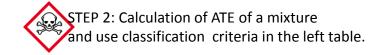
## **Acute Toxicity Classification of A Mixture under GHS**



STEP 1: Derive Acute Toxicity Estimates (ATE) of individual ingredients



Exposure routes	Classification category or			Converted acute toxicity
	experimentally obtained acute			point estimate
	toxicity	range estimate (see	Note 1)	(see Note 2)
Oral	0	< Category 1 ≤ 5		0.5
(mg/kg bodyweight)	5	< Category 2 ≤ 50	0	5
	50	< Category 3 ≤ 30	00	100
	300	< Category 4 ≤ 20	000	500
	2000	< Category 5 ≤ 50	000	2500
Dermal	0	< Category 1 ≤ 50	0	5
(mg/kg bodyweight)	50	< Category 2 ≤ 20	00	50
	200	< Category 3 ≤ 10	000	300
	1000	< Category 4 ≤ 20	000	1100
	2000	< Category 5 ≤ 50	000	2500
Gases	0	< Category 1 ≤ 10	00	10
(ppmV)	100	< Category 2 ≤ 50	00	100
	500	< Category 3 ≤ 25	500	700
	2500	< Category 4 ≤ 20	0000	4500
	Category 5 - See footnote to 3.1.2.5.			
Vapours	0	< Category 1 ≤ 0.	.5	0.05
(mg/l)	0.5	< Category 2 ≤ 2.	.0	0.5
	2.0	< Category 3 ≤ 10	0.0	3
	10.0	< Category 4 ≤ 20	0.0	11
	Category 5 - See footnote to 3.1.2.5.			
Dust/mist	0	< Category 1 ≤ 0.	.05	0.005
(mg/l)	0.05	$<$ Category $2 \le 0$ .	.5	0.05
	0.5	< Category 3 ≤ 1.	.0	0.5
	1.0	< Category 4 ≤ 5.	.0	1.5
	Category	5 - See footnote to 3	3.1.2.5.	

Ingredient(s) with unknown
toxicity is <= 10 %;</pre>

$$\frac{100}{\text{ATEmix}} = \sum_{n} \frac{C_{i}}{\text{ATE}_{i}}$$

Ingredient(s) with unknown toxicity is >10 %;

$$\frac{100 - \left(\sum C_{\text{unknown}} \text{ if } > 10\%\right)}{\text{ATE}_{\text{mix}}} = \sum_{n} \frac{C_{i}}{\text{ATE}_{i}}$$

C<sub>i</sub> = concentration of ingredient i;
n ingredients and i is running from 1 to n;

ATE<sub>i</sub> = Acute toxicity estimate of ingredient i;