

Product Information

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Belsperse® 161 Dispersant – General Product Information

Belsperse 161 dispersant has been developed as a highly effective scale control agent and dispersant used primarily in boilers and industrial cleaning. The active ingredient of Belsperse 161 is a phosphino-carboxylic acid.

Typical Physical Properties

Appearance	Colorless liquid
Odor	Slight
Solids content	50% (w/w)
Specific gravity	1.20-1.24
pH (undiluted)	3.5-4.5
Viscosity at 25°C	90-150 cSt
Boiling point range	101-103°C (213-217°F)
Freezing point range	-1 to -3°C (30-27°F)
Theoretical phosphorus content (as P)	0.8% (w/w)
Solubility in:	
• water	Miscible
• ethylene glycol	Miscible
• methanol	Precipitate is formed
• 46% caustic soda	Miscible
pH limitations	Does not form insoluble sodium or potassium salts. It is hydrolytically stable and can be incorporated into concentrated formulations regardless of the final pH.

Thermal stability (DSC)

Differential scanning calorimetry has shown that Belsperse 161 is stable up to a temperature of 200°C (392°F).

Chemical reactivity

Belsperse 161 is not affected by chlorine or other oxidising biocides under normal use conditions. Further details on safety and handling are available in the materials safety data sheet on this product.

Logistics

Classification	non-hazardous for conveyance non-hazardous for supply
Packaging	HDPE 220l XL-ring Mauser drum Height 935 mm Diameter 580 mm Gross weight 544 lb Net weight 525 lb

Regulatory approvals

FDA	21 CFR 173.310 – boiler additives
USDA	G5: cooling and retort water G6: boilers and steamlines – possible food contact G7: boilers, steamlines and cooling systems – no food contact A1: cleaning compounds; meat/poultry plants B2/B2: laundry compounds; meat/poultry plants Q1: shell egg cleaning; meat/poultry plants

Toxicology data

Acute oral LD ₅₀ (rats)	>5000 mg/kg
Eye irritation (rabbits)	Non-irritant (EEC guidelines)
Skin irritation (rabbits)	Non-irritant (EEC guidelines)
Toxicity to fish:	
• rainbow trout	96-hr LC ₅₀ >1000 mg/l
• zebra fish	96-hr LC ₅₀ >1000 mg/l

Ecological data

96-hr LC ₅₀ (brown shrimp)	>10000 mg/l
24-hr EC ₅₀ (daphnia)	>320 mg/l
72-hr EC ₅₀ (algae inhibition)	130 mg/l
COD	890 mg O ₂ /g
Biodegradation	Not readily biodegradable 20% in 28 days (OECD301E)

Patents

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