



NOBURST®

Antifreeze & Heat Transfer Fluid



NOBURST AL



- Use with ALL Metals
- Special Inhibitor Package
- Non-Corrosive
- High System Efficiency
- Blended with Deionized Water

NOBURST -100



- Non-toxic*
- Non-Corrosive
- High System Efficiency
- Blended with deionized water

SUPER NOBURST



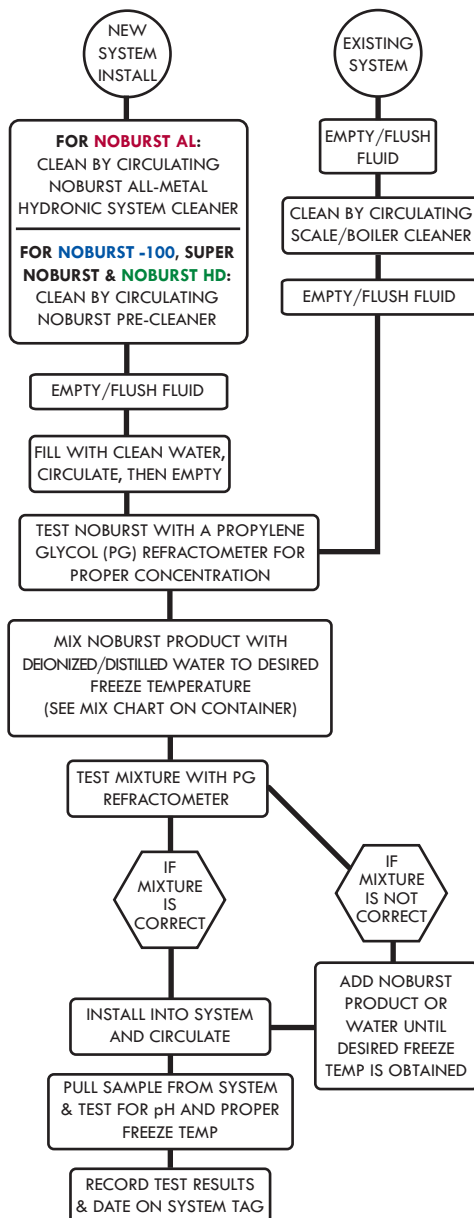
- Concentrated Formula
- Non-toxic*
- Non-Corrosive
- High System Efficiency
- Blended with deionized water

NOBURST HD

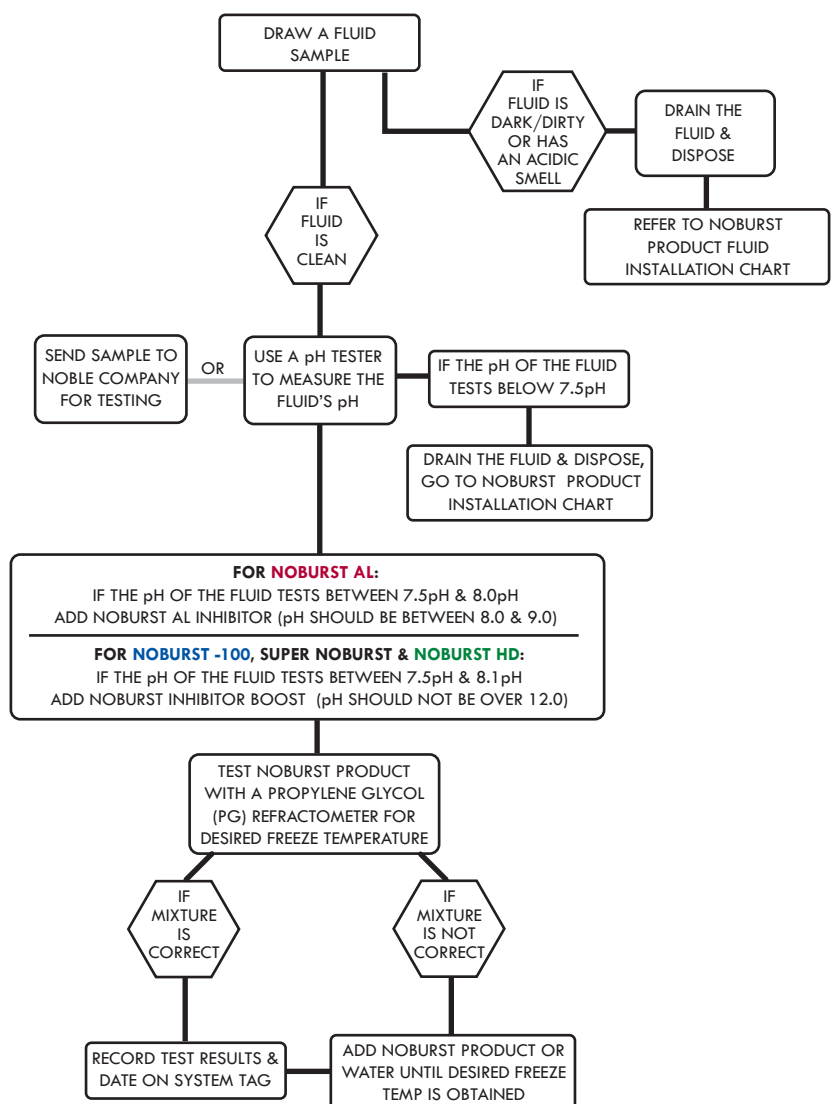


- Extended Temperature Range
- Non-toxic*
- Non-Corrosive
- High System Efficiency
- Blended with deionized water

NOBURST Fluid Installation



NOBURST Fluid Maintenance



NOBURST AL



NOBURST -100



Freeze Point
Flow Point
Burst Point

AL	-100				
100%	75%	50%	100%	75%	50%
-60°F	-30°F	0°F	-60°F	-30°F	0°F
-70°F	-40°F	-10°F	-70°F	-40°F	-10°F
-100°F	-80°F	-60°F	-100°F	-80°F	-60°F

Boiling Point
Viscosity (at 160°F)
Specific Gravity (at 72°F)
Thermal Conductivity (at 160°F)
BTU/ Hr-ft(2)/ (F/ ft)
Specific Heat Capacity (at 160°F)

238°F	224°F	218°F	238°F	224°F	218°F
2.60	1.70	0.99	2.60	1.70	0.99
1.055	1.050	1.035	1.055	1.050	1.035
0.165	0.205	0.258	0.165	0.205	0.258
0.787	0.870	0.937	0.787	0.870	0.937

Sizes

1 Gallon Bottles	5 Gallon Pails	30 Gallon Drums	1 Gallon Bottles	5 Gallon Pails	30 Gallon Drums
	X	X	X	X	X
55 Gallon Drums	275 Gallon Bottles	5000 Gallon Tank Trucks	55 Gallon Drums	275 Gallon Bottles	5000 Gallon Tank Trucks
X	X	X	X	X	X

Heat Transfer Properties

	Relative System Efficiency ²	Thermal Conductivity BTU/HR/FT ² /F	Viscosity (Centipoises)	Foam Character	Cold Protection Level (F°)
Water	1.000	0.35	0.42	None	+32°
Noburst—100					
50%	0.930	0.270	1.00	None	-60°
75%	0.833	0.223	1.50	None	-80°
100%	0.799	0.170	2.50	None	-100°
Ethylene Glycol ³					
50%	0.896	0.237	1.40	Slight	-34°
75%	0.772	0.183	2.75	Slight	-60°
100%	0.693	0.151	5.00	Slight	+5°
Silicone					
SylTherm 444 ⁴	0.351	0.082	9.86	Slight	-121°
SylTherm 800 ⁴	0.369	0.074	5.00	Slight	-40°
Synthetic					
Hydro-Carbon ⁵	0.475	0.070	11.69	High	-40°
Terephenyl ⁶	0.409	0.0677	9.86	Very High	-20°

1. Table data obtained from Dow Chemical Company, Noble Company tests, and competitors' product literature. All comparisons (except cold protection level) are at fluid temperatures of +150°F
2. System efficiency as a function of specific heat and fluid density with no change in fluid flow rate.
3. Data is for DowTherm brand Ethylene Glycol, trademark and product of the Dow Chemical Company.
4. Syltherm is a trademark and product of Dow-Corning Corporation
5. Data is for H-30 a product of Mark Enterprises.
6. Data is for Thermal 66 Modified Terphenyl, a product of Monsanto Industrial Chemicals Company.

SUPER NOBURST



NOBURST HD



Super				HD			
100%	75%	50%	40%	100%	75%	50%	40%
>-60°F	-60°F	-30°F	-7°F	-60°F	-60°F	-30°F	-7°F
-70°F	-70°F	-40°F	-15°F	-70°F	-60°F	-40°F	-15°F
-100°F	-100°F	-85°F	-65°F	-100°F	-100°F	-75°F	-60°F

Freeze Point

Flow Point

Burst Point

310°F	237°F	222°F	219°F	310°F	237°F	222°F	219°F
4.13	2.47	1.35	1.04	4.13	2.47	1.35	1.04
1.052	1.054	1.044	1.037	1.052	1.054	1.044	1.037
0.126	0.152	0.211	0.240	0.126	0.152	0.211	0.240
0.696	0.781	0.891	0.925	0.696	0.781	0.891	0.925

Boiling Point

Viscosity (at 160°F)

Specific Gravity (at 72°F)

Thermal Conductivity (at 160°F)

BTU/ Hr-ft(2)/ (F-ft)

Specific Heat Capacity (at 160°F)

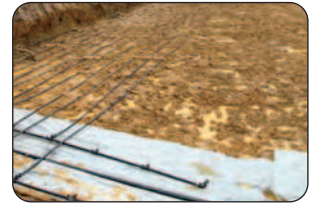
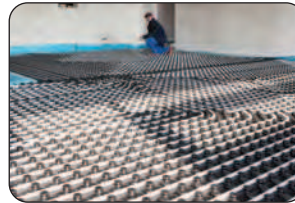
1 Gallon Bottles	5 Gallon Pails	30 Gallon Drums
	X	X
55 Gallon Drums	275 Gallon Bates	5000 Gallon Tank Trucks
X	X	X

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X	X	X
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X	X	X

Sizes

Applications

- • • • Hydronic heating systems
 - Solar heating
 - Geothermal
- • • • “Air hydronic” heat pumps & furnaces
- • • • Water-based heat extraction systems
- • • • Cooling systems & chillers
- • • • Refrigerating systems
- • • • Cooling towers
- • • • Industrial heat transfer
- • • • Plumbing winterization
- • • • Snow melt systems
- • • • In-floor heating



NOBURST ACCESSORIES



System Pre-Cleaner

- Removes flux, oil and grease from new systems, assuring maximum performance.
- Use one pint for every 50 gallons of system capacity.

For use with: **NOBURST -100, SUPER NOBURST, NOBURST HD**



Inhibitor Boost

- Regenerates corrosion inhibitors and extends the life of NOBURST in a system.
- Not for use with NOBURST AL.
- Use one pint for every 20 gallons of system capacity.

For use with: **NOBURST -100, SUPER NOBURST, NOBURST HD**



E-3 Defoaming Agent

- To aid in removing air from the system. Air can cause corrosion, reduce circulation, waste energy and cause noise.
- Use one pint for every 25 gallons of system capacity.

For use with: **NOBURST -100, SUPER NOBURST, NOBURST HD**



Hydronic System Cleaner

- Penetrates and disperses a broad range of mineral and organic deposits.
- Helps recover efficiency in older, corroded systems.
- Cleans aluminum, iron, copper, brass, and stainless steel.
- Suitable for use with Onix & Pex tubing.
- Contains no TSP, acids or heavy metals.
- Use one gallon for every 50 gallons of system capacity.

For use with: **NOBURST AL, NOBURST -100, SUPER NOBURST, NOBURST HD**



ALL Metals Inhibitor

- Reduces the rate of corrosion and helps prevent scale formation on heat exchanger surfaces.
- Safe on all metal systems (including aluminum).
- Can be used with water only systems.
- Compatible with PEX and ONIX tubing used in hydronic installations.
- Use one gallon for every 50 gallons of system capacity.

For use with: **NOBURST AL**



Test Kit

Good

- Measures the concentration of NOBURST and reserve alkalinity, allowing you to determine the actual level of freeze and corrosion protection in a system.
- Each kit will do 10 tests.

For use with: **NOBURST -100, SUPER NOBURST, NOBURST HD**



Economy Analog Refractometer

Good

- For testing the freeze point.
- Use for testing propylene glycol.

For use with: **NOBURST AL, NOBURST -100, SUPER NOBURST, NOBURST HD**



Analog Refractometer

Better

- For testing the freeze point.
- Use for testing propylene glycol.
- Can also be used to test batteries.

For use with: **NOBURST AL, NOBURST -100, SUPER NOBURST, NOBURST HD**



Palm Abbe Digital Refractometer

Best

- Instant results:
 - Freezing Point (PG & GL)
 - % concentration by volume
- Use for testing propylene glycol or glycerine
- Auto callibration

For use with: **NOBURST AL, NOBURST -100, SUPER NOBURST, NOBURST HD**



Maintenance:

Systems with **NOBURST** installed should be tested at least annually for adequate **NOBURST** concentration and corrosion inhibitor protection level. If **NOBURST** concentration is low, add **NOBURST** according to the **Formula to Increase NOBURST Concentration**:

- Example:**
- 400 Gallon Capacity
 - 75% **NOBURST** Desired
 - 50% **NOBURST** currently in system
 - 100% **NOBURST** in a **NOBURST** container
 - Step 1: 75 minus 50 = 25 (Desired – Current)
 - Step 2: 100 minus 50 = 50 (100% **NOBURST** – Current)
 - Step 3: 400 x 25 = 10,000 (Capacity x Desired – Current)
 - Step 4: 10,000 divided by 50 = 200

Conclusion: 200 gallons of **NOBURST -100** must be added to the 200 gallons of 50% solution currently in the system to reach a 75% total solution. Before adding additional **NOBURST**, drain adequate fluid from the system so that when the new **NOBURST** is added, the operating pressure will not be too high. If the corrosion inhibitor tests low, add one pint of **NOBURST Inhibitor Boost** for every 20 gallons of fluid capacity of the system. If the total system capacity is less than 20 gallons, use one pint. If after Inhibitor Boost addition and thorough system mixing the corrosion inhibitor still tests low, add another pint for every 20 gallons system capacity. If after this addition the inhibitor still tests low, the system has been contaminated with minerals or an acidic chemical. The system should be drained, cleaned, and recharged with fresh **NOBURST**.

Testing: To test the freeze protection level of **NOBURST**, the correct instrument must be used.

System Requirements, Limitations & Cautions:

- **NOBURST** should not be used in systems where temperatures regularly exceed 275°F or in systems that are permanently open to the atmosphere. Use **NOBURST HD** in systems where temperatures exceed 275°F, up to 325°F, such as solar hot water systems.
- Systems constructed of aluminum will also experience corrosion with **NOBURST**, particularly if high temperatures (125°F +) are expected. For systems with aluminum, use **NOBURST AL**. All other common metals are protected from corrosion with **NOBURST -100** and **SUPER NOBURST**.
- **NOBURST** products should not be used in systems containing galvanized metal. **NOBURST** is not recommended for use with CPVC or PVC.
- Should not be used in steam-type heating systems.
- Should not be used as a coolant for internal combustion engines.
- Although existing systems require no modification, in new systems being designed for use with **NOBURST** the following modifications are recommended: (1) the expansion tank should be sized to allow about 4% greater expansion than for plain water in the same temperature range; (2) the pump head should be increased by 10% over the minimum requirements for those with plain water; and (3) a strainer should be installed in the return line ahead of the pump.
- A well maintained hydronic system using **NOBURST** should not require other treatment chemicals. **NOBURST** should not be used with other water treatment chemicals. Noble Company cannot test all possible combinations of chemicals for compatibility and proper performance. Although **NOBURST** is compatible with the leading stop-leak chemicals, we do not recommend the use of these chemicals because of their possible detrimental influence on equipment.

Ingredients:

Active Ingredient: Propylene Glycol. Corrosion Inhibitor.

Other Ingredients: Viscosity Reduction Agent, Dye, Deionized Water, and Defoaming Agent (not an ingredient in **NOBURST HD**).

Flammability: Non-flammable.

NOBURST is not flammable since it has no measurable flashpoint (Pensky-Martens Closed Cup); however, if the product comes in extended contact with open flame, it is possible it will ignite. Material Safety Data Sheets available upon request.

Fumes: Non-hazardous.

Environmental Hazard: LOW.

NOBURST is not toxic to animals or plants. Spills may generally be disposed of through city sanitary sewer; however, local sewer authorities should be contacted prior to disposal. Large spills, uncontrolled disposal, and waterway discharge should be avoided since **NOBURST** biodegrades rapidly, possibly depleting oxygen supply in bodies of water which can result in fish kill. All uncontrolled spills should be reported to local authorities. Water softeners should be disconnected from the boiler or provided with backflow protection to prevent contamination of the mineral bed.

Technical Support:

Noble offers technical services for the following:

- Specifications
- Field Services
- Installation design
- Installation techniques and unique applications
- Fluid Testing

For more information on any of these services, contact us by email (sales@noblecompany.com) or phone (toll free 800-878-5788). Additional product information and MSDS are available immediately through our website at www.noblecompany.com.

Availability: **NOBURST** is available throughout the U.S. through heating and plumbing wholesalers. Factory representatives cover all fifty states. Please contact Noble Company for your local representative and wholesalers.

***Toxicology, Environmental & Health Info:** Gosselin Toxicity Index (Propylene Glycol): 1 “essentially non-toxic”. Mean Single Lethal (Oral) Dosage: greater than one liter. **FDA Reference:** Propylene Glycol: 21 CFR 182.1666, Dipotassium Phosphate: 21 CFR 182.6285. Both qualify as “Generally Recognized as Safe for use as Direct Food Additives”.