



NOBURST®

NOBURST Antifreeze & Heat Transfer Fluid

Factory Pre-mixed Freeze Protection for Water-based Heating and Cooling Systems

NOBURST non-toxic* antifreeze solutions are to be used in place of water and other water-like fluids in systems where freezing may either cause damage or interfere with the functioning of systems or equipment and/or toxicity to humans or animals is a concern.¹





NOBURST -100

- Non-toxic
- Non-corrosive
- High efficiency
- Blended with deionized water

NOBURST -100 is to be used in place of water and other water-like fluids in systems where freezing may either cause damage or interfere with the functioning of systems or equipment and/or toxicity to humans or animals is a concern. Not for use in automotive systems or in systems containing galvanized pipe.



NOBURST AL

- Use with all metals
- Non-corrosive
- Special inhibitor package
- High efficiency
- Blended with deionized water

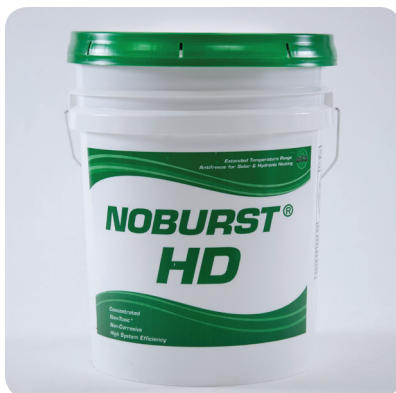
An antifreeze and heat transfer fluid for systems which contain aluminum components. NOBURST AL has inhibitor technology that is compatible with all metals commonly used in hydronic heating systems including brass, cast iron, steel, solder, copper, and aluminum. *NOBURST AL is not to be used in contact with or potential contact with potable water.*



SUPER NOBURST

- Concentrated formula
- Non-toxic
- Non-corrosive
- High efficiency

SUPER NOBURST is for hydronic boilers and solar systems. With proper installation and annual inspection, it will protect systems from freeze damage and severe corrosion for 10 years. This product must NOT be used in automotive cooling systems or with galvanized metals containing zinc or aluminum.



NOBURST HD

- Extended temperature range
- Non-toxic
- Non-corrosive
- High efficiency
- Blended with deionized water

NOBURST HD is a non-toxic* antifreeze and heat transfer fluid with a special inhibitor package allowing for use where system temperatures demand glycol stability. Safe for use up to 325° F. Does not contain silicone-based additives, which can harm systems at high temperatures.



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.
- 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 -100**, **Super NOBURST**, **NOBURST HD**, **NOBURST AL**



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.
- Suitable for use with Onix & Pex 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**



ANALOG REFRACTOMETER

BETTER

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

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



ECONOMY ANALOG REFRACTOMETER

GOOD

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

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



PALM ABBE DIGITAL REFRACTOMETER

BEST

- Instant results of freezing point (PG & GL) and % concentration by volume
- Use for testing propylene glycol and glycerine
- Auto calibration

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





NOBURST -100

	100%	75%	50%
Boiling Point	238° F	224° F	218° F
Specific Gravity*	1.055	1.046	1.035
Viscosity**	2.19	1.43	0.93
Specific Heat Capacity**	0.806	0.890	0.939
Thermal Conductivity** BTU/Hr-ft(2)/(F/ft)	0.161	0.205	0.256

AVAILABLE SIZES

- 1-gallon bottles (*NOBURST -100*)
- 5-gallon pails
- 30-gallon drums
- 55-gallon drums
- 275-gallon totes
- 5,000-gallon tank trucks

CUSTOM BLENDS

Custom formulations are available. Please contact Noble Company for more information.

AVAILABILITY

NOBURST is available throughout the U.S. through wholesale distributors. Please contact Noble Company for your local representative and wholesaler.

INGREDIENTS

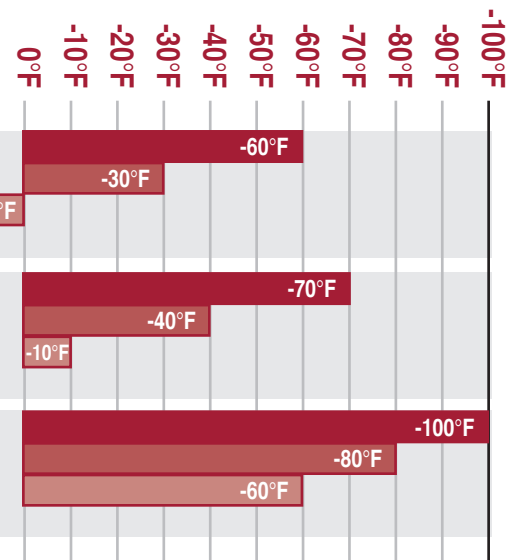
Active Ingredients: Propylene glycol and corrosion inhibitor.
Other Ingredients: Viscosity reduction agent, dye, deionized water, and defoaming agent (not an ingredient in NOBURST HD).



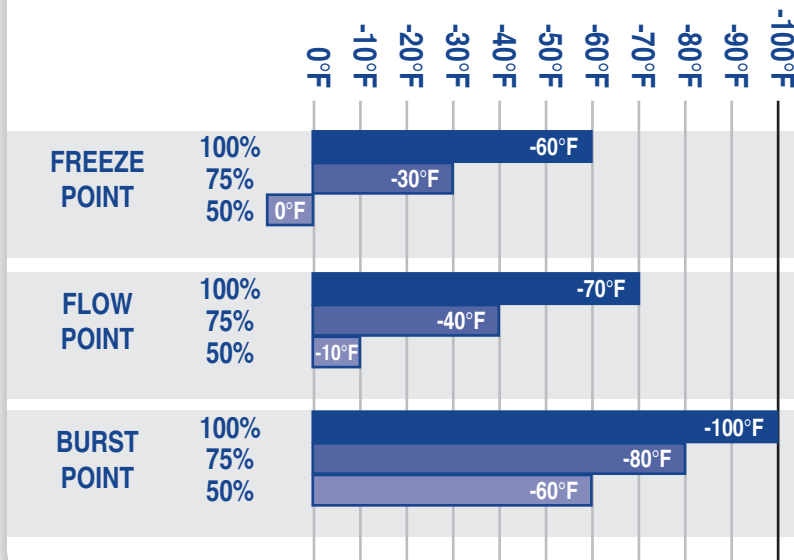
NOBURST AL

	100%	75%	50%
Boiling Point	238° F	224° F	218° F
Specific Gravity*	1.055	1.046	1.035
Viscosity**	2.19	1.43	0.93
Specific Heat Capacity**	0.806	0.890	0.939
Thermal Conductivity** BTU/Hr-ft(2)/(F/ft)	0.161	0.205	0.256

NOBURST AL SYSTEM PROTECTION



NOBURST -100 SYSTEM PROTECTION



SYSTEM PROTECTION

Freeze Point is the temperature where the first ice crystal forms in the fluid. Burst point is the temperature where the fluid is solid, expanding, and bursting the vessel. *Specific gravity measured at 72°F. **Viscosity, specific heat capacity, and thermal conductivity are measured at 160°F.



Super NOBURST

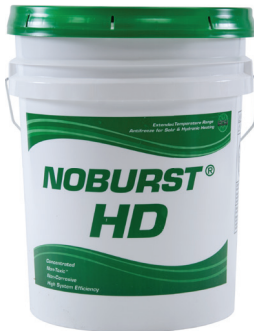
	100%	75%	50%	40%
Boiling Point	310° F	237° F	222° F	219° F
Specific Gravity*	1.052	1.054	1.044	1.031
Viscosity**	4.13	2.30	1.29	1.00
Specific Heat Capacity**	0.696	0.796	0.898	0.929
Thermal Conductivity**	0.126	0.157	0.217	0.251
BTU/Hr-ft(2)/(F/ft)				

AVAILABLE SIZES

- 1-gallon bottles (NOBURST HD)
- 5-gallon pails
- 30-gallon drums
- 55-gallon drums
- 275-gallon totes
- 5,000-gallon tank trucks

CUSTOM BLENDS

Custom formulations are available. Please contact Noble Company for more information.



NOBURST HD

	100%	75%	50%	40%
Boiling Point	310° F	237° F	222° F	219° F
Specific Gravity*	1.052	1.054	1.044	1.037
Viscosity**	4.13	2.21	1.26	0.99
Specific Heat Capacity**	0.696	0.803	0.901	0.932
Thermal Conductivity**	0.126	0.160	0.220	0.247
BTU/Hr-ft(2)/(F/ft)				

AVAILABILITY

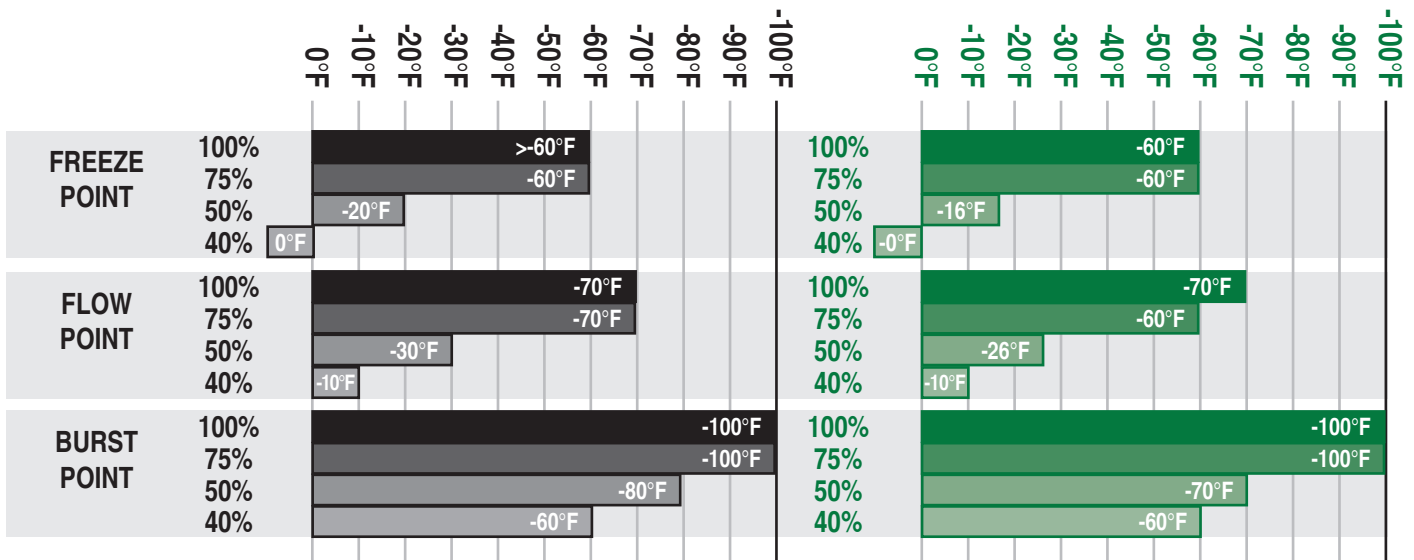
NOBURST is available throughout the U.S. through wholesale distributors. Please contact Noble Company for your local representative and wholesaler.

INGREDIENTS

Active Ingredients: Propylene glycol and corrosion inhibitor.
Other Ingredients: Viscosity reduction agent, dye, deionized water, and defoaming agent (not an ingredient in NOBURST HD).

Super NOBURST SYSTEM PROTECTION

NOBURST HD SYSTEM PROTECTION



SYSTEM PROTECTION

Freeze Point is the temperature where the first ice crystal forms in the fluid. Burst point is the temperature where the fluid is solid, expanding, and bursting the vessel. *Specific gravity measured at 72°F. **Viscosity, specific heat capacity, and thermal conductivity are measured at 160°F.

APPLICATIONS

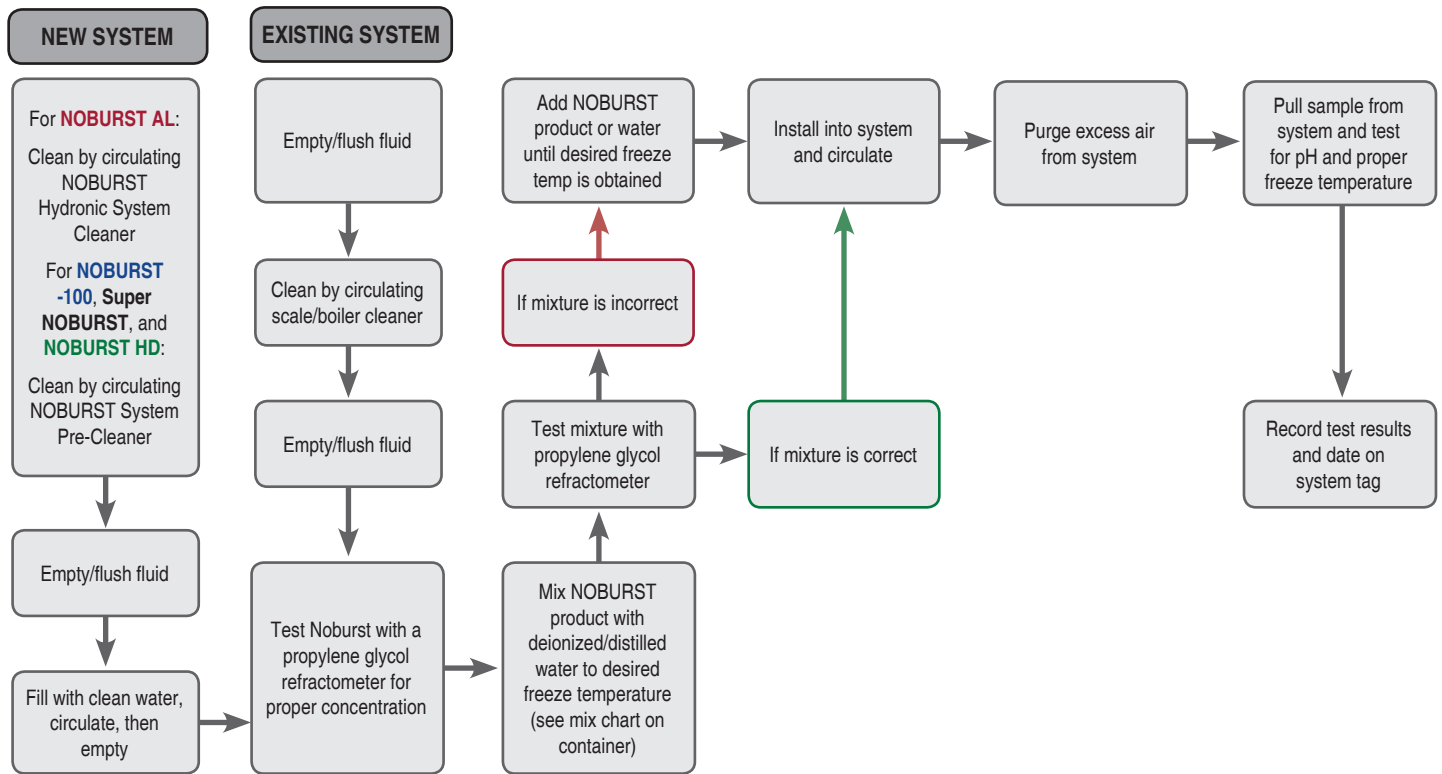
SYSTEM TYPE	NOBURST -100	NOBURST AL	Super NOBURST	NOBURST HD
Hydronic heat systems	●	●	●	●
Solar heating systems				●
Geothermal systems				●
“Air Hydronic” heat pumps	●		●	
“Air Hydronic” furnaces	●		●	
Water-based heat extraction systems	●	●	●	●
Cooling systems & chillers	●	●	●	●
Refrigerating systems	●	●	●	●
Cooling towers	●	●	●	●
Industrial heat transfer	●	●	●	●
Plumbing winterization	●		●	
Snow melt systems	●	●	●	
In-floor heating	●	●	●	●

HEAT TRANSFER PROPERTIES

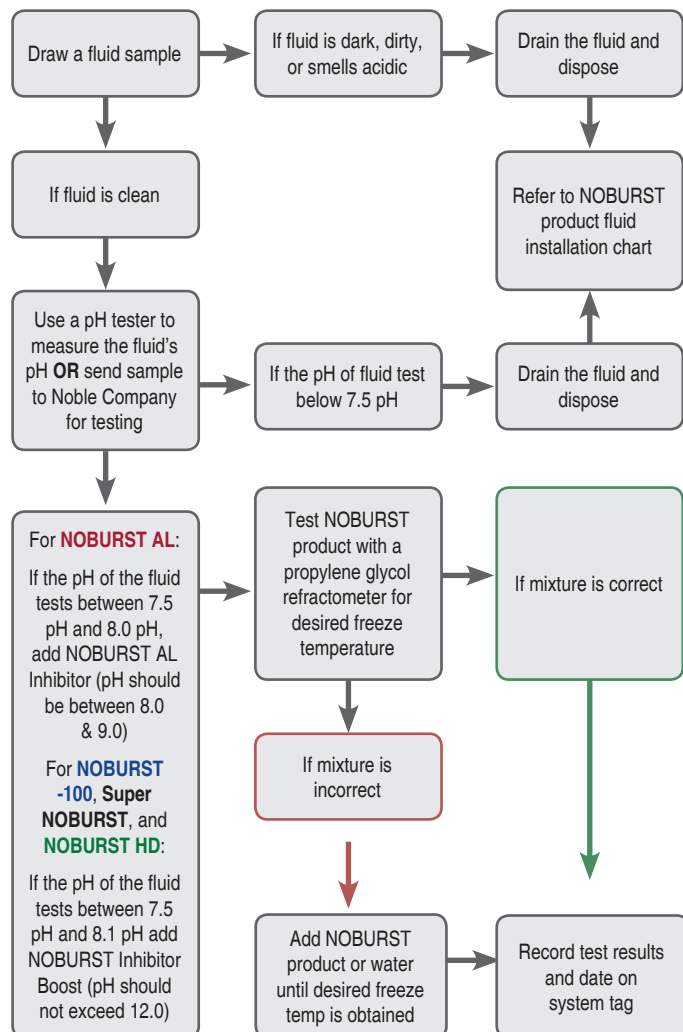
	Relative System Efficiency ²	Thermal Conductivity BTU/HR/FT ² /°F	Viscosity (Centipoises)	Foam Character	Cold Protection Level (F °)
Water	1.000	0.35	0.42	None	+32°
Noburst -100 (50%)	0.930	0.256	0.93	None	-60°
Noburst -100 (75%)	0.833	0.205	1.43	None	-80°
Noburst -100 (100%)	0.799	0.165	2.19	None	-100°
Ethylene Glycol³ (50%)	0.896	0.237	1.40	Slight	-34°
Ethylene Glycol³ (75%)	0.772	0.183	2.75	Slight	-60°
Ethylene Glycol³ (100%)	0.693	0.151	5.00	Slight	+5°
Silicone SlyTherm 444⁴	0.351	0.082	9.86	Slight	-121°
SlyTherm800⁴	0.369	0.074	5.00	Slight	-40°
Synthetic Hydro-Carbon³	0.475	0.070	11.69	High	-40°
Therephenyl⁶	0.409	0.0677	9.86	Very High	-20°

1. Table data obtained from Dow Chemical, 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. Slytherm is a Trademark and product of Dow-Corning Corporation.
5. Data is for H-30, a product of Mark Enterprises.
6. Data is for Thermanal 66 Modified Terphenyl, a product of Monsanto Industrial Chemicals Company.

FLUID INSTALLATION



FLUID MAINTENANCE



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 this **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.

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**, Super NOBURST, and **NOBURST HD**.
- 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.

TESTING

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

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.

TECHNICAL SUPPORT

Noble offers technical services for the following:

- Specifications
- Field Services
- Installation Design
- Installation Techniques and Unique Applications
- Fluid Testing

Address inquiries ATTN: NOBURST Technical Support, Email: sales@noblecompany.com or phone at: 800-878-5788. Field services are available through factory representatives and Noble Company staff. Contact Noble Company for local representatives.

Additional product information and MSDS are available immediately through our website at www.noblecompany.com.

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.



FDA REFERENCE

NOBURST -100, NOBURST HD, and Super NOBURST are considered "Generally Recognized as Safe" by the Federal Food & Drug Administration. Non-Toxic is used to describe extremely low chronic and acute toxicity. No maximum safe intake for humans has been established.

TOXICOLOGICAL, ENVIRONMENTAL, & HEALTH INFORMATION

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".

