

Apollo Scientific

Part Number: **OR303191** Version No: **2.2** Safety Data Sheet Chemwatch Hazard Alert Code: 2

Issue Date: **10/07/2023** Print Date: **10/07/2023** S.GHS.GB-NIR.EN

SECTION 1 Identification of the substance / mixture and of the company / undertaking

Product Identifier

Product name	Allylamine, N-FMOC protected
Chemical Name	9H-Fluoren-9-ylmethyl N-(piperidin-3-ylmethyl)-carbamate
Synonyms	Not Available
Other means of identification	Not Available
CAS number	856438-23-8*

Relevant identified uses of the substance or mixture and uses advised against

Relevant identified uses	Not Available
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Details of the manufacturer or supplier of the safety data sheet

Registered company name	Apollo Scientific	Apollo Scientific Itd
Address Whitefield Road, Bredbury SK62QR United Kingdom		Whitefield Road, Bredbury Cheshire SK6 2QR United Kingdom (NI)
Telephone	01614060505	+44(0) 161 406 0505
Fax	0161 406 0506	Not Available
Website	http://www.apolloscientific.co.uk/	apolloscientific.co.uk
Email sales@apolloscientific.co.uk		sales@apolloscientific.co.uk

Emergency telephone number

Association / Organisation	Not Available
Emergency telephone numbers	Not Available
Other emergency telephone numbers	Not Available

SECTION 2 Hazards identification

Classification of the substance or mixture

Classification according to regulation (EC) No 1272/2008 [CLP] and amendments ^[1]	H312 - Acute Toxicity (Dermal) Category 4, H332 - Acute Toxicity (Inhalation) Category 4, H302 - Acute Toxicity (Oral) Category 4
Legend:	1. Classified by Chemwatch; 2. Classification drawn from Regulation (EU) No 1272/2008 - Annex VI

Label elements

Hazard pictogram(s)	
Signal word	Warning

Hazard statement(s)

H312	Harmful in contact with skin.
H332	Harmful if inhaled.
H302	Harmful if swallowed.

Precautionary statement(s) Prevention

P271 Use only outdoors or in a well-ventilated area.		
P261 Avoid breathing dust/fumes.		
P264	P264 Wash all exposed external body areas thoroughly after handling.	
P270 Do not eat, drink or smoke when using this product.		
P280	P280 Wear protective gloves and protective clothing.	

Precautionary statement(s) Response

P301+P312	IF SWALLOWED: Call a POISON CENTER/doctor/physician/first aider if you feel unwell.
P302+P352	IF ON SKIN: Wash with plenty of water.
P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.	
P330 Rinse mouth.	
P362+P364	Take off contaminated clothing and wash it before reuse.

Precautionary statement(s) Storage

Not Applicable

Precautionary statement(s) Disposal

P501 Dispose of contents/container to authorised hazardous or special waste collection point in accordance with any local regulation.

SECTION 3 Composition / information on ingredients

Substances

CAS No	%[weight]	Name	Classification according to regulation (EC) No 1272/2008 [CLP] and amendments	SCL / M-Factor
856438-23-8*	100	Allylamine, N-FMOC protected	Acute Toxicity (Dermal) Category 4, Acute Toxicity (Inhalation) Category 4, Acute Toxicity (Oral) Category 4; H312, H332, H302 ^[1]	Not Available

Legend: 1. Classified by Chemwatch; 2. Classification drawn from Regulation (EU) No 1272/2008 - Annex VI; 3. Classification drawn from C&L; * EU IOELVs available; [e] Substance identified as having endocrine disrupting properties

Mixtures

See section above for composition of Substances

SECTION 4 First aid measures

Description of first aid measures

Eye Contact	 If this product comes in contact with eyes: Wash out immediately with water. If irritation continues, seek medical attention. Removal of contact lenses after an eye injury should only be undertaken by skilled personnel.
Skin Contact	If skin or hair contact occurs: Flush skin and hair with running water (and soap if available).

	Seek medical attention in event of irritation.
Inhalation	 If fumes, aerosols or combustion products are inhaled remove from contaminated area. Other measures are usually unnecessary.
Ingestion	 Immediately give a glass of water. First aid is not generally required. If in doubt, contact a Poisons Information Centre or a doctor.

Indication of any immediate medical attention and special treatment needed

Treat symptomatically.

SECTION 5 Firefighting measures

Extinguishing media

- There is no restriction on the type of extinguisher which may be used.
- Use extinguishing media suitable for surrounding area.

Special hazards arising from the substrate or mixture

Fire Incompatibility		None known.
4	Advice for firefighters	
	avice for menginers	
		Alert Fire Bridgede and tell them location and nature of bazard

Fire Fighting	 Alert Fire Brigade and tell them location and nature of hazard. Wear breathing apparatus plus protective gloves in the event of a fire. Prevent, by any means available, spillage from entering drains or water courses. Use fire fighting procedures suitable for surrounding area. DO NOT approach containers suspected to be hot. Cool fire exposed containers with water spray from a protected location. If safe to do so, remove containers from path of fire. Equipment should be thoroughly decontaminated after use.
Fire/Explosion Hazard	 Non combustible. Not considered a significant fire risk, however containers may burn.

SECTION 6 Accidental release measures

Personal precautions, protective equipment and emergency procedures

See section 8

Environmental precautions

See section 12

Methods and material for containment and cleaning up

Minor Spills	 Clean up all spills immediately. Avoid contact with skin and eyes. Wear impervious gloves and safety glasses. Use dry clean up procedures and avoid generating dust. Vacuum up (consider explosion-proof machines designed to be grounded during storage and use). Do NOT use air hoses for cleaning Place spilled material in clean, dry, sealable, labelled container.
Major Spills	 Clear area of personnel and move upwind. Alert Fire Brigade and tell them location and nature of hazard. Control personal contact with the substance, by using protective equipment and dust respirator. Prevent spillage from entering drains, sewers or water courses. Avoid generating dust. Sweep, shovel up. Recover product wherever possible. Put residues in labelled plastic bags or other containers for disposal. If contamination of drains or waterways occurs, advise emergency services.

Personal Protective Equipment advice is contained in Section 8 of the SDS.

SECTION 7 Handling and storage

Precautions for safe handling

Safe handling	 Limit all unnecessary personal contact. Wear protective clothing when risk of exposure occurs. Use in a well-ventilated area. Avoid contact with incompatible materials. When handling, DO NOT eat, drink or smoke. Keep containers securely sealed when not in use. Avoid physical damage to containers. Always wash hands with soap and water after handling. Work clothes should be laundered separately. Use good occupational work practice. Observe manufacturer's storage and handling recommendations contained within this SDS. Atmosphere should be regularly checked against established exposure standards to ensure safe working conditions are maintained.
Other information	 Store in original containers. Keep containers securely sealed. Store in a cool, dry area protected from environmental extremes. Store away from incompatible materials and foodstuff containers. Protect containers against physical damage and check regularly for leaks. Observe manufacturer's storage and handling recommendations contained within this SDS. For major quantities: Consider storage in bunded areas - ensure storage areas are isolated from sources of community water (including stormwater, ground water, lakes and streams). Ensure that accidental discharge to air or water is the subject of a contingency disaster management plan; this may require consultation with local authorities.

Conditions for safe storage, including any incompatibilities

Suitable container	 Lined metal can, lined metal pail/ can. Plastic pail. Polyliner drum. Packing as recommended by manufacturer. Check all containers are clearly labelled and free from leaks.
Storage incompatibility	Avoid contamination of water, foodstuffs, feed or seed. None known

SECTION 8 Exposure controls / personal protection

Control parameters

Occupational Exposure Limits (OEL)

INGREDIENT DATA

Not Available

Emergency Limits

Ingredient	TEEL-1	TEEL-2		TEEL-3
Allylamine, N-FMOC protected	Not Available	Not Available		Not Available
Ingredient Original IDLH		Revised IDLH		
Allylamine, N-FMOC protected	Not Available		Not Available	

Occupational Exposure Banding

4	eccapational Expectate Parta			
	Ingredient	Occupational Exposure Band Rating	Occupational Exposure Band Limit	
	Notes:	Occupational exposure banding is a process of assigning chemicals into specific categories or bands based on a chemical's	Occupational exposure banding is a process of assigning chemicals into specific categories or bands based on a chemical's	
		potency and the adverse health outcomes associated with exposu	re. The output of this process is an occupational exposure	
band (OEB), which corresponds to a range of exposure concentrations that are expected to protect worker health.		tions that are expected to protect worker health.		

Ingredient Occupational Exposure Band Rating		Occupational Exposure Band Limit	
Allylamine, N-FMOC protected	E	≤ 0.01 mg/m³	
Notes:	Occupational exposure banding is a process of assigning chemicals into specific categories or bands based on a chemical's potency and the adverse health outcomes associated with exposure. The output of this process is an occupational exposure band (OEB), which corresponds to a range of exposure concentrations that are expected to protect worker health.		

Exposure controls

Exposure controls			
Appropriate engineering controls	Engineering controls are used to remove a hazard or place engineering controls can be highly effective in protecting w provide this high level of protection. The basic types of engineering controls are: Process controls which involve changing the way a job acti Enclosure and/or isolation of emission source which keeps that strategically "adds" and "removes" air in the work envit designed properly. The design of a ventilation system must Employers may need to use multiple types of controls to pr • Local exhaust ventilation is required where solids are h large, a certain proportion will be powdered by mutual f • If in spite of local exhaust an adverse concentration of it considered. Such protection might consist of: (a): particle dust respirators, if necessary, combined with an (b): filter respirators with absorption cartridge or canister of (c): fresh-air hoods or masks. Air contaminants generated in the workplace possess vary velocities" of fresh circulating air required to effectively rem Type of Contaminant: direct spray, spray painting in shallow booths, drum filling, discharge (active generation into zone of rapid air motion) grinding, abrasive blasting, tumbling, high speed wheel ge velocity into zone of very high rapid air motion). Within each range the appropriate value depends on: Lower end of the range 1: Room air currents minimal or favourable to capture 2: Contaminants of low toxicity or of nuisance value only. 3: Intermittent, low production. 4: Large hood or large air mass in motion Simple theory shows that air velocity falls rapidly with dista generally decreases with the square of distance from the e extraction point should be adjusted, accordingly, after refer extraction point should be adjusted, accordingly, after refer extraction point should be adjusted, accordingly, after refer extraction fan, for example, should be a minimum of 4-10 r distant from the extraction point. Other mechanical conside apparatus, make it essential that theoretical air velocities a install	orkers and will typically be independent vity or process is done to reduce the a selected hazard "physically" away ronment. Ventilation can remove or the match the particular process and of revent employee overexposure. andled as powders or crystals; event riction. the substance in air could occur, re- n absorption cartridge; the right type; ing "escape" velocities which, in tur- tove the contaminant. conveyer loading, crusher dusts, g enerated dusts (released at high ini- 1: Disturbing room air currents 2: Contaminants of high toxicity 3: High production, heavy use 4: Small hood-local control only nce away from the opening of a sin xtraction point (in simple cases). The ence to distance from the contamin n/s (800-2000 f/min) for extraction of erations, producing performance de	addent of worker interactions to he risk. ay from the worker and ventilation 'dilute an air contaminant if chemical or contaminant in use. en when particulates are relatively ispiratory protection should be rn, determine the "capture gas 1-2.5 m/s (200-500 f/min.) tital 2.5-10 m/s (500-2000 f/min.) itial 2.5-10 m/s (500-2000 f/min.) nple extraction pipe. Velocity herefore the air speed at the hating source. The air velocity at the of crusher dusts generated 2 metres ificits within the extraction
Individual protection measures, such as personal protective equipment			
Eye and face protection	 Safety glasses with side shields Chemical goggles. [AS/NZS 1337.1, EN166 or national equivalent] Contact lenses may pose a special hazard; soft contact lenses may absorb and concentrate irritants. A written policy document, describing the wearing of lenses or restrictions on use, should be created for each workplace or task. This should include a review of lens absorption and adsorption for the class of chemicals in use and an account of injury experience. Medical and first-aid personnel should be trained in their removal and suitable equipment should be readily available. In the event of chemical exposure, begin eye irrigation immediately and remove contact lens as soon as practicable. Lens should be removed at the first signs of eye redness or irritation - lens should be removed in a clean environment only after workers have washed hands thoroughly. [CDC NIOSH Current Intelligence Bulletin 59]. 		
Skin protection	See Hand protection below		

Hands/feet protection	The selection of suitable gloves does not only depend on the material, but also on further marks of quality which vary from manufacturer to manufacturer to manufacturer to manufacturer to the checked prior to the application. The exact break through time for substances has to be obtained from the manufacturer of the protective gloves and has to be observed when making a final choice. Personal hygiene is a key element of effective hand care. Gloves must only be worn on clean hands. After using gloves, hands should be washed and dried thoroughly. Application of a non-perfumed moisturiser is recommended. Suitability and durability of glove type is dependent on usage. Important factors in the selection of gloves include: frequency and duration of contact
Body protection	See Other protection below
Other protection	No special equipment needed when handling small quantities. OTHERWISE: • Overalls. • Barrier cream. • Eyewash unit.

Respiratory protection

Type -P Filter of sufficient capacity. (AS/NZS 1716 & 1715, EN 143:2000 & 149:2001, ANSI Z88 or national equivalent)

Required Minimum Protection Factor	Half-Face Respirator	Full-Face Respirator	Powered Air Respirator
up to 10 x ES	P1 Air-line*	-	PAPR-P1 -
up to 50 x ES	Air-line**	P2	PAPR-P2
up to 100 x ES	-	P3	-
		Air-line*	-
100+ x ES	-	Air-line**	PAPR-P3

* - Negative pressure demand ** - Continuous flow

A(All classes) = Organic vapours, B AUS or B1 = Acid gasses, B2 = Acid gas or hydrogen cyanide(HCN), B3 = Acid gas or hydrogen cyanide(HCN), E = Sulfur dioxide(SO2), G = Agricultural chemicals, K = Ammonia(NH3), Hg = Mercury, NO = Oxides of nitrogen, MB = Methyl bromide, AX = Low boiling point organic

compounds(below 65 degC)

· Respirators may be necessary when engineering and administrative controls do not adequately prevent exposures.

• The decision to use respiratory protection should be based on professional judgment that takes into account toxicity information, exposure measurement data, and frequency and likelihood of the worker's exposure - ensure users are not subject to high thermal loads which may result in heat stress or distress due to personal protective equipment (powered, positive flow, full face apparatus may be an option).

• Published occupational exposure limits, where they exist, will assist in determining the adequacy of the selected respiratory protection. These may be government mandated or vendor recommended.

Certified respirators will be useful for protecting workers from inhalation of particulates when properly selected and fit tested as part of a complete respiratory protection program.

• Where protection from nuisance levels of dusts are desired, use type N95 (US) or type P1 (EN143) dust masks. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU)

· Use approved positive flow mask if significant quantities of dust becomes airborne.

· Try to avoid creating dust conditions.

SECTION 9 Physical and chemical properties

Information on basic physical and chemical properties

Appearance	Not Available		
Physical state	Solid	Relative density (Water = 1)	Not Available
Odour	Not Available	Partition coefficient n-octanol / water	Not Available
Odour threshold	Not Available	Auto-ignition temperature (°C)	Not Available
pH (as supplied)	Not Available	Decomposition temperature (°C)	Not Available
Melting point / freezing point (°C)	Not Available	Viscosity (cSt)	Not Available
Initial boiling point and boiling range (°C)	Not Available	Molecular weight (g/mol)	Not Available
Flash point (°C)	Not Available	Taste	Not Available
Evaporation rate	Not Available	Explosive properties	Not Available
Flammability	Not Available	Oxidising properties	Not Available
Upper Explosive Limit (%)	Not Available	Surface Tension (dyn/cm or mN/m)	Not Applicable
Lower Explosive Limit (%)	Not Available	Volatile Component (%vol)	Not Available
Vapour pressure (kPa)	Not Available	Gas group	Not Available
Solubility in water	Not Available	pH as a solution (1%)	Not Available
Vapour density (Air = 1)	Not Available	VOC g/L	Not Available

SECTION 10 Stability and reactivity

Reactivity	See section 7
Chemical stability	Product is considered stable and hazardous polymerisation will not occur.
Possibility of hazardous reactions	See section 7
Conditions to avoid	See section 7
Incompatible materials	See section 7
Hazardous decomposition products	See section 5

Information on toxicological effects

Inhaled	The material is not thought to produce adverse health effects or irritation of the respiratory tract (as classified by EC Directives using animal models). Nevertheless, good hygiene practice requires that exposure be kept to a minimum and that suitable control measures be used in an occupational setting.
Ingestion	The material has NOT been classified by EC Directives or other classification systems as "harmful by ingestion". This is because of the lack of corroborating animal or human evidence.
Skin Contact	The material is not thought to produce adverse health effects or skin irritation following contact (as classified by EC Directives using animal models). Nevertheless, good hygiene practice requires that exposure be kept to a minimum and that suitable gloves be used in an occupational setting.
Eye	Although the material is not thought to be an irritant (as classified by EC Directives), direct contact with the eye may cause transient discomfort characterised by tearing or conjunctival redness (as with windburn). Slight abrasive damage may also result.
Chronic	Long-term exposure to the product is not thought to produce chronic effects adverse to the health (as classified by EC Directives using animal models); nevertheless exposure by all routes should be minimised as a matter of course.

Legend:	1. Value obtained from Europe ECHA Registered Substances - Acute toxicity 2. Value obtained from manufacturer's SDS.
	Unless otherwise specified data extracted from RTECS - Register of Toxic Effect of chemical Substances

×	Carcinogenicity	у 🖌	Acute Toxicity
×	Reproductivity	n 🗙	Skin Irritation/Corrosion
×	STOT - Single Exposure		Serious Eye Damage/Irritation
×	STOT - Repeated Exposure		Respiratory or Skin sensitisation
x	Aspiration Hazard	y 🗙	Mutagenicity

Legend: X − Data either not available or does not fill the criteria for classification ✓ − Data available to make classification

SECTION 12 Ecological information

Toxicity

Legend: Extracted from 1. IUCLID Toxicity Data 2. Europe ECHA Registered Substances - Ecotoxicological Information - Aquatic Toxicity 4. US EPA, Ecotox database - Aquatic Toxicity Data 5. ECETOC Aquatic Hazard Assessment Data 6. NITE (Japan) -Bioconcentration Data 7. METI (Japan) - Bioconcentration Data 8. Vendor Data

Persistence and degradability

Ingredient	Persistence: Water/Soil	Persistence: Air
	No Data available for all ingredients	No Data available for all ingredients

Bioaccumulative potential

Ingredient	Bioaccumulation
	No Data available for all ingredients

Mobility in soil

Ingredient	Mobility
	No Data available for all ingredients

SECTION 13 Disposal considerations

Waste treatment methods

Product / Packaging disposal

- ▶ Recycle wherever possible or consult manufacturer for recycling options.
- Consult State Land Waste Management Authority for disposal.

 Bury residue in an authorised landfill. Recycle containers if possible, or dispose of in an authorised landfill.

SECTION 14 Transport information

Labels Required	
Marine Pollutant	NO
Land transport (ADR): NC	DT REGULATED FOR TRANSPORT OF DANGEROUS GOODS

Air transport (ICAO-IATA / DGR): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS

Sea transport (IMDG-Code / GGVSee): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS

Inland waterways transport (ADN): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS

Transport in bulk according to Annex II of MARPOL and the IBC code

Not Applicable

Transport in bulk in accordance with MARPOL Annex V and the IMSBC Code

Product name	Group
Allylamine, N-FMOC protected	Not Available

Transport in bulk in accordance with the IGC Code

Product name	Ship Type
Allylamine, N-FMOC protected	Not Available

SECTION 15 Regulatory information

Safety, health and environmental regulations / legislation specific for the substance or mixture

Allylamine, N-FMOC protected is found on the following regulatory lists

Not Applicable

National Inventory Status

National Inventory	Status
Australia - AIIC / Australia Non-Industrial Use	No (Allylamine, N-FMOC protected)
Canada - DSL	No (Allylamine, N-FMOC protected)
Canada - NDSL	No (Allylamine, N-FMOC protected)
China - IECSC	No (Allylamine, N-FMOC protected)
Europe - EINEC / ELINCS / NLP	No (Allylamine, N-FMOC protected)
Japan - ENCS	No (Allylamine, N-FMOC protected)
Korea - KECI	No (Allylamine, N-FMOC protected)
New Zealand - NZIoC	No (Allylamine, N-FMOC protected)
Philippines - PICCS	No (Allylamine, N-FMOC protected)
USA - TSCA	No (Allylamine, N-FMOC protected)
Taiwan - TCSI	No (Allylamine, N-FMOC protected)
Mexico - INSQ	No (Allylamine, N-FMOC protected)
Vietnam - NCI	No (Allylamine, N-FMOC protected)
Russia - FBEPH	No (Allylamine, N-FMOC protected)
Legend:	Yes = All CAS declared ingredients are on the inventory No = One or more of the CAS listed ingredients are not on the inventory. These ingredients may be exempt or will require registration.

SECTION 16 Other information

Revision Date	10/07/2023
Initial Date	10/07/2023

SDS Version Summary

Version	Date of Update	Sections Updated
1.2	10/07/2023	CAS Number, Hazards identification - Classification, Composition / information on ingredients - Ingredients, Korean MSDS Number, Identification of the substance / mixture and of the company / undertaking - Supplier Information, Identification of the substance / mixture and of the company / undertaking - Synonyms

Other information

Classification of the preparation and its individual components has drawn on official and authoritative sources as well as independent review by the Chemwatch Classification committee using available literature references.

The SDS is a Hazard Communication tool and should be used to assist in the Risk Assessment. Many factors determine whether the reported Hazards are Risks in the workplace or other settings. Risks may be determined by reference to Exposures Scenarios. Scale of use, frequency of use and current or available engineering controls must be considered.

For detailed advice on Personal Protective Equipment, refer to the following EU CEN Standards:

EN 166 Personal eye-protection

EN 340 Protective clothing

EN 374 Protective gloves against chemicals and micro-organisms

EN 13832 Footwear protecting against chemicals

EN 133 Respiratory protective devices

Definitions and abbreviations

PC - TWA: Permissible Concentration-Time Weighted Average

PC - STEL: Permissible Concentration-Short Term Exposure Limit

IARC: International Agency for Research on Cancer

ACGIH: American Conference of Governmental Industrial Hygienists

STEL: Short Term Exposure Limit

TEEL: Temporary Emergency Exposure Limit.

IDLH: Immediately Dangerous to Life or Health Concentrations

ES: Exposure Standard

OSF: Odour Safety Factor

NOAEL :No Observed Adverse Effect Level

LOAEL: Lowest Observed Adverse Effect Level

TLV: Threshold Limit Value

LOD: Limit Of Detection

OTV: Odour Threshold Value

BCF: BioConcentration Factors

BEI: Biological Exposure Index

AIIC: Australian Inventory of Industrial Chemicals

DSL: Domestic Substances List

NDSL: Non-Domestic Substances List

IECSC: Inventory of Existing Chemical Substance in China

EINECS: European INventory of Existing Commercial chemical Substances

ELINCS: European List of Notified Chemical Substances

NLP: No-Longer Polymers

ENCS: Existing and New Chemical Substances Inventory

KECI: Korea Existing Chemicals Inventory

NZIoC: New Zealand Inventory of Chemicals

PICCS: Philippine Inventory of Chemicals and Chemical Substances

TSCA: Toxic Substances Control Act

TCSI: Taiwan Chemical Substance Inventory

INSQ: Inventario Nacional de Sustancias Químicas

NCI: National Chemical Inventory

FBEPH: Russian Register of Potentially Hazardous Chemical and Biological Substances

Classification and procedure used to derive the classification for mixtures according to Regulation (EC) 1272/2008 [CLP]

Classification according to regulation (EC) No 1272/2008 [CLP] and amendments	Classification Procedure
Acute Toxicity (Dermal)	Expert judgement

Classification according to regulation (EC) No 1272/2008 [CLP] and amendments	Classification Procedure
Category 4, H312	
Acute Toxicity (Inhalation) Category 4, H332	Expert judgement
Acute Toxicity (Oral) Category 4, H302	Expert judgement

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