Industrial Rubber Sheet — Technical Data Sheet / Datasheet / TDS

1) Nitrile Rubber (NBR / Buna-N)

A. Properties (typical)

Property	Typical value / range	Notes / application guidance
Density	~1.0 - 1.25 g/cm³	Varies with compounding
Hardness (Shore A)	40 - 90 A	Common sheet grades 60 - 80A
Tensile strength	5 - 20 MPa (≈700 - 2900 psi)	Depends on compound & test standard
Elongation at break	200 - 600%	Good elasticity
Operating temp	-30 ° C up to +120 ° C (short peaks higher)	Specialty grades extend range
Oil/fuel resistance	Excellent to petroleum oils and fuels	Primary advantage of NBR
Weather / ozone resistance	Poor — degrades with ozone and sunlight	Not recommended outdoors without protection
Abrasion / wear	Good	Often used for oil seals, gaskets, pads
Typical uses	Oil seals, hydraulic gaskets, fuel-system pads, vibration mounts	Automotive and industrial sealing

2) EPDM (Ethylene-Propylene / EPR)

A. Properties (typical)

Property	Typical value / range	Notes
Density	~0.86 – 1.2 g/cm³	Compound dependent
Hardness (Shore A)	30 – 90 A (common 60 – 80A)	Weather/age resistant grades common
Tensile strength	7 – 21 MPa	Good mechanical strength for non-oil applications
Elongation at break	200 – 600%	Very flexible
Operating temp	-40 ° C to +150 ° C (continuous)	Good for steam/hot water up to ~150° C
Chemical resistance	Excellent to hot water, steam, alkalis; poor to oils & hydrocarbons	Use where weathering & heat/steam resistance needed
Ozone / UV resistance	Excellent	Widely used outdoors, roofing seals
Typical uses	Weather seals, hose covers, HVAC gaskets, water/steam sealing	Automotive weatherstrips, roofing

3) Neoprene / Chloroprene Rubber (CR)

A. Properties (typical)

Property	Typical value / range	Notes
Density	~1.2 – 1.4 g/cm³	
Hardness (Shore A)	30 – 90 A (common 50 – 80A)	
Tensile strength	7 – 20 MPa	Good mechanical properties
Elongation at break	200 – 600%	
Operating temp	-40 °C to +120 °C (typical)	Good low-temperature flexibility
Resistance	Good to ozone, weathering, flame; moderate oil resistance	Versatile general-purpose rubber
Abrasion	Good	Used for vibration pads and gaskets
Typical uses	HVAC gaskets, refrigeration seals, vibration mounts, lining	Good outdoor & medium chemical resistance

4) Silicone Rubber (VMQ)

A. Properties (typical)

Property	Typical value / range	Notes
Density	~1.1–1.3 g/cm³	
Hardness (Shore A)	20 – 80 A (common 40–70A)	
Tensile strength	4 – 12 MPa	Lower than many elastomers but very flexible
Elongation at break	200 – 800%	Excellent
Operating temp	-60 °C up to +200–230 °C (continuous)	Outstanding high/low temp performance
Chemical resistance	Good to many polar chemicals; poor to fuels & aromatic hydrocarbons	Check specific fluid compatibility
Weather / ozone resistance	Excellent	Often used in outdoor, sterilizable, food/medical
Food/medical	Excellent grades available (FDA)	Widely used in food/contact gasketing
Typical uses	High-temp gaskets, food/medical seals, oven linings, insulating pads	When temperature resilience or biocompatibility required

5) Fluoroelastomer (FKM / Viton®)

A. Properties (typical)

Property	Typical value / range	Notes
Density	~1.8–2.1 g/cm³	Higher than many rubbers
Hardness (Shore A)	60 – 90 A (common 70–90A)	Often relatively hard
Tensile strength	7 – 20 MPa	High chemical resistance grades vary
Elongation at break	100 – 300%	Lower elongation than NR or silicone
Operating temp	-20 °C to +200–250 °C (grade dependent)	Excellent heat and chemical stability
Chemical resistance	Excellent to oils, fuels, many chemicals; poor to amines & some ketones	Preferred where aggressive fluids are present
Ozone / weathering	Very good	
Typical uses	Fuel & oil seals, high-temperature gaskets, chemical process seals	Aerospace, automotive fuel systems

6) Natural Rubber (NR)

A. Properties (typical)

Property	Typical value / range	Notes
Density	~0.90 – 1.1 g/cm³	
Hardness (Shore A)	30 – 95 A	General-purpose grades often 50 – 70A
Tensile strength	10 – 25 MPa	High tensile & tear strength
Elongation at break	300 – 700%	Excellent resilience
Operating temp	-30 °C to +70 – 90 °C	Not for high-temperature service
Chemical resistance	Poor to oils, fuels; good to water and many polar solvents	Not for hydrocarbon exposure
Abrasion / tear	Excellent	Preferred for wear parts, belts
Typical uses	Conveyor belts, heavy-duty gaskets, vibration mounts, wear liners	When mechanical strength & resilience needed

7) Butyl Rubber (IIR)

A. Properties (typical)

Property	Typical value / range	Notes
Density	~0.9–1.3 g/cm³	
Hardness (Shore A)	40 – 90 A	
Tensile strength	5 – 15 MPa	Fair strength
Elongation at break	200 – 700%	
Operating temp	−40 °C to +120–130 °C	Good low temp flexibility
Gas / vapor permeability	Excellent gas barrier (very low permeability)	Used where impermeability is needed
Chemical resistance	Good to polar chemicals; poor to most oils	
Typical uses	Inner linings, gas/vapor barriers, sealing membranes, pharmaceutical bladders	Applications requiring low permeability

8) SBR (Styrene-Butadiene Rubber)

A. Properties (typical)

Property	Typical value / range	Notes
Density	~1.0 – 1.2 g/cm³	
Hardness (Shore A)	40 – 80 A	
Tensile strength	5 – 20 MPa	Good general mechanical properties
Elongation at break	200 – 600%	
Operating temp	-30 °C to +80 – 100 °C	
Abrasion resistance	Good	Used for general wear linings
Chemical resistance	Poor to fuels & oils	General purpose rubber, economical
Typical uses	Flooring, linings, gaskets, belts	Low cost, general sealing/wear parts

9) HNBR (Hydrogenated Nitrile Butadiene Rubber)

A. Properties (typical)

Property	Typical value / range	Notes
Density	~1.0–1.3 g/cm³	
Hardness (Shore A)	60 – 90 A	
Tensile strength	6 – 20 MPa	Improved over NBR at high temps
Elongation at break	150 – 400%	
Operating temp	-40 °C to +150–160 °C (continuous)	Better heat & ozone resistance than NBR
Oil / fuel resistance	Very good (similar to NBR)	Preferred when higher temp ageing resistance required
Typical uses	High-temp oil seals, automotive engine seals, hoses	Upgraded NBR for demanding environments

10) Polyurethane (PU) Elastomer Sheets

A. Properties (typical)

Property	Typical value / range	Notes
Density	~1.1 – 1.3 g/cm³	
Hardness (Shore A)	60 – 95 A (durometer ranges available)	
Tensile strength	20 – 45 MPa (very high for elastomers)	Excellent mechanical strength
Elongation at break	200 – 600%	
Operating temp	-40 °C to +80 – 120 °C (dependent)	Limited at elevated temps vs FKM or silicone
Abrasion / tear resistance	Excellent — among best elastomers	Preferred for wear strips, pads, rollers
Oil resistance	Moderate (formulation dependent)	Use specialty PU for oil contact
Typical uses	Wear strips, rollers, bumpers, lining, high-load seals	Where abrasion resistance matters