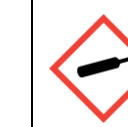
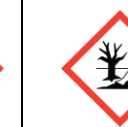


COSHH ASSESSMENT

Product Name(s):	Lyophilized <i>Crotalus Atrox</i> Venom Triethylamine Diethyl ester Chloroform Methanol Acetic Acid Nitrogen		COSHH Assess. No.:	EXAMPLE
Description of Substance:	All chemicals are liquids, except Nitrogen, which is a gas		CAS# or Formulation	Check SDS
Workplace Exposure Limits:	STEL: Check SDS – all used in fume cupboard so no exposure likely	LTEL: Check SDS – all used in fume cupboard so no exposure likely	Location	B0x Laboratory 122
Suppliers Name & Address:	Merck Life Science UK Limited The Old Brickyard New Rd Gillingham Dorset SP8 4XT		Telephone Number:	(0)8 00 71 71 81
Task/Activity: <i>For what reason and how is the substance being used?</i>	Performing phosphatidylcholine digestion using 1mg of lyophilized <i>Crotalus Atrox</i> venom will be dissolved in 2ml of Triethylamine 0.05M pH7.4. The solution will be mixed with the sample (lipid suspended in 0.7ml of diethyl ether) and shaken at 32c for 1 to 4 hours. Diethyl ether will be then evaporated with Nitrogen. Lipids will be extracted with 3.8ml of Chloroform/Methanol (2/1 v/v) and 1ml of acetic acid 0.15M. After extraction the discard fraction will be retained for disposal by the safety office.		SDS Attached:	Links Appended.

SUBSTANCE PROPERTIES									
									
Flammable	Oxidising	Explosive	Health hazard/ Hazardous to the ozone layer	Gas under pressure	Hazardous to the environment	Corrosive	Serious health hazard	Acute toxicity	Biohazard (also, complete Bio-Risk Assessment Form)
X			X	X	X	X	X	X	

Hazard Statements (H)	Precautionary Statements (P)
Crotalus Atrox Venom: H300 Fatal if swallowed H310 Fatal in contact with skin H330 Fatal or if inhaled Triethylamine: H225 Highly flammable liquid and vapour. H302 Harmful if swallowed. H311 + H331 Toxic in contact with skin or if inhaled. H314 Causes severe skin burns and eye damage. H335 May cause respiratory irritation. Diethyl-ether: H224 Extremely flammable liquid and vapour. H302 Harmful if swallowed. H336 May cause drowsiness or dizziness. Chloroform:	Crotalus Atrox Venom: P260 Do not breathe dust/ fume/ gas/ mist/ vapours/ spray. P264 Wash hands thoroughly after handling. P280 Wear protective gloves/ protective clothing. P284 Wear respiratory protection. P301 + P310 IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician. Triethylamine: P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. P261 Avoid breathing vapours. P280 Wear protective gloves/ protective clothing/ eye protection/ face protection. Diethyl-ether: P240 - Ground and bond container and receiving equipment P243 - Take action to prevent static discharges

Hazard Statements (H)	Precautionary Statements (P)
H302 Harmful if swallowed. H315 Causes skin irritation. H319 Causes serious eye irritation. H331 Toxic if inhaled. H336 May cause drowsiness or dizziness. H351 Suspected of causing cancer. H361d Suspected of damaging the unborn child. H372 Causes damage to organs through prolonged or repeated exposure. Chloroform: H302 Harmful if swallowed. H315 Causes skin irritation. H319 Causes serious eye irritation. H331 Toxic if inhaled. H336 May cause drowsiness or dizziness. H351 Suspected of causing cancer. H361d Suspected of damaging the unborn child. H372 Causes damage to organs through prolonged or repeated exposure. Methanol: H225 Highly flammable liquid and vapour. H301 Toxic if swallowed. H311 Toxic in contact with skin. H331 Toxic if inhaled. H370 Causes damage to organs. Acetic Acid: H226 Flammable liquid and vapour.	P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking P233 - Keep container tightly closed P261 - Avoid breathing dust/fume/gas/mist/vapors/spray P301 + P312 - IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell P403 + P235 - Store in a well-ventilated place. Keep cool Chloroform: P302 + P350 IF ON SKIN: Gently wash with plenty of soap and water. P261 Avoid breathing vapours. P281 Use personal protective equipment as required. P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. P311 Call a POISON CENTER or doctor/ physician. Methanol: P210 Keep away from heat/sparks/open flames/hot surfaces. - No smoking. P260 Do not breathe dust/ fume/ gas/ mist/ vapours/ spray. P280 Wear protective gloves/ protective clothing. P301 + P310 IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician. P311 Call a POISON CENTER or doctor/ physician. Acetic Acid P280 Wear protective gloves/ protective clothing/ eye protection/ face protection. P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. P310 Immediately call a POISON CENTER or doctor/ physician. Acetic Acid: P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

Hazard Statements (H)	Precautionary Statements (P)
H314 Causes severe skin burns and eye damage. Nitrogen Gas: H280 Contains gas under pressure; may explode if heated. EIGA-As: Asphyxiates in high concentrations.	P280 Wear protective gloves/ protective clothing/ eye protection/ face protection. P301 + P330 + P331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting. P303 + P361 + P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water. P305 + P351 + P338 + P310 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER/doctor. Nitrogen Gas: P403: Store in a well-ventilated place.
Additional Information (See SDS for additional information)	

ROUTE(S) OF EXPOSURE											
Skin	X	Eyes	X	Inhalation	X	Ingestion	X	Injection	X	Cuts/ Abrasions	X

PERSONS AT RISK											
Users of the product	2	Other Workers e.g. Maintenance staff, Contractors	6	Visitors	2	Members of Public	0	Young Persons	0	Expectant Mothers	0

INITIAL ASSESSMENT OF RISK						
Assessment of risk before identified control measures	High	X	Medium		Low	
Could a less hazardous substance be used to do the same job? (if unknown, investigate and confirm before intended use?)			Yes		No	X

CONTROL MEASURES
General Information/Precautions
<u>Control measures</u> Work to be done only by those trained in procedure. All work with will be done in a fume cupboard. Liquids should be used on spill trays within fume cupboard On receipt, Crotalus Atrox Venom powder will be diluted to avoid inhalation of powder. Any loss of material will be reported immediately to the H&S advisor. Nitrogen gas to be used only in laboratories with function local exhaust ventilation and gas (O2 depletion) monitoring
First Aid/Hygiene Arrangements
• If on skin, wash with plenty of water. If skin irritation or rash occurs, seek medical advice • If in eyes, rinse cautiously with water or eyewash. • May be specific instructions on SDS for some chemicals Health surveillance measures are required – report to safety office to arrange.
Fire Precautions
Flammable solvents used. Therefore fire blankets and CO2 extinguishers are at hand. The laboratories are linked to a site fire alarm system.

Spillage Procedures/Accidental release Measures

- Small spills can be soaked up using absorbent material.
- Large spills absorb into dry earth or sand and transfer to a sealable container for disposal as chemical waste.
- Spills of hazardous chemicals require evacuation of lab and calling the emergency number (2222)

PPE REQUIREMENTS

							Other:
Protective gloves/ gauntlets (chemical permeation classification)	Lab coat/ Overalls (style e.g. Howie- microbiological)	Face-fit tested FFP mask (FFP level)	Face-fit tested Full or Half-Mask (Filter type)	Eye protection	Visor	Safety Boots	Closed shoes only to be worn
X forearm protection with an AQL (acceptable quality level) of <0.065	X Howie-style			X	X Face-shield when handling venom		X

Handling & Storage Requirements
Storage

Crotalus Atrox venom will be kept in a separate locked container. Quantity of venom used will be recorded.

All other chemicals will be stored appropriately, either in a demarked flammables, acid/base or toxins cabinet.

Storage of other chemicals are in a force ventilated bunded cabinet.

Chemicals are recorded on receipt to the chemical database as below.

Monitoring Requirements
Stock control to chemical does not expire. Enter onto chemical database: http://burdock.rothamsted.ac.uk/chem-invent/index.php?file=index
Disposal Requirements
Do not discharge into drains or rivers.
Transport Arrangements
No transport of these chemicals is permitted outside the laboratory upon receipt.
Information, Training, Instruction or Supervision requirements
Staff undertaking the procedure must be trained and competent in: Chemical Safety (COSHH) Risk Assessment Manual Handling Training required for handling stock containers. iHASCO safety Basics Rothamsted Induction, inclusive of actions in the event of an emergency.
LEV Requirements (<i>fume cupboard, powder cabinet, downdraft bench, microbiological safety cabinet etc.</i>)
Fume Cupboard. Check Validation has been carried out within 14 months.
Additional Control Measures
High quality gloves with forearm protection will be used at all times when handling the venom.

ASSESSMENT OF RISK						
Assessment of risk after control measures	High		Medium	X	Low	
Is the handling of the substance suitable for Lone Workers?	Yes		No			X
Can the substance be stored/ transported in Confined spaces or those with limited air changes e.g. lifts, basement areas.	Yes		No			X

ADDITIONAL CONTROL MEASURES				
Note: following sections to be completed by user should additional control measures be required				
Are additional control measures required? <i>(If so state remedial actions to be taken below):</i>		Yes		No X
Action Required	Person Responsible	Date Completed	Signature	
FINAL ASSESSMENT OF RISK (After additional control measures)				
Assessment of risk after additional control measures	High		Medium	X Low
Assessor(s) Name:	Assessor(s) Signature:		Date:	
			10/12/2021	

COSHH ASSESSMENT REVIEW (HSBQ)			
Reviewed by (PRINT NAME):		Date of assessment:	
Signed:		Assessment review:	

Comments
This is only a preliminary assessment based on the manufacturer's safety data sheet/generic information for similar products. This assessment must be reviewed and amended by a competent person prior to its contents being used. This is to ensure that consideration is given to site specific circumstances or differences which may affect the original assessment. It is the employer's responsibility to ensure that a suitable and sufficient assessment of the risks is undertaken when using any material which may be hazardous to health. An up to date Safety Data Sheet (MSDS) should be obtained from the supplier and reviewed alongside this assessment to ensure that the control measures are suitable and remain valid.

Copy and Paste SDS HERE

Crotalus Atrox Venom MSDS:

<http://www.sigmaaldrich.com/MSDS/MSDS/DisplayMSDSPage.do?country=GB&language=en&productNumber=V7000&brand=SIGMA&PageToGoToURL=http%3A%2F%2Fwww.sigmaaldrich.com%2Fcatalog%2Fproduct%2Fsigma%2Fv7000%3Flang%3Den>

Triethylamine MSDS:

<http://www.sigmaaldrich.com/MSDS/MSDS/DisplayMSDSPage.do?country=GB&language=en&productNumber=471283&brand=SIAL&PageToGoToURL=http%3A%2F%2Fwww.sigmaaldrich.com%2Fcatalog%2Fproduct%2Fsial%2F471283%3Flang%3Den>

Diethyl ether MSDS:

<http://www.sigmaaldrich.com/MSDS/MSDS/DisplayMSDSPage.do?country=GB&language=en&productNumber=673811&brand=SIAL&PageToGoToURL=http%3A%2F%2Fwww.sigmaaldrich.com%2Fcatalog%2Fproduct%2Fsial%2F673811%3Flang%3Den>

Example COSHH assessment(state chemical)

Chloroform MSDS:

<http://www.sigmaaldrich.com/MSDS/MSDS/DisplayMSDSPage.do?country=GB&language=en&productNumber=288306&brand=SIAL&PageToGoToURL=http%3A%2F%2Fwww.sigmaaldrich.com%2Fcatalog%2Fproduct%2F%2Fsial%2F288306%3F%2Flang%3Den>

Methanol MSDS:

<http://www.sigmaaldrich.com/MSDS/MSDS/PleaseWaitMSDSPage.do?language=&country=GB&brand=SIAL&productNumber=322415&PageToGoToURL=http://www.sigmaaldrich.com/catalog/product/sial/322415?lang=en®ion=GB>

Acetic Acid MSDS:

<http://www.sigmaaldrich.com/MSDS/MSDS/PleaseWaitMSDSPage.do?language=&country=GB&brand=SIAL&productNumber=A6283&PageToGoToURL=http://www.sigmaaldrich.com/catalog/product/sial/a6283?lang=en®ion=GB>