

# UASB

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// : // :

UASB

( )

( )

UASB

mg/l COD / / kgCOD/m<sup>3</sup>.d mg/l  
kgCOD/m<sup>3</sup>.d mg/l COD  
% UASB mg/l COD / kgCOD/m<sup>3</sup>.d  
HRT mg/l COD / kgCOD/m<sup>3</sup>.d  
% / COD / /

-COD UASB

(Andreottola, et al., 1992)

Garcia et )

(al., 1996

(UASB+RBC)<sup>2</sup>  
 mg/l COD .  
 ) . %  
 .( .( )

UASB Garcia  
 °C

COD .  
 % %  
 / (HRT)<sup>3</sup> Kg COD/m<sup>3</sup>.d %  
 °C %  
 / HRT Kg COD/m<sup>3</sup>.d  
 .(Garcia, et al., 1996)

Kennedy  
 UASB (DSFF)<sup>4</sup>  
 % COD UASB .( )  
 HRT / / kg COD / m<sup>3</sup>.d ( OLR)<sup>5</sup>

COD Chang  
 UASB mg/l  
 OLR % / / COD  
 COD / OLR kgCOD/m<sup>3</sup>.d  
 . % / kg m<sup>3</sup>.d  
 UASB Castrillon Berrueta  
 COD  
 / kgCOD/m<sup>3</sup>.d /

(UASB)  
 UASB

UASB UASB

# UASB

Garcia, et )

Clostridium  
)

(al., 1996

(  
CO<sub>2</sub> H<sub>2</sub> (  
(... PH )  
(Bitton, 1999)

,COD  
COD / %  
(Torabian, et al., 2004) % COD

(H<sub>2</sub> )  
Syntrophomonas Wolfei Syntrobacter Wolinii

Shen Wang

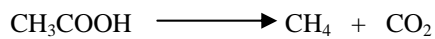
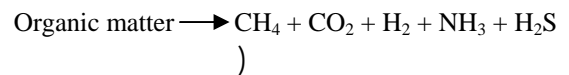
COD

(Bitton, 1999)

/ (ABR)  
COD



CO<sub>2</sub>



Lactobactillus Elostrisum Bifidobacterium  
Bochterodes Streptococcus

(Bitton, 1999)

(Bitton, 1999)

pH

( )

(Bitton, 1999)

)COD  
COD

(BOD

UASB

pH

COD

COD

COD

COD

pH

COD

COD pH

- 
- 
- 

UASB

UASB

PVC

( )

( )

pH

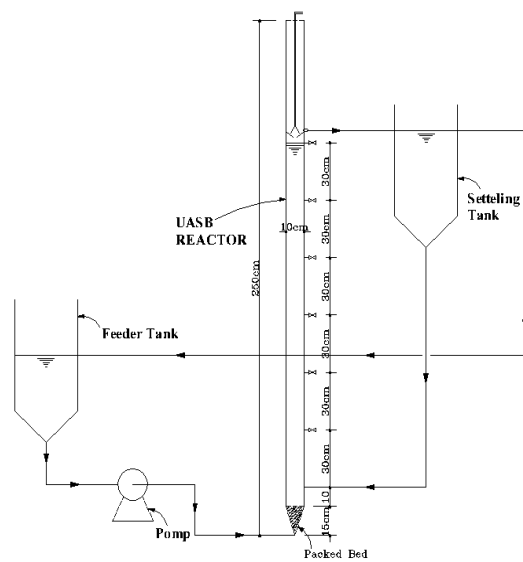
pH

/

:( )

UASB

( )



## UASB

:( )

(mg/L)	(mg/L)	
۸۰۰۰۰	۹۰۰۰۰ تا ۷۰۰۰۰	COD
۳۱۰۰۰	۳۸۰۰۰ تا ۲۴۰۰۰	BOD
۳۸۵۰	۶۷۰۰ تا ۱۰۰۰	TSS
۲۵۵	۳۰۰ تا ۲۱۰	نیترات (بر حسب N)
۲۳۵	۲۷۰ تا ۲۰۰	نیتروژن آمونیاکی (بر حسب N)
۸۰	۹۰ تا ۷۰	فسفات
۱۸۰۰	۲۰۰۰ تا ۱۶۰۰	سولفات
۴۱۰۰	۴۴۰۰ تا ۳۸۰۰	کلراید

F/M .

F/M

UASB

F/M

+

F/M .

( )

/ /

COD

pH

/

pH

UASB

( )

/ kgCOD/m<sup>3</sup>.d

OLR

°C

Feeder

COD

UASB

COD

/ /

COD

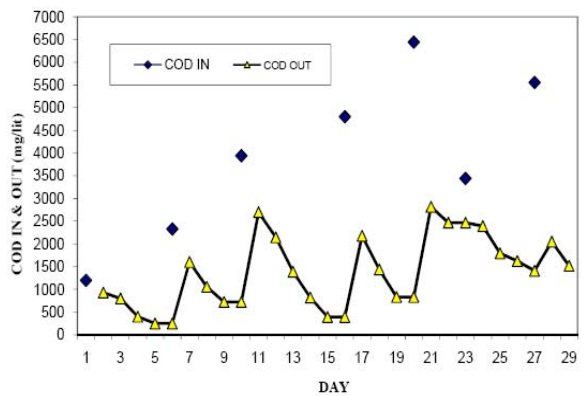
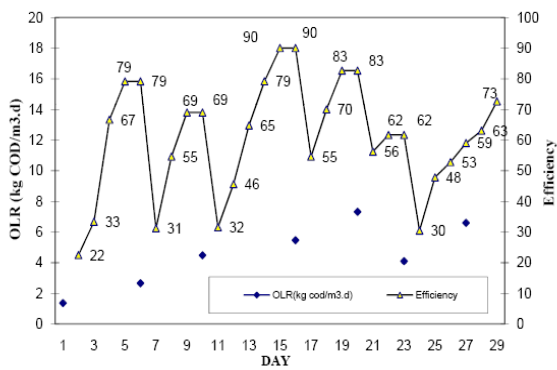
$\frac{\text{COD}}{\text{OLR}}$  /  $\frac{\text{gCOD/m}^3\cdot\text{d}}{\text{mg/l}}$       COD      OLR  
 COD %      mg/l      COD      OLR  
    mg/l      Feeder      OLR  
    mg/l      COD /  $\text{KgCOD/m}^3\cdot\text{d}$       COD  
 OLR %  
    mg/l      COD /  
 COD %      COD  
    COD  
    pH .  
    /      /      pH      /  
    pH .

UASB

(vss)<sup>9</sup>

OLR .  
 /  $\text{KgCOD/m}^3\cdot\text{d}$

( )      COD  
 COD      COD  
 COD



COD      OLR      : ( )

COD      : ( )

/  $\text{Kg COD/m}^3\cdot\text{d}$       OLR  
 COD

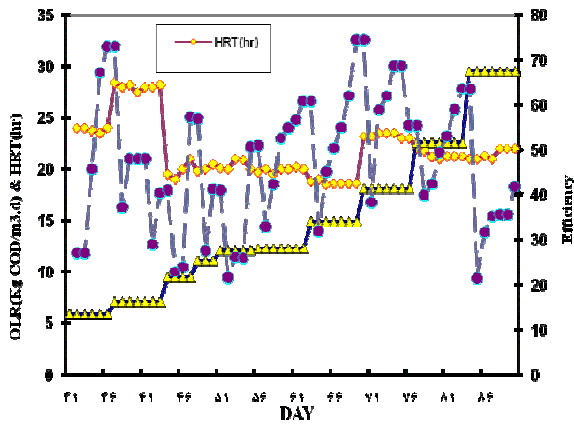
mg/l

( )

OLR      COD

COD

# UASB



COD HRT OLR : ( )

m/hr UASB  
 COD OLR hr HRT / /  
 Kg mg/l / KgCOD/m<sup>3</sup>.d  
 mg/l / COD/m<sup>3</sup>.d  
 mg/l COD / KgCOD/m<sup>3</sup>.d  
 % /  
 OLR mg/l COD  
 % / KgCOD/m<sup>3</sup>.d

این  
 زمان شیرابه جدید با قدیم مخلوط می شود تا سیستم دچار شوک  
 شدید نشود.  
 OLR

% COD

HRT  
 ( )

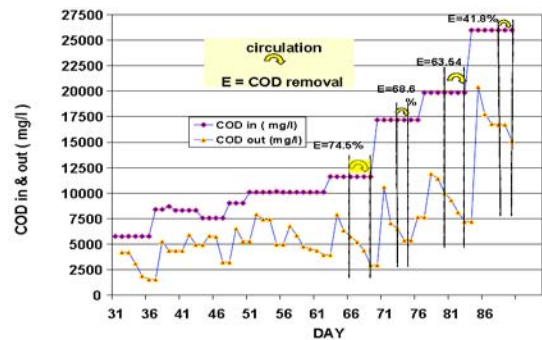
COD  
 / KgCOD/m<sup>3</sup>.d OLR  
 % / COD mg/l COD  
 / HRT

KgCOD/m<sup>3</sup>.d (OLR)  
 mg/l COD /  
 % HRT  
 %  
 / KgCOD/m<sup>3</sup>.d OLR mg/l

UASB

mg/l COD

OLR / / hr  
 % / COD / KgCOD/m<sup>3</sup>.d



COD : ( )

OLR mg/l COD  
 % / KgCOD/m<sup>3</sup>.d

- 1- Up flow Anaerobic Sludge Blanket
- 2- Rotary Biological Contactor

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7-Batch

8-Continuous

9- Volatile Suspended Solid

3- Hydraulic Retention Time

4- Down flow Stationary Fixed Film

5- Organic Loading Rate

6- Anaerobic Baffled Reactor

## UASB

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