



ISO 9001:2015 certified company

Chemical Hose

TECHNICAL DATASHEET

SANDHYAFLEX Chemical Hose is a high-performance industrial hose specifically engineered for the safe transfer of chemicals, acids, alkalis, solvents, petroleum derivatives, corrosive liquids, and aggressive industrial fluids in chemical processing plants, pharmaceutical industries, fertilizer plants, refineries, petrochemical facilities, water treatment systems, and industrial fluid handling applications. Manufactured using specially formulated chemical-resistant rubber compounds reinforced with high-strength textile reinforcement and advanced bonding systems, these hoses are designed to provide exceptional chemical resistance, pressure handling capability, flexibility, and long-term operational reliability under demanding service conditions.

Designed to ensure safe and efficient fluid transfer while minimizing leakage risks and maintenance requirements, Sandhyaflex Chemical Hoses provide superior resistance to a wide range of industrial chemicals, excellent flexibility, high working pressure capability, and dependable performance. The hoses are widely used in chemical loading and unloading operations, tank truck services, process plants, industrial transfer systems, bulk chemical transportation, and hazardous fluid handling applications where safety, durability, and chemical compatibility are essential.

SANDHYAFLEX INDIA PVT LTD has established itself as a trusted manufacturer of industrial hose solutions in India. Utilizing advanced extrusion technology, precision reinforcement processes, specialized chemical-resistant compounds, and carefully selected raw materials, Sandhyaflex Chemical Hoses are manufactured to deliver consistent quality, excellent dimensional stability, superior pressure performance, and dependable long-term service life.

Overcoming Challenges, Delivering Excellence:

Chemical transfer operations expose hoses to aggressive chemicals, corrosive fluids, pressure fluctuations, mechanical handling, weather exposure, and demanding industrial environments. Conventional hoses often suffer from chemical degradation, swelling, cracking, reinforcement failure, leakage, and premature service failure when exposed to aggressive media.

To address these challenges, SANDHYAFLEX Chemical Hoses are manufactured using specially engineered chemical-resistant rubber compounds reinforced with high-tensile textile reinforcement layers that provide excellent resistance to chemical attack, pressure, fatigue,

weathering, and environmental degradation. The robust construction ensures safe fluid transfer, improved operational efficiency, reduced downtime, and extended service life.

By delivering superior chemical resistance and dependable performance, SANDHYAFLEX Chemical Hoses have become the preferred choice for chemical manufacturers, petrochemical industries, pharmaceutical companies, fertilizer plants, industrial operators, maintenance contractors, and process engineering professionals worldwide.

Key Features:

- Manufactured using high-quality chemical-resistant rubber compounds
- Suitable for transfer of acids, alkalis, solvents, and industrial chemicals
- Reinforced with high-strength textile reinforcement
- Excellent resistance to corrosive and aggressive fluids
- High working pressure capability
- Excellent burst pressure performance
- Superior flexibility and ease of handling
- Smooth chemical-resistant inner tube
- Outstanding resistance to weathering, ozone, moisture, and UV exposure
- Excellent abrasion resistance
- Reliable performance under demanding industrial conditions
- Available in multiple diameters and pressure ratings
- Suitable for loading, unloading, and process transfer applications
- Excellent fatigue resistance under repeated flexing
- Low maintenance requirements
- Cost-effective industrial chemical transfer solution
- Long service life under severe operating conditions

Applications:

- **Chemical Processing Plants:** Transfer of acids, alkalis, solvents, and process chemicals.
- **Petrochemical Industry:** Handling of petroleum-based chemicals and industrial fluids.
- **Fertilizer Plants:** Transfer of chemical solutions and process liquids.
- **Pharmaceutical Industry:** Chemical and process fluid handling applications.

- **Tank Truck Loading and Unloading:** Safe transfer of hazardous and non-hazardous chemicals.
- **Refineries:** Fluid conveyance for refining and processing operations.
- **Water Treatment Plants:** Chemical dosing and transfer systems.
- **Industrial Manufacturing:** Chemical transfer in production processes.
- **Bulk Chemical Storage Facilities:** Loading and unloading operations.
- **Paint and Coating Industries:** Transfer of solvents and specialty chemicals.
- **Mining and Metallurgical Industries:** Chemical processing and reagent handling.
- **General Industrial Services:** Multi-purpose chemical transfer applications.

History of Chemical Hoses:

- **Early 1900s** – Basic rubber hoses were used for limited industrial fluid transfer applications.
- **1930s** – Improved rubber formulations enhanced resistance to industrial chemicals.
- **1950s** – Synthetic rubber compounds expanded chemical compatibility.
- **1960s** – Reinforced chemical hoses improved pressure handling capabilities.
- **1970s** – Development of specialized chemical-resistant elastomers improved safety and durability.
- **1980s** – Advanced reinforcement technologies enhanced hose strength and reliability.
- **1990s** – Improved chemical resistance standards increased industrial hose performance.
- **2000s** – Growth in petrochemical and pharmaceutical industries increased demand for specialized chemical hoses.
- **2010s** – Advanced manufacturing technologies improved hose consistency, safety, and service life.
- **2020s** – Modern Chemical Hoses provide superior chemical resistance, pressure performance, safety, and long-term reliability across industrial applications worldwide.

Dimensions:

Pressures: W.P. of 1.0 MPa & min. B. P. 4.0 MPa.

Nom. Bore in (mm)	Tolerance on Nom. bore (mm)	Min. Thk. of Lining (mm)	Min. Thk. of Cover (mm)
10.00	± 0.75	2.0	1.3
12.50	± 0.75	2.0	1.3
16.00	± 0.75	2.0	1.3
20.00	± 0.75	2.0	1.3
25.00	± 1.25	2.0	1.3
31.50	± 1.25	2.0	1.3
38.00	± 1.50	2.0	1.3
45.00	± 1.50	2.0	1.3
50.00	± 2.00	2.0	1.3

Colours and Their Applications:





For Sandhyaflex Chemical Hoses, colours are primarily used for product identification, chemical service classification, safety coding, inventory management, plant-specific requirements, and customer specifications. The chemical resistance, pressure capability, flexibility, and service life are determined by the hose construction and compound formulation rather than the colour.

Colour	Typical Application
Black	Standard industrial chemical transfer applications
Blue	Water treatment chemicals and process fluids
Red	Acid transfer and hazardous chemical identification
Yellow	Safety-coded chemical service applications
Green	Fertilizer and agricultural chemical handling
Orange	Industrial solvent transfer applications
Grey	General-purpose chemical processing systems
Custom Colours	Available as per customer specifications and project requirements


Materials:

The **Sandhyaflex Chemical Hose** shall be manufactured using specially formulated chemical-resistant rubber compounds, high-strength textile reinforcement fabrics, steel wire reinforcement (where required), bonding agents, processing additives, anti-static compounds, and weather-resistant cover materials specifically engineered to provide excellent chemical resistance, pressure handling capability, flexibility, safety, and long-term durability under demanding chemical transfer applications.

The hose construction shall consist of a highly chemical-resistant inner tube, multiple reinforcement layers, anti-static and bonding compounds, and a weather-resistant outer cover designed to ensure excellent structural integrity, safe fluid handling, pressure resistance, and reliable performance throughout the service life of the hose.

RAW MATERIALS OF CHEMICAL HOSE BY SANDHYAFLEX				
S. No.	Raw Material	Image	Typical Grade / Example	Function / Purpose
1	Synthetic Rubber (EPDM / NBR / CSM / FKM / Hypalon / Butyl etc.) + Natural Rubber (NR) (Blend as per application)		<ul style="list-style-type: none"> EPDM (Ethylene Propylene Diene Monomer) NBR (Nitrile Butadiene Rubber) CSM (Chlorosulfonated Polyethylene) FKM (Fluoroelastomer / Viton®) Hypalon® (CSM) Butyl Rubber Natural Rubber (NR) 	<ul style="list-style-type: none"> Provides excellent chemical resistance Ensures elasticity & flexibility Withstands aggressive chemicals, acids & alkalis Offers long service life Suitable for wide temperature range
2	Reinforcement Fabric (Textile Cord)		<ul style="list-style-type: none"> Polyester Fabric Nylon Fabric Aramid Fabric 	<ul style="list-style-type: none"> Provides tensile strength Enhances pressure resistance Improves dimensional stability Prevents elongation
3	Steel Wire (If Applicable)		<ul style="list-style-type: none"> High Tensile Steel Wire Galvanized Steel Wire Stainless Steel Wire 	<ul style="list-style-type: none"> Enhances pressure capacity Provides structural reinforcement Improves burst strength Suitable for high pressure chemical hoses
4	Chemical Resistant Lining Compound		<ul style="list-style-type: none"> Acid Resistant Compound Alkali Resistant Compound Solvent Resistant Compound Oil & Fuel Resistant Compound 	<ul style="list-style-type: none"> Provides inner tube protection Ensures chemical compatibility Prevents permeation Offers smooth flow surface
5	Adhesion / Bonding Agents		<ul style="list-style-type: none"> Resorcinol Formaldehyde Latex (RFL) Rubber to Rubber Adhesive Metal Primer / Adhesion Promoters 	<ul style="list-style-type: none"> Ensures strong bonding Enhances adhesion between layers Prevents delamination Improves hose integrity
6	Processing Additives		<ul style="list-style-type: none"> Anti-degradants Anti-oxidants Processing Oils Cure Activators Plasticizer (if required) 	<ul style="list-style-type: none"> Improves processability Enhances durability Prevents aging Ensures consistent quality
7	Anti-Static Additives (If Applicable)		<ul style="list-style-type: none"> Carbon Black Conductive Carbon Static Dissipative Additives 	<ul style="list-style-type: none"> Prevents static electricity build-up Ensures safe chemical handling Reduces risk of ignition Suitable for hazardous applications
8	Outer Cover Compound		<ul style="list-style-type: none"> EPDM Cover Compound Chloroprene (CR) Compound NBR Cover Compound Weather Resistant Compound 	<ul style="list-style-type: none"> Provides outer protection Resists weather, ozone & UV Resists abrasion & chemicals Enhances appearance & service life
9	Colourants & Pigments (If Applicable)		<ul style="list-style-type: none"> Organic Pigments Inorganic Pigments Carbon Black 	<ul style="list-style-type: none"> Provides colour identification Enhances appearance UV & chemical resistant colours Project / application identification

MANUFACTURING PROCESS



RAW MATERIALS MIXING → CALENDERING (SHEET FORMING) → CUTTING TO SIZE → YARN / WIRE BRAIDING → EXTRUSION (LINING) → EXTRUSION (COVER) → VULCANIZATION / CURING → QUALITY INSPECTION → FINISHED CHEMICAL HOSE

HIGH QUALITY MATERIALS
EXCELLENT CHEMICAL RESISTANCE
SUPERIOR PRESSURE PERFORMANCE
SAFE & RELIABLE
COMPLIANT WITH STANDARDS
LONG SERVICE LIFE

The components shall possess excellent resistance to acids, alkalis, solvents, chemicals, oils, corrosive fluids, weathering, moisture, ozone exposure, UV radiation, abrasion, pressure fluctuations, and harsh industrial operating conditions commonly encountered in chemical plants, refineries, fertilizer industries, pharmaceutical facilities, petrochemical plants, tank truck operations, and industrial fluid transfer systems.

Manufactured from carefully selected chemical-resistant compounds and reinforcement materials, **Sandhyaflex Chemical Hoses** provide reliable chemical transfer, superior corrosion resistance, excellent pressure performance, reduced maintenance requirements, and extended operational life across a wide range of industrial chemical handling applications.

Physical and Mechanical Properties – Sandhyaflex Chemical Hose:

S. No.	Property / Test	Requirement
1	Product Type	Chemical Hose

2	Material Composition	Chemical Resistant Synthetic/Natural Rubber with Textile and/or Steel Reinforcement
3	Colour	Black / Blue / Green / Yellow / Custom Colours
4	Hose Type	Chemical Transfer Hose
5	Shape	Cylindrical Flexible Hose
6	Surface Finish	Smooth Finish
7	Construction	Multi-Layer Reinforced Chemical Hose
8	Inner Tube	Chemical Resistant Synthetic/Natural Rubber Blend
9	Reinforcement	High Tensile Textile Cord and/or Steel Wire Reinforcement
10	Outer Cover	Weather & Chemical Resistant Rubber Compound
11	Chemical Resistance	Excellent
12	Corrosion Resistance	Excellent
13	Tensile Strength	High
14	Elongation at Break	High
15	Pressure Resistance	Excellent
16	Vacuum Resistance	Available Upon Requirement
17	Flexibility	Excellent
18	Kink Resistance	Good
19	Impact Resistance	Good
20	Fatigue Resistance	Excellent
21	Water Resistance	Excellent
22	Moisture Resistance	Excellent
23	Weather Resistance	Excellent
24	UV Resistance	Excellent
25	Ozone Resistance	Excellent
26	Abrasion Resistance	Good
27	Temperature Resistance	Suitable for Industrial Chemical Service Conditions
28	Flow Efficiency	High Due to Smooth Bore Construction
29	Dimensional Stability	High
30	Anti-Static Properties	Available as Required
31	Working Pressure	As per Design and Application Requirement
32	Burst Pressure	As per Hose Design Specification
33	Internal Diameter Range	Project Specific
34	Length Availability	Standard and Custom Lengths Available
35	End Connections	Plain Ends, Flanged, Coupled, Camlock or Custom Fittings
36	Service Life	Long-Term Durable Performance
37	Typical Applications	Chemical Transfer, Petrochemical Plants, Refineries and Industrial Fluid Handling
38	Country of Origin	Made in India
39	Maintenance Requirement	Low

Usage Tips:

- Select the appropriate hose diameter, chemical compatibility, pressure rating, reinforcement construction, and length based on the type of chemical, concentration, temperature, flow rate, and operating conditions.
- Ensure compatibility between the hose, pumps, valves, couplings, storage tanks, loading systems, and associated equipment before installation.
- Verify that the hose material and pressure rating are suitable for the specific chemical being conveyed and comply with project specifications.
- Inspect hoses, couplings, gaskets, clamps, fittings, and connectors before installation for damage, cuts, cracks, deformation, or manufacturing defects.
- Ensure proper alignment and secure connection of hose assemblies to minimize stress concentration and prevent leakage during operation.
- Use recommended couplings, gaskets, fittings, and installation procedures specified by equipment manufacturers and project engineers.
- Maintain the minimum recommended bending radius to prevent kinking, excessive stress, and premature hose failure.
- Avoid twisting, dragging over sharp surfaces, excessive impact, or improper handling during transportation, storage, and installation.
- Ensure all hose assemblies are adequately supported and protected from excessive vibration, mechanical damage, and external abrasion.
- Installation and commissioning should be carried out by qualified personnel using approved safety procedures and appropriate personal protective equipment.
- Follow applicable chemical handling standards, industrial safety regulations, and project-specific operating guidelines throughout installation and operation.

Maintenance and Care:

Maintaining **Sandhyaflex Chemical Hoses** ensures maximum operational efficiency, extended service life, and safe chemical transfer performance.

- **Regular Inspection** – Inspect the hose body, reinforcement areas, couplings, and fittings for signs of wear, cracking, swelling, blistering, deformation, leakage, or chemical attack.
- **Keep Clean** – Flush and clean hoses after use where applicable to prevent chemical residue buildup and contamination.
- **Inspect End Connections** – Periodically check clamps, connectors, flanges, couplings, and gaskets for looseness, corrosion, wear, or leakage.

- **Monitor Hose Condition** – Regularly evaluate inner tube integrity, cover condition, reinforcement exposure, and signs of chemical degradation.
- **Avoid Excessive Bending** – Prevent hose operation below the recommended minimum bend radius to reduce stress concentration and extend service life.
- **Protect Against Mechanical Damage** – Avoid dragging hoses over rough surfaces, sharp edges, metal structures, or abrasive ground conditions.
- **Store Properly** – Store hoses in a cool, dry location away from direct sunlight, ozone-producing equipment, incompatible chemicals, and excessive heat sources when not in use.
- **Monitor Operating Pressure** – Ensure operating pressure remains within the hose's rated working pressure and avoid sudden pressure surges wherever possible.
- **Inspect Reinforcement Integrity** – Check for signs of reinforcement separation, blistering, delamination, or structural deterioration.
- **Verify Chemical Compatibility** – Ensure the hose continues to be used only with approved chemicals compatible with the hose construction.
- **Timely Replacement** – Replace worn or damaged hoses promptly to prevent leakage, contamination, equipment damage, and operational downtime.

Applications by Countries:

India

- Widely used in chemical manufacturing plants, fertilizer industries, refineries, pharmaceutical facilities, and industrial processing units.
- Commonly specified for chemical transfer, loading/unloading operations, and corrosive fluid handling applications.
- Strong demand driven by industrial growth, chemical production expansion, and infrastructure development.

China

- Extensively used in petrochemical complexes, chemical processing plants, manufacturing facilities, and industrial fluid transfer systems.
- Preferred for safe and reliable chemical transportation applications.
- Strong demand from industrial expansion and large-scale manufacturing sectors.

United States

- Commonly used in chemical plants, refineries, tank truck operations, pharmaceutical industries, and industrial maintenance applications.
- High emphasis on safety, chemical compatibility, pressure performance, and regulatory compliance.

- Growing demand from specialty chemical and industrial processing sectors.

Europe

- Widely utilized in chemical processing facilities, petrochemical plants, pharmaceutical industries, and industrial fluid handling systems.
- Strong focus on environmental compliance, workplace safety, and operational efficiency.
- Preferred for applications requiring reliable long-term chemical resistance.

Middle East

- Applied in petrochemical complexes, oil refineries, chemical manufacturing facilities, and industrial infrastructure projects.
- Designed to perform under high temperatures and aggressive chemical service conditions.
- Strong demand driven by petrochemical industry growth and industrial diversification initiatives.

Africa

- Used in chemical plants, mining operations, water treatment facilities, industrial processing units, and infrastructure projects.
- Increasing adoption due to industrialization and growth in chemical manufacturing sectors.
- Preferred for durability, safety, and low maintenance requirements.

Southeast Asia

- Widely used in chemical processing, pharmaceuticals, industrial manufacturing, petrochemical facilities, and bulk chemical handling systems.
- Strong demand driven by rapid industrialization and manufacturing expansion.
- Suitable for tropical climates, high humidity, and continuous operating conditions.

Australia

- Commonly utilized in mining operations, chemical manufacturing plants, refineries, water treatment facilities, and industrial processing industries.
- Preferred for safe chemical transfer under demanding operating conditions.
- Strong demand from industrial, mining, infrastructure, and resource development sectors.

Get in touch:

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