

# PVC PRESSURE PIPE TECHNICAL DATA SHEET

## MECHANICAL PROPERTIES

PROPERTY	VALUE & UNIT
Density (Specific Gravity)	1.47
Ultimate Tensile Strength	52MPa
Yield Strain	5.50%
Compressive Strength	66MPa
Tensile Modulus	3200MPa
Hardness Shore D	85
Poisson's ratio	0.38
Design Stress	≤DN150=11.0 MPa >DN150=12.3 MPa
Ring Bending Modulus (50yrs)	1200MPa

## THERMAL PROPERTIES

PROPERTY	VALUE & UNIT
Coefficient of thermal expansion	70 x 10 <sup>-6</sup> /°C
Thermal conductivity	0.138W/m.k
Specific heat	1045 J/kg/°C
Vicat Softening Temperature	>70°C
Allowable Operation Temperature	50°C

## TEMPERATURE EFFECT ON PRESSURE RATING

PVC-U pipes are suitable for service temperatures between 0°C and 50°C.  
For temperatures above 20°C, provision must be made for pressure re-rating in accordance with the table below:

MAXIMUM SERVICE TEMPERATURE (°C)	MULTIPLICATION FACTOR FOR PRESSURE RE-RATING
20	1
25	0.94
30	87.00%
35	0.78
40	0.7
45	0.64
50	0.58

## FIRE RESISTANCE PROPERTIES

PROPERTY	VALUE & UNIT
Flammability	Will not support combustion
Ignitability-AS 1530*	7
Smoke Development - AS 1530*	900.00%
Spread of flame - AS 1530 *	0
Heat evolved - AS 1530*	2

## ELECTRICAL PROPERTIES

PROPERTY	VALUE & UNIT
Volume resistivity	1016 ohm.cm (60% RH)
Superface resistivity	1013 - 1014ohm
Power factor	0.015 - 0.020 at 20°C
Dielectric constant	3.4 - 3.6 at 250C(60 HZ)

## CHEMICAL RESISTANCE

PVC-U pipes have high resistance to a wide range of chemical reagents. Such resistance, however, is a function of temperature, concentration and pressure.

In general, PVC-U is suitable to convey strong acids, alkalis and aqueous solutions (except those which are strongly oxidising), aliphatic hydrocarbons, fluorides, photographic and plating solutions, brine, mineral oils, fats and alcohols. The suitability of a pipeline for conveying a certain chemical will depend on such factors as the concentration of the chemical in the fluid to be conveyed, temperature, flow rate, the presence of pockets or "dead spots" in the pipeline and other factors.

## SAFE HANDLING INFORMATION

### 1) STORAGE & TRANSPORT

No specific requirements. Road does not consider PVC pipe products hazardous for transportation according to Transport of Goods and Rail Acts.

### 2) HANDLING

Injury can be sustained by rolling pipes. Unpack crates and bundles on a flat surface, and ensure free stacks are adequately chocked. Do not climb on stacks.

### 3) MATERIAL WORKING

Normal safe practices should be employed when working with the material: a well ventilated area and the use of dust masks and eye protection when cutting. When heating for bending, or other forming, use hot water or air with appropriate safeguards. Use of an open flame is inadvisable (see below).

### 4) SPILLS & DISPOSAL

Spillage: not applicable Disposal: Recycle where possible. Refer to appropriate environmental protection agency/authority. Normally suitable for disposal as general waste landfill.

### 5) FIRE / EXPLOSION HAZARD

Combustible, Self-extinguishing. No explosion risk. If forced to burn will emit dense acid fumes containing noxious and toxic compounds including carbon monoxide, carbon dioxide and hydrogen chloride. Carbon dioxide is an asphyxiate. Carbon monoxide is toxic. Hydrogen chloride is highly acidic and a severe irritant in low concentrations. All are potentially lethal in high concentrations with sustained exposure. Hydrogen chloride has a highly detectable pungent odour and is intolerable in very low concentrations. The risk of exposure to hazardous levels for sustained periods is therefore considered low.

### 6) FIRE-FIGHTING PROCEDURES

Wear fully protective body suit with self-contained breathing apparatus (SCBA) to prevent contact with gases produced during combustion.

### 7) FIRE-EXTINGUISHING MEDIA

Use water, water fog or foam to extinguish fires. Carbon dioxide or dry chemical are suitable, but are not preferred, as lack of cooling capacity may result in re-ignition.

## MATERIAL SAFETY DATA SHEET

IDENTIFICATION	
Product Name	Poly (Vinyl Chloride)(PVC) Pipe, Conduit
Other Names & Variants	Polyvinyl Chloride, Unplasticised PVC, Unmodified PVC (UPVC, UPVC)
Manufacturer's Product Code	Various
Dangerous Goods Class & Subsidiary Risk	Not Classified As Hazardous
Hazchem Code	No Code Allocated
Poisons Schedule Number	Not Listed
Use	Water Supply, Irrigation, Sewerage, Drainage, Industrial Process Piping, Telecommunications And Electrical Conduit
Design Stress	≤DN150=11.0 MPa >DN150=12.3 MPa
Ring Bending Modulus (50yrs)	1200MPa

<b>PHYSICAL DESCRIPTION / PROPERTIES</b>	
<b>Appearance</b>	Opaque Rigid Solid Tubes, Diameters From 15 To 300mm, Lengths Up To 6m, Various Colours (E.G. White, Grey, Blue, Orange), With Or Without Jointing Sockets. Various Fittings To Match, (E.G. Tees, Bends, Reducers, Couplings Etc.)
<b>Boiling Point / Melting Point</b>	Softening Point: >75°C. Decomposition Initiates At Approximately 140°C.
<b>Vapour Pressure</b>	Not Applicable
<b>Relative Density</b>	1.3 – 1.6
<b>Flash Point</b>	Not Applicable
<b>Flammability Limits</b>	Combustible, Self-Extinguishing
<b>Solubility In Water</b>	Insoluble
<b>INGREDIENTS</b>	
<b>Chemical Name</b>	<b>Proportion</b>
PVC	70 – 80%
Fillers (E.G. Calcium Carbonate)	3 – 16%
Stabilizers (E.G. Calcium Zinc)	1.5 – 4 %
Lubricants (E.G. Wax)	0.5 – 1 %
Modifiers (E.G. CPE)	0 – 5%
Pigments (E.G. TiO <sub>2</sub> )	1 – 4 %