mineral-filled	157.0	159.0
PPA, 33% Glass Fiber-reinforced	284.0	286.0
PPA, 33% Glass Fiber-reinforced – High Flow	279.0	280.0
PPA, 45% Glass Fiber-reinforced	286.0	288.0
PPE - Polyphenylene Ether	110.0	138.0
PPE, 30% Glass Fiber-reinforced	138.0	154.0
PPE, Flame Retardant	100.0	150.0
PPE, Impact Modified	100.0	120.0
PPE, Mineral Filled	100.0	120.0
PPS - Polyphenylene Sulfide	140.0	160.0
PPS, 20-30% Glass Fiber-reinforced	270.0	278.0
PPS, 40% Glass Fiber-reinforced	270.0	280.0
PPS, Conductive	230.0	260.0
PPS, Glass fiber & Mineral-filled	200.0	2803.0
PS (Polystyrene) 30% glass fiber	82.0	113.0
PS (Polystyrene) Crystal	75.0	100.0
PS, High Heat	90.0	110.0
PSU - Polysulfone	176.0	182.0
PSU, 30% Glass fiber-reinforced	180.0	190.0
PSU Mineral Filled	180.0	185.0
PTFE - Polytetrafluoroethylene	70.0	120.0

PVC (Polyvinyl Chloride), 20% Glass Fiber-reinforced	75.0	80.0
PVC, Plasticized	30.0	56.0
PVC, Plasticized Filled	30.0	56.0
PVC Rigid	57.0	80.0
PVDC - Polyvinylidene Chloride	80.0	90.0
PVDF - Polyvinylidene Fluoride	70.0	150.0
SAN - Styrene Acrylonitrile	105.0	115.0
SAN, 20% Glass Fiber-reinforced	105.0	115.0
SMMA - Styrene Methyl Methacrylate	100.0	100.0
TPI-PEEK Blend, Ultra-high heat, Chemical Resistant, High Flow, 240°C UL RTI	270.0	270.0
TPS, Injection General Purpose	35.0	45.0 1.650
TPS, Water Resistant	45.0	45.0
UHMWPE - Ultra High Molecular Weight Polyethylene	68.0	82.0
XLPE - Crosslinked Polyethylene	54.0	107.0