

KGB-006			
2019	7	8	
2019	7	8	

1.

가. :

P C 306 (Perfect Cleane 306) (Toluene + Acetone)

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, , , , , UV ,

,

. / /

가 37 17(가)

032 - 584 - 1989

2.

가. : : 2

/ :

2 : 2

-

: 3() -: 2 : 1

· -

:



:

H225

H304



P405

H315

(MSDS)

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H336 H361 P201 P202 P210 P233 P240 P241 P242 가 P243 P260(· ·가 P261(· ·가 P264 가 P271 P280() () P281 P301+P310 P302+P352 P303+P361+P353 P304+P340 가 P308+P313 P312 P314 P321 P331 P332+P313 P362 P370+P378 가 P403+P233 P403+P235 가

13 - 2



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NFPA: - 2, - 3, - 0

P501 ()

3.

/	CAS	(%)
/ Toluene / Benzene, methyl-	108-88-3	70~80
/ Acetone	67 - 64 - 1	20~30

4.

가 15 .

•

.

(20)

가 .

(mouth-to-mouth) , (:pocket

mask) .

가 가 72 .

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. (charcoal

slurry) , (saline cathartic,) (sorbitol, 35%)

(: 50~100g, :

1.0~1.5g/kg, 50g)



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5. ・

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フト , , (fog),

, (rail car),

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가 가 (vapor suppressing foam)

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가 .

가 .

(flash back)



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6

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50~100
                           가
)
             (upwind)
       가
                                               рΗ
      가
                     (gelling agent)
         (solidify)
                                    가 10ppm
             10
                            [
                                            ].
                                            (sodium
    bicarbonate)
                (soda ash)/ (slaked lime)
                                             (蛭石,
                                        가
    vermiculite),
                  (乾土),
                            (乾砂)
              , (foamed polyurethane),
           (foamed concrete)
                               (cement powder)
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(positive pressure self-contained breathing apparatus)

(positive pressure self-contained breathing self-contained breat



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		ACGHI	
Toluene	TWA 50ppm STEL 150ppm	TWA 20ppm	2.5g/g crea
Acetone	TWA 500ppm STEL 750ppm	TWA 500ppm STEL 750ppm	50mg/L (Acetone,

,

```
: /
7h 500ppm
7h 1250ppm
(loose-fitting) /
7h 2500ppm
/
7h 50000ppm
/
7h 500000ppm
/
7h (SCBA) 7h (SCBA)
-
7h (SCBA)
```



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9.

```
,
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```
2.14ppm ,24-1615 mg/m3
рΗ
                            - 95
                            56.1 ~ 111
                            -17 ~ 4
     ( , )
                            13/2.2
                            24 KPa at 20
                            28.4 mmHg at 25 (TOXNET)
                            2~ 3.1 ( =1)
                            0.8660 (20/4)
                            -0.24~2.73
n-
                            465 ~ 480
                            0.303 cP ~ 0.56cP at (25 2hours)
                            58.08 ~ 92.14
```

10.

가 :

가 가 : , , / , ,

(flash back)

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: ,가 , , .

가 가

11. 가 (步行失 : -: Toluene : (LD50>5580 mg/kg) Acetone (LD50=5280mg/kg),rat (LD50>5500 mg/kg) Acetone(LD50=12870mg/kg)rabbit : Toluene : (가): Steam LC50 = 76 mg/L/4hr Rat - 500mg/kg(LD₅₀, guinea pig)): : 2 / Acetone: Toluene: [Standard Draize test] : rabbit / 2 Acetone: 4~6 [Standard Draize test] : rabbit

/Guniea pig

:



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```
(in vivo)
                                  (
                    (in vivo)
                                  (
                    (in vivo)
                                 (SCE
                                                     )
                  (in vivo)
                  (in vivo)
                    (in vitro)
                                          , S. typhimurium)
                                (Ames
                    (in vitro)
                                (Ames
                                          , E. coli)
                                         , V79 )
                    (in vitro)
                    (in vitro)
                                           , CHO
                    (in vitro)
                                         , CHO
                    (in vitro)
                                (SCE
                    (in vitro)
                                (SCE
                                         , )
                    (in vitro)
                                (mouse lymphoma )
                     IARC
   Group 3
                 2
                      (11000ppm (20mg/L))
Acetone:
                             (6600ppm(15.6mg/L))
          가 (EHC, 207(1998))
Toluene:
                                 3( ) 6.08 mg/L
Rats 3
           - 1
                   : Toluene :
                     Acetone:
                    :Toluene:600ppm
             : Toluene : 1 /
          human
               Acetone: 0.426mm2/s ( )
```



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12.

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(LC50): Goldfish, 57.68ppm/96hr(
    (LC50): Carassius auratus, 13mg/L/96hr
    (LC50): Lepomis macrochirus, 13mg/L/96hr
    (LC50): Oncorhynchus mykiss, 5.8mg/L/96hr
    (LC50): Oncorhynchus kisutch, 5.5mg/L/96hr
    (LC50): Pimephales promelas, 18mg/L/96hr
    (LC50): Oryzias latipes, 25mg/L/96hr
    (LC50) : Cyprinodon variegatus: 13mg/L/96hr
    (LC50) : Poecilia reticulata: 59.3mg/L/96hr
      (LC50) : Daphnia magna, 313ppm/48hr(
    (ErC50) : Selenastrum capricornutum, 29mg/L/72hr
                              . Koc >= 34
BOD: 80% (20
       3 24
                 (OH
 BCF=13, 90(
                 )
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13			
	(rotary kili 가	n 820~1,600 , fluiduzed	bed 450~980) . 가 가
	()	
4			
	: 1294 / 1	090	
		: 3	
	: 2		
	:		
	가	가 : F-E : S-D	
5.			
		:	(: 6)
			(: 12)
		: , Toluene 85% : 4 1 : ()	%



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HSDB(Hazardous Substances Data Bank) : http://toxnet.nlm.nih.gov

The Chemical Database: http://ull.chemistry.uakron.edu/erd/

ICSC(International Chemical Safety Cards):

http://www.cdc.gov/niosh/ipcsneng/neng0000.html

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(NCIS): http://ncis.nier.go.kr/ncis/
```

2011-13 . (2011. 3. 2)

:2019.07.08

0-00:2000.01.03

```
0-01:2006.09.0
0-02:2008.01.04
                                                             )
0-03:2008.02.25
                                2006-36
                                                                       )
0-04:2010.05.20
2.
                                          가
9.
11.
12.
14.
0-05: 2013.06.05
                                    , 5.
                     (4.
0-06:2013.09.25
0-07:2014.01.02
                      (
0-08:2014.08.21
                      (9.
                                                             )
0-09:2014.10.27
                      (9.
0-10:2018.07.08
                      (3.
```