

SOLAR PANEL CLEANING CHEMICALS

Spotless Panels, Spot-On Efficiency



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The global shift towards renewable solar energy is accelerating as nations seek sustainable and eco-friendly power solutions. Cleaning solar panels is a crucial aspect of this transition, significantly enhancing efficiency and energy output. Regular maintenance ensures optimal performance, extends panel lifespan, and maximizes return on investment. Proper upkeep makes solar energy a more viable and attractive option for meeting the world's growing energy demands.

ISSUES WITH TRADITIONAL CLEANING METHODS



WATER QUALITY ISSUES

Regular tap water or groundwater contains minerals such as calcium, magnesium, strontium, barium, etc., that precipitate and form hard, rock-like deposits on the surfaces during cleaning. These mineral deposits, often referred to as hard water stains or scaling, create a film on the panels that blocks sunlight and reduces the panels' efficiency. Over time, this scaling becomes very difficult to remove. Water with iron particles leads to the formation of rust-like stains on solar panels. These ferric deposits not only make the panels look unsightly but also obstruct light penetration, reducing the efficiency of energy conversion.



INADEQUATE CLEANING OF STUBBORN RESIDUES

Water alone might not effectively remove all types of contaminants. For example, bird droppings, pollen, and industrial pollutants can adhere strongly to the panel surfaces. These contaminants often require more than just water to be completely removed, as they can etch into the protective coatings of the panels if left untreated, leading to permanent damage.



POTENTIAL FOR PHYSICAL DAMAGE

The method of applying water — often through high-pressure hoses or sprayers — can also pose a risk. If not done correctly, the force of the water can damage the solar panels' delicate surfaces or disturb their alignment. This is particularly true for older or less durable panel installations.



INCREASED CLEANING DIFFICULTY AND COSTS

The rock-solid deposits formed by iron and calcium make the cleaning process more labor-intensive and costly. Traditional methods like simple rinsing become ineffective, requiring the use of specialized cleaning agents and equipment to restore the panels to their optimal condition





DID YOU KNOW?

On an average, it's taken about 40L of water to clean just 100sq.ft of solar panel installation. In areas with water scarcity, this is not just costly but also unsustainable.

PROVEN FACTS

Solar panels can lose between 15% to 25% of their efficiency due to the accumulation of dirt, dust, and other residues if not cleaned properly.







SPECIALITY CHEMICALS CLEANS BETTER

The use of specialized cleaning chemicals for solar panels offers several critical advantages over traditional water-only cleaning methods, particularly in enhancing the performance and longevity of solar installations. Here's why these chemicals are essential:



ENHANCED CLEANING EFFICIENCY

Specialized chemicals dissolve stubborn residues like bird droppings, pollen, pollutants, and oily substances, ensuring the panels are not only visually clean but also optimized for maximum solar absorption and efficiency.



PREVENTION OF MINERAL BUILD-UP

In areas with hard water, minerals can leave deposits on panels that block sunlight. Specialized chemicals prevent these deposits, maintaining a clear surface for optimal solar efficiency.



REDUCED WATER USAGE

More effective at removing contaminants, specialized chemicals reduce the amount of water needed for cleaning. This is beneficial in arid regions or where water conservation is a priority.



LONGEVITY AND MAINTENANCE

By removing abrasive materials, specialized chemicals help prevent scratches and degradation, extending the life of the panels and ensuring they operate at peak efficiency for longer, thus reducing maintenance and replacement costs.



ENVIRONMENTAL SAFETY

Modern cleaning chemicals are biodegradable, non-toxic, and free from harsh chemicals, making them safe for use in environmentally sensitive areas.



COST-EFFECTIVENESS

Although initially more expensive than water, specialized chemicals increase energy production and reduce maintenance costs, making them a cost-effective choice over the lifespan of the solar installation. Cleaner panels mean higher energy output and less frequent cleaning.



PRODUCT RANGE



DETPOL SPC

SOLAR PANEL CLEANING SOLUTION (Neutral pH)

Specifically formulated non-acidic, non-caustic solution, used for optimal cleaning of photovoltaic (PV) / solar panels, ensuring maximum power generation. This advanced cleaner effectively removes a wide range of contaminants and rinses away without leaving any spots. It is free from harsh chemical solvents, making it safe for regular use. It efficiently removes dust, ash, oil, grime, and organic droppings from PV/ Solar Panel surfaces, maintaining the panels' efficiency and longevity.

FEATURES & BENEFITS

- Efficient Cleaning Ability
- Neutral pH, Non-Corrosive Nature
- Antistatic Properties
- Prevents and Cleans Scaling and Bird Droppings
- Environmentally Friendly and Biodegradable
- Compatibility with All Equipment Metallurgy and Sprayer Nozzles
- Non-Scratching to Polymer Coatings
- Suitable for Use with Hard Water

TYPICAL PHYSICO-CHEMICAL SPECIFICATIONS

Attributes	Typical Values
Form & Appearance	Light Pink Liquid
Odor	Characteristic
pH (Neat)	6.5 - 7.5
Solubility	Soluble in water

4.0% by vol. of DETPOL SPC is to be diluted in water, i.e., 40 ml in 1L of water.

- Prepare the solution at the recommended use concentration
- Spread the solution evenly across a module or panel surface of approximately 10 sq. metre, using a wiper or blunt spatula.
- Allow the solution to remain in contact with the surface for 45 60 minutes.
- Rinse the surface thoroughly with high-pressure water, to remove the residues







DETPOL SPC 2

HEAVY DUTY SOLAR PANEL CLEANING LIQUID & GEL (For Carbonaceous & Cementeous Deposits)

Our advanced solar panel cleaner effectively removes industrial pollutants like cement dust and grime, ensuring peak performance and light penetration. Designed to maintain solar panel efficiency, it features antistatic and anti-deposition properties to prevent contaminant buildup. Ideal for industrial environments, this solution enhances panel efficiency and longevity by inhibiting rapid degradation.

€ FEATURES & BENEFITS

- Effective over stubborn deposits of cements, ash, flashovers, etc.
- Proven to Improve Efficiency
- Antistatic & Anti-deposition Technology
- Safe and Eco-Friendly
- Cost-Efficient Solution
- Easy Application
- Maintenance Benefits

TYPICAL PHYSICO-CHEMICAL SPECIFICATIONS

Attributes	DETPOL SPC 2L	DETPOL SPC 2G
Form & Appearance	Pink Liquid	Pink Liquid Gel
Odor	Characteristic	Characteristic
pH (Neat)	< 2.0	< 2.0
Solubility	Soluble in water	Soluble in water

- DETPOL SPC 2G: Ready-to-use
- DETPOL SPC 2L: 1 Part with 2 4 parts waters.

The appropriate dosage of DETPOL SPC 2 varies based on the level of contamination. For standard applications, apply 1 liter of DETPOL SPC 2G evenly over the solar modules using a wiper or blunt spatula. DETPOL SPC 2L, the concentrated variant, requires dilution prior to use. Typically, dilute 1 part of DETPOL SPC 2L with 2 to 4 parts water for optimal results. Adjust the dilution ratio according to the severity of contamination to ensure effective cleaning.

• Rinse the solar panels with plain water to remove loose dust and debris.

• Prepare the DETPOL SPC 2 solution as per the required dosage. Apply the solution evenly across the module or panel surface of approximately 10 sq. metre using Hydro Tubes, Hydro Stations, Hydro Carts, Automatic Scrubbers, Speed Brushes, or Refill Pads.

• Gently scrub the panels to dislodge and remove grime and contaminants. Ensure uniform application across the panel surface.

- Rinse the panels again with water to wash away the cleaning solution and any remaining dirt.
- Wipe the panels dry with a soft cotton cloth to prevent water spots and streaks.

COVERAGE AREA CALCULATION

TOTAL SOLUTION VOLUME

When mixing 40ml of DETPOL SPC concentrate with 1L of water, you generate approximately 1.04L of cleaning solution.

COVERAGE RATE

1L of cleaning solution can clean approximately 10 square meters (107.64 square feet) of solar panel surface.

COVERAGE AREA

With 1.04L of solution, you can clean approximately 10.4 square meters (111.946 square feet) of solar panel surface.

A 5L CONCENTRATE BATCH PRODUCES 130L OF DILUTED SOLUTION, YIELDING APPROXIMATELY 1,300 SQUARE METERS (13,987.2 SQUARE FEET) OF CLEANING COVERAGE.

AREA CONVERSION:

1 square meter = 10.764 square feet. Therefore, 1,300 square meters equates to approximately 13,987.2 square feet.

PANEL AREA CALCULATION:

Solar panel dimensions: 65 inches by 39 inches (165 cm by 99 cm) Width: 65 inches / 12 inches/foot = 5.4167 feet Height: 39 inches / 12 inches/foot = 3.25 feet Area of one panel: Width x Height = 5.4167 feet x 3.25 feet ≈ 17.58 square feet

NUMBER OF SOLAR PANELS CLEANED:

With a total coverage area of 13,987.2 square feet, you can clean approximately 796 solar panels, each panel with an area of 17.58 square feet.

COST BENEFIT ANALYSIS

The investment required for home solar panel installation can differ significantly based on each building's specific needs, including roof characteristics, shading, and utility requirements. In India, the cost per watt for solar panels generally ranges from Rs. 75,000 to Rs. 85,000. Consequently, the average expenditure for a 1kW solar panel system typically falls between Rs. 75,000 and Rs. 85,000

FOR A PANEL OF 100 SQUARE METRE, 1L OF DETPOL SPC IS USED.

Rs. 200 X 12 = Rs. 2400

with 5 liters of Detpol SPC solar panel cleaning chemicals, approximately 796 solar panels can be cleaned. While cost of 100 square metre solar panel = Rs. 10,000





STEPS TO CLEAN SOLAR PANELS



SAFETY FIRST

Ensure your safety with harnesses or stable ladders if cleaning on rooftops, and turn off the solar panel system to avoid electrical shocks.

MANUFACTURER'S GUIDELINES

Review any specific cleaning instructions from the panel manufacturer to avoid damage. Choose the right time. clean early in the morning or late in the evening to avoid evaporation of water.





CHOOSE THE RIGHT TIME

Clean early in the morning or late in the evening to avoid evaporation of water and detergent residue

REMOVE LOOSE DEBRIS

Use a soft brush or leaf blower to clear dirt and leaves.





RINSE PANELS

Gently rinse with a hose to remove dust and loose dirt.

PREPARE CLEANING SOLUTION

Ensure your safety with harnesses or stable ladders if cleaning on rooftops, and turn off the solar panel system to avoid electrical shocks.





CLEAN PANELS

Gently scrub with a soft cloth or sponge in circular motions. For dirty panels, use a soft brush or squeegee.

RINSE THOROUGHLY

Remove residues with clean water.





DRY THE PANELS

Air dry or use a soft squeegee to remove excess wate

INSPECT THE PANELS

Check for any remaining dirt or damage, and repeat the cleaning process if needed.





USING CHEMTEX'S DETPOL RANGE TRANSLATES INTO SEVERAL TANGIBLE BENEFITS









Proper safety products such as splash goggles, gloves, lab coat should be worn while handling and applying chemicals. Splashes on skin to be washed off with water immediately. In case of splashing into the eyes, flush them with fresh water and seek medical attention. **Should not be injected.**



DETPOL SPC should be stored in original containers in cool dry place, away from heat, direct sunlight and alkalis. Store in cool and dry place.



PRODUCT	PACK SIZE	PACK IMAGE
DETPOL SPC	5kg/50kg	
DETPOL SPC 2	20kg/50kg	







Estd. 1970 Five decades in speciality chemical manufacturing



600+ Speciality Chemicals



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