



## MACJAMES®MPHAD-16 - PH ADJUSTER

### PRODUCT TECHNICAL DATA SHEET

#### FEATURES

- *High purity*
- *Increases pH of water*
- *Stable solution*
- *Prevents corrosion by pH adjustment*
- *Does not cause any water hardness*
- *Use in drinking water treatment*
- *Use in industrial/process/*

#### 1.0 PRODUCT DESCRIPTION

**MACJAMES®MPHAD-16 - pH Adjuster (pH plus/Builder) (DPR Approval No.:**

**DPR/HSE.04/003.700/2019/008)** is a blend of alkaline Carbonate and Hydroxide of Sodium in de-ionized water solution. **MACJAMES® MPHAD-16** is used to increase the pH of water in water treatment. It is applied to increase the pH of water to the desired acidic or alkaline pH value by using a dosing or injection pump in Water Treatment Plants (WTP). It is formulated to adjust the pH of drinking water, industrial/process water, swimming pool, etc. to meet the World Health Organization (WHO) and other standard limits for the pH values for water quality for drinking and other uses. It also prevents corrosion of pipes, pumps and water circulating equipment caused by aggressive water pH values in cooling/circulating water systems like boilers, heat exchangers, etc. in industries and others. It is administered based on the acidity or alkalinity of tested water sample to achieve the desired pH values. It is made from refined ingredients with high purity into a stable solution under stated storage conditions, making it suitable for drinking and potable water pH adjustment without having the challenges of increase or decrease in pH values of stored treated water associated with most pH adjusters.

**PACKAGING SIZES:** 20 Litres; 25 Litres; 200 litres in HDPE plastic container (other on request).

#### 2.0 APPLICATION INFORMATION

##### Methods of Application

The stage processes of treating raw water by using methods like disinfection, coagulation, etc. most often leave the water being acidic (having low pH). Therefore, there is a need to dose or inject **MACJAMES®MPHAD-16 - pH Adjuster (pH plus)**, an alkaline pH adjuster to raise the pH of the water to a the desired pH (pH 6.5 – 8.5 for drinking water by WHO standard or pH 7 and so on for industrial water use to prevent corrosion, erosion and equipment damage by the acidic water.

**MACJAMES®MPHAD-16** is applied by using dosing or injection pumps, manual adjustable pumps or automatic pumps with pH sensor to regulate the pH adjuster dosage according to set and required pH values, depending on the use of the treated water. A normal drinking and industrial Water Treatment Plant (WTP) is installed with dosing or injection pumps for the application of the pH adjuster and should be administered according to the water pH treatment requirement for the desired water output (treated water).

#### 2.1 DILUTION RATIOS AND APPLICATION METHODS

The ratios in the table below are typical approximations only. Actual requirements may vary due to water quality as a result of sources, pre-treatment chemicals and processes. Therefore, the approximations should be a guide and subject to adjustable operational conditions.

Description of Product	Recommended treatment rates	Method of application	Notes
MACJAMES®MPHAD-16 - pH Adjuster (pH plus/Builder), an alkaline pH adjuster	15 litres/hour dosing/injection to 1500 litres of water of pH4 (as a standard)	Dosing or injection pumps	Setting the dosage of the dosing/injection pumps is guided by laboratory titration of the pH adjuster to the water to get the desired pH value.

## 2.2 DETERMINATION OF DOSING OR INJECTION PUMPS DOSAGE FOR WATER TREATMENT

Setting the dosage of the dosing/injection pumps is guided by laboratory titration of the pH adjuster to the water to get the desired pH value. The pH adjuster volume to water volume is used to estimate the dosing/injection rates of the pumps. Further adjustments of the dosing/injection pumps can be made in the WTP by testing treated water pH and adjustment done accordingly.

### 2.2.1 SIMPLE STEPS ON HOW TO USE.

- (1). The use is by dosing or injection using a dosing or injection pumps.
- (2). The quantity requirement varies from the acidic pH of the water sample.
- (3). The dosing or injecting pumps outputs are adjusted till the desired pH of treated water is reached. That becomes the dosing or injecting setting of the pumps for the water.

## 3.0 PRECAUTIONS

- KEEP ALL CHEMICALS AWAY FROM CHILDREN AND PETS
- Use chemical resistant hand gloves, eye goggles and apron during application, product can cause injury. All chemicals are handled with approved PPE.
- If in contact with skin, wash with plenty water and seek medical attention if there is irritation.
- Do not drink, if ingested drink water and seek medical attention.
- Avoid contact with eyes, otherwise flush with plenty water for 20 minutes and get medical attention. Remember to wear eye goggle with side protector.
- Dilute properly with water before disposal according to local regulations (dilute possibly to neutral or infinity)

## 4.0 HAZARDOUS MATERIALS IDENTIFICATION SYSTEM (HMIS) RATING.

<b>HEALTH</b>	<b>1</b>	<b>0 - Minimal</b>
<b>FLAMMABILITY</b>	<b>0</b>	<b>1 - Slight</b>
<b>REACTIVITY</b>	<b>0</b>	<b>2 - Moderate</b>
<b>PERSONAL PROTECTION</b>	<b>B</b>	<b>3 - High</b>
		<b>4 - Very High</b>

**NB:** The Material Safety Data Sheet (MSDS) **MACJAMES® MPHAD-16 – pH Adjuster** is readily available for more information or contact us at [info@macjamesglobal.com](mailto:info@macjamesglobal.com).

## 5.0 PHYSICAL PROPERTIES

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Appearance:	Clear to slightly turbid	State	Liquid
pH	11.0 – 12.0	Odour	Odourless to caustic
Specific Gravity @ 25°C	1.30	Viscosity	3.58 Centipoise
Boiling Point	≥140°C	Water solubility	Complete.
Flash Point	None anticipated (water based)	Autoignition	Not applicable - does not burn

## 6.0 TYPICAL PHOTOS OF MACJAMES® MPHAD-16 – pH ADJUSTER



**NON-WARRANTY** – All data, statements and recommendations contained herein are based upon the best information available and are believed to be reliable. However, no warranty, either expressed or implied, is made concerning the application of this product since the customer’s use cannot be controlled directly by Macjames.

# MINISTRY OF PETROLEUM RESOURCES

## DEPARTMENT OF PETROLEUM RESOURCES

7, KOFO ABAYOMI STREET, VICTORIA ISLAND, LAGOS

P.M.B. No: 12650

Telephone: 01-2790000

Website: [www.dpr.gov.ng](http://www.dpr.gov.ng)



Ref.No: DPR/HSE.04/003.700/2019/008

Date: 5<sup>th</sup> December 2019

### The Managing Director

Macjames Global Resources Limited  
37 Trans Amadi Industrial Layout  
Rumuobiakani, Port Harcourt.

Dear Sir,

### APPROVAL FOR USE OF MACJAMES® MPHAD-16 pH ADJUSTER IN THE NIGERIAN OIL AND GAS INDUSTRY.

We acknowledge receipt of your application dated 20<sup>th</sup> November 2019 in respect of the above subject.

2. Following the satisfactory review of the product technical data, as well as the Safety Data Sheet submitted, we wish to convey our approval of **MACJAMES® MPHAD-16** for use in the Nigerian Oil and Gas Industry.

3. This approval is issued under the following conditions:

- I. The use of **MACJAMES® MPHAD-16** shall be governed by the provisions of section 25 of the Petroleum (Drilling and Production) Regulations, 1969 as well as the Environmental Guidelines and Standards for the Petroleum Industry in Nigeria (EGASPIN 2018), which were both issued pursuant to section 9(1)(b)(iii) of the Petroleum Act, 1969.
- II. Any changes made to the composition of this product or reformulation of same either wholly or partially without the consent of the DPR, automatically renders this approval invalid. You are therefore advised to notify the DPR of such changes or reformulation for the purpose of re-certification of the product, prior to further usage.
- III. User (s) of the product shall seek the approval of the Department for its use under specified terms and conditions and shall remain fully responsible for any damage(s) to the local environment on account of the use of the product.

4. Finally, you are please reminded to always ensure that under no condition shall this product be sold outside the validity of its approval.

Yours faithfully,

A handwritten signature in blue ink, appearing to read 'Abdurrahman, A.S.'.

**Abdurrahman, A.S**

For: Director, Department of Petroleum Resources