



MARZINE-PLUS™

DESCRIPTION

MARZINE-PLUS is a liquid, all volatile, activated Oxygen scavenger for use in low, medium and high pressure boilers.

MARZINE-PLUS eliminates dissolved Oxygen completely and rapidly, at lower temperatures, from boiler feed-water. At the same time it contains a catalyst that increases the reaction rate with dissolved Oxygen.

MARZINE-PLUS provides the required conditions for passivation of the metal surfaces through the formation of protective oxide films that will lead to the reduction of iron and copper deposits in the boiler.

Additionally, **MARZINE-PLUS** is applicable to all steam generating and water systems, when the neutralizing of dissolved carbon dioxide is required.

CHARACTERISTICS, ADVANTAGES & APPLICATIONS

- ◆ Protects against Oxygen corrosion and can be used at low temperatures.
- ◆ Contains a catalyst that increases the reaction rate with Oxygen.
- ◆ Very efficient and rapid Oxygen scavenger.
- ◆ Can be used in combination with a number of other treatment products.
- ◆ Safe to use on any steam generators and steam boilers experiencing dissolved Oxygen saturation.
- ◆ Its use does not increase the number of total dissolved solids.
- ◆ Cost effective, easy to handle and apply..

PHYSICAL PROPERTIES

MARZINE-PLUS is an all-volatile, liquid, catalyzed Oxygen scavenger for use in low, medium and high pressure boilers.

Appearance/Color	: Clear, colorless to light yellow liquid
Odor	: Odorless
Specific gravity	: 1.01–1.02 gr/cm ³ at 20°C
pH value	: 11.5–13.0

PACKAGING

Order Number	: 673013 (30 ltrs)
Container	: Plastic jerrican

APPLICATION AND USE

A. Dosing Procedure

Initially, a volume of 150ml of **MARZINE-PLUS** per ton of water must be used, depending on operating pressure and on the system's layout. Thereafter, everyday testing of hydrazine in the boiler water, with the use of **MARICHEM HYDRAZINE TEST KIT**, will determine the daily dosage to maintain the concentration within the desired levels. A normal dosage is approximately 30ml per day per ton of water.

In case the system has not been properly passivated, then the initial dosage of **MARZINE-PLUS** may be higher in the first weeks, until system's stabilization is achieved.

B. Cleaning Procedure

To achieve optimal results, it is important to adjust the treated water and maintain boiler conditions by testing water samples on a daily basis or at the very least, every two days with the **MARICHEM HYDRAZINE TEST KIT**, depending on the adjustment period to maintain stable hydrazine concentrations in the boiler's water.

The water samples must always be taken from the same origin found in the middle of the boiler after blow down has occurred. Keep in mind that before testing, the water samples must be left to cool at room temperature, and then immediately the test must be performed. Thereafter, the results may be evaluated according to the **MARZINE-PLUS TESTING CHART** found below.

C. Feeding Procedure

MARZINE-PLUS must be fed into the boiler's feed pump suction line, after the feed pump recirculating valve, or into the hot well tank, continuously, by means of a metering pump. Other conventional ways may also be used. However, direct feeding to the boiler is strongly not recommended.



MARZINE-PLUS TESTING CHART

Pressure Range	Hydrazine test result in ppm					ppm of Hydrazine
	0–0.05	0.05–0.10	0.10–0.15	0.15–0.20	> 0.20	
0–40 bar	Increase dosage by 25%	Increase dosage by 25%	Satisfactory	Satisfactory	Decrease dosage by 25%	0.10–0.20
41–60 bar	Increase dosage by 25%	Increase dosage by 25%	Satisfactory	Decrease dosage by 25%	Decrease dosage by 25%	0.10–0.15
> 60 bar	Increase dosage by 25%	Satisfactory	Decrease dosage by 25%	Decrease dosage by 25%	Decrease dosage by 25%	0.05–0.10

! SAFETY AND HANDLING

HANDLING	Handle with care. Store in a dry, cool and well ventilated environment.
SAFETY	IMMEDIATE ACTIONS
Eye Contact	Avoid Eye contact. Otherwise, flush with plenty of water for a few minutes. Seek medical attention.
Skin Contact	Avoid Skin contact. Otherwise, wash contaminated area thoroughly with water. Seek medical attention.
Inhalation	Avoid inhalation of vapors. Otherwise, seek fresh air source at once.
If Swallowed	Avoid ingestion. Otherwise, consume a considerable quantity of water. Do not induce vomiting. Seek medical attention.
GENERAL INSTRUCTIONS	Avoid spillage, splashing and mishandling. Wear suitable protective clothing, gloves and eye/face protection before using the product.

 Read the Material Safety Data Sheet before using this product.

For detailed information on safety and health, please refer to Material Safety Data Sheet and/or Product Label.

MARICHEM MARIGASES Worldwide Services or any subsidiary or associated companies warranties of merchantability and competence, if any, along with any expressed warranties concerning this merchandise, shall not be actionable or pertinent or effective if the good is used contrarily or differently to the directions herein and in no other way due to impending hazards from inappropriate use of the good explained herein. Merchandise might vary insubstantially depending on country of origin. The information provided concerning merchandise is exclusively presented to the customer.