

Dr Hal @ ASE 2013

Luminol demonstration/ fluorescence

Risk Assessment

Please note that this risk assessment was written to cover the demonstration of this experiment at the ASE Conference in January 2013. For any other use, this risk assessment should be reviewed to see whether there is a need to modify or adapt it in any way to suit the particular conditions under which the experiment will be carried out.

UNIVERSITY OF BRIGHTON
SCHOOL OF PHARMACY & BIOMOLECULAR SCIENCES
RISK ASSESSMENT

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 Sosabowski/D.Campbell

Section: Outreach

Location: Reading
 University

Ass. No: BB.011

Date Of Assessment

30th October 2012

Review Date		Review period	
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CATEGORY/ACTIVITY

RISK CATEGORY <u>Low</u>	DESCRIPTION OF ACTIVITY TO BE ASSESSED	References Sigma
	Luminol demonstation/fluorescence	

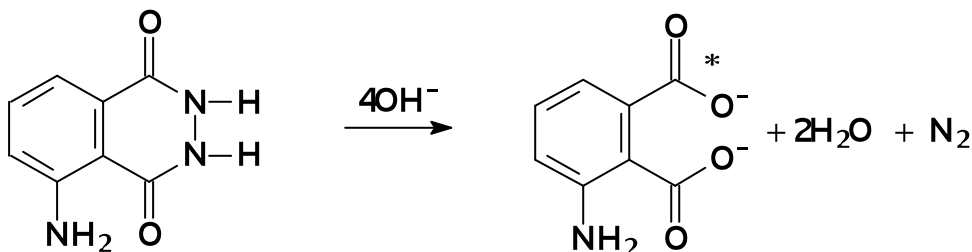
HAZARDS

List hazards here. List only hazards which could reasonably be expected to result in significant harm under the conditions in your workplace

Experiment: Chemiluminesence with Luminol

Required: Dark room; helical glass coil for best effect. Solutions: A - 0.1 gram Luminol plus 5 ml of 5% sodium hydroxide made up to 1 litre with water. B - 0.25 gram potassium ferricyanide plus 10 ml of 3% hydrogen peroxide, made up to 1 litre with water. Store in brown bottles. Mix solutions A and B; the mixture glows blue. Addition of a few crystals of ferricyanide to the mixture enhances the effect.

Discussion: luminol is oxidised to the aminophthalate ion which is produced in an excited state and emits light on dropping to the ground state:



Risks:

1. Sodium hydroxide is an irritant and can cause eye damage if concentrated;
2. Hydrogen peroxide can cause burns if concentrated and eye damage;
3. Risk of apparatus toppling over, leading to glass breakage;
4. Risk of operator pouring onto self/up sleeves/into eyes since the action requires simultaneously pouring two solutions in unequal measures.

WHO MAY BE HARMED

List here groups of people who are especially at risk from the hazards that you have identified. Do not list individuals by name but think of groups of people doing similar work

1.Principal operatives conducting experment

IS THE RISK ADEQUATELY CONTROLLED

List existing precautions & controls here or note where information can be found

1. Solution used is dilute. Operator to be instructed to rigorously comply with eye protection protocol with approved eye defenders.
2. Hydrogen peroxide amount used is marginal and very dilute. See (1) concerning eye protection. Operator to wear nitrile disposable gloves.
3. Apparatus mounted on retort stand on cork ring. Operator appraised of this particular risk. Operator to stand on step (if necessary) to avoid over-reaching.
4. Dr M H Sosabowski will be present throughout.

WHAT FURTHER ACTION IS NECESSARY

List all risks that are not adequately controlled and the action that you will take, where it is practicable, to do more

None

Have all necessary precautions and procedures been included in the assessment?

~~Yes~~

RESULT - T=Trivial Risk /A=Adequately controlled

Signed Date
(Assessor)

Signed Date
(HoS)

Reviews: Signed (reviewer) Date
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Signed (reviewer) Date
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