

### Solving Problems in Manufacture

<b>Problem</b>	<b>Possible Cause</b>	<b>Action</b>
<i>Asphalt Content Too Low</i>	Asphalt density changed	Check density
	Volumetric flows wrong	Recalibrate flows
<i>Foaming of Emulsion</i>	Too high exit temperature	Check temperatures
	Incorrect filling of storage tank	Tank should be filled under liquid surface
	Air leak	Check packing and seals
<i>Shot (Large Particles 0.5-10mm) in Emulsion</i>	Contamination	Check soap tank for rust or other contamination. Check water quality
	Too high exit temperature causing boiling	Check temperatures
	Too low exit temperature	Check temperatures
	Asphalt contains poorly dispersed polymer	Check polymer dispersion
	Excessive shear applied to finished emulsion	Check pump clearances
	Too low emulsifier content	Increase emulsifier level. Check flows in in-line plants
	Mechanical problems in mill	
<i>Soap Phase Forms Gel</i>	Too low soap temperature	Increase temperature. If not possible use two-stage preparation of soap or select alternative emulsifier.
<i>Difficulty in Reaching Soap pH</i>	Faulty pH meter	Check with buffer.
	Too low soap temperature	Increase soap temperature
<i>Poor Emulsion Quality</i>	Emulsifier content too low or pH wrong	Check flows of emulsifier and acid in in-line plants
	Asphalt temperature too low	Check temperature
	Asphalt source	Consider asphalt peptizer or change source
	Too much calcium chloride	Reduce calcium chloride content

## ***Solving Problems in Storage and Handling***

<b><i>Problem</i></b>	<b><i>Possible cause</i></b>	<b><i>Action</i></b>
<i>Foam in the Emulsion</i>	Air leaks in the system	Check all gaskets, fittings, pumps
	Emulsion splashing when filling tank	Make sure inlet is below emulsion surface
	The emulsion surface is too low for agitation	Do not agitate before the emulsion surface is above the agitator
<i>Skin on Top of the Emulsion</i>	Water evaporating from the top	Use vertical tanks and fill tanks completely every production. Cool emulsion in a heat exchanger after the mill
	Foam which breaks	Avoid foam, see above
	Storage temperature too high	Reduce temperature
	Bad emulsion	Check formulation, add stabilizer
<i>Big Particles in Emulsion after Storage</i>	Too long storage	Produce shortly before intended use
	Local overheating	Increase heating area, reduce surface temperature
	Storage temperature too low or too high	Adjust temperatures
	Too little emulsifier or wrong type	Increase the emulsifier content or change to more stable type
	Contamination	Check for rust or insolubles in emulsion
	Too much agitation	Reduce agitation
<i>Breaking During Transport</i>	Wrong temperature	Adjust temperatures. Use trucks with insulation or heating for high viscous grades.
	Local overheating close to heating element	Bigger heating area
	Contamination (e.g. oppositely- charged emulsion, oils)	Make sure tank is clean before loading emulsion.
	Unstable formulation	Increase emulsifier content or reformulate

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