

MATERIAL SAFETY DATA SHEET

2-Aminobenzotrifluoride

Revision Date: 20-06-22

Revision Number: 5.1

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

Product Name	2-AMINO BENZOTRIFLUORIDE
Chemical Name	Not Available
Synonyms	C7-H6-F3-N; F3CC6H4NH2; o-toluidine, alpha,alpha,alpha-trifluoride; o-ABTF; o-aminobenzal fluoride; o-aminobenzotrifluoride; toluene, 2-amino-alpha,alpha,alpha-trifluoro-; o-(trifluoromethyl)aniline; o-(trifluoromethyl)benzenamine
Proper Shipping Name	2-TRIFLUOROMETHYLANILINE
Chemical Formula	C ₇ H ₆ F ₃ N
Other means of identification	Not available
CAS Number	88-17-5

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

Relevant identified uses	Intermediate.
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Details of the manufacturer or supplier of the safety data sheet:






Registered company name	Cohizon Life Sciences Limited
Address	Plot No. 6102/3, 6117-19, 5809-10, GIDC, Ankleshwar Gujarat 393002 India
Telephone	Not Available
Fax	Not Available
Website	Not Available
Email	Not Available

Emergency telephone number:

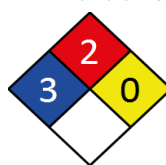
Association / Organisation	Cohizon Life Sciences Limited
Emergency telephone number(s)	(+91) 7046611150/51
Other emergency telephone number(s)	(+91) 6357684904

SECTION 2 Hazards identification

Classification of the substance or mixture Hazard Ratings

	Min	Max	
Flammability	1 		0 = Minimum
Toxicity	3 		1 = Low
Body Contact	3 		2 = Moderate
Reactivity	1 		3 = High
Chronic	2 		4 = Extreme

NFPA 704 diamond



Note: The hazard category numbers found in GHS classification in section 2 of this SDSs are NOT to be used to fill in the NFPA 704 diamond. Blue = Health Red = Fire Yellow = Reactivity White = Special (Oxidizer or water reactive substances)

Classification	Flammable Liquids Category 4, Acute Toxicity (Oral, Dermal and Inhalation) Category 3, Skin Corrosion/Irritation Category 2, Serious Eye Damage/Eye Irritation Category 1, Specific Target Organ Toxicity - Single Exposure (Respiratory Tract Irritation) Category 3, Specific Target Organ Toxicity - Repeated Exposure Category 2, Hazardous to the Aquatic Environment Long-Term Hazard Category 2
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Label elements

Hazard pictogram(s)	
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Signal word	Danger
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MATERIAL SAFETY DATA SHEET

2-Aminobenzotrifluoride

Revision Date: 20-06-22

Revision Number: 5.1

Hazard statement(s)

H227 H301+H311+H331 H315 H318 H335 H373 H411	Combustible liquid. Toxic if swallowed, in contact with skin or if inhaled. Causes skin irritation. Causes serious eye damage. May cause respiratory irritation. May cause damage to organs through prolonged or repeated exposure. Toxic to aquatic life with long lasting effects.
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Precautionary statement(s) Prevention

P210 P260 P264 P270 P271 P280 P273	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Do not breathe mist/vapours/spray. Wash all exposed external body areas thoroughly after handling. Do not eat, drink or smoke when using this product. Use only outdoors or in a well-ventilated area. Wear protective gloves, protective clothing, eye protection and face protection. Avoid release to the environment.
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Precautionary statement(s) Response

P301+P310 P302+P352 P304+P340 P305+P351+P338 P330 P361+P364 P370+P378 P391 P332+P313	IF SWALLOWED: Immediately call a POISON CENTER/doctor/physician/first aider. IF ON SKIN: Wash with plenty of water. IF INHALED: Remove person to fresh air and keep comfortable for breathing. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Rinse mouth. Take off immediately all contaminated clothing and wash it before reuse. In case of fire: Use alcohol resistant foam or fine spray/water fog to extinguish. Collect spillage. If skin irritation occurs: Get medical advice/attention.
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Precautionary statement(s) Storage

P405 P403+P233	Store locked up. Store in a well-ventilated place. Keep container tightly closed.
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Precautionary statement(s) Disposal

P501	Dispose of contents/container to authorised hazardous or special waste collection point in accordance with any local regulation
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SECTION 3 Composition / information on ingredients

Substances

Cas No.	%[weight]	Name
88-17-5	>98	2-Aminobenzotrifluoride

Mixtures

See Section above for composition of substances

SECTION 4 First aid measures

Description of first aid measures

Eye Contact	<ul style="list-style-type: none"> If this product comes in contact with the eyes: Immediately hold eyelids apart and flush the eye continuously with running water. Ensure complete irrigation of the eye by keeping eyelids apart and away from eye and moving the eyelids by occasionally lifting the upper and lower lids. Continue flushing until advised to stop by the Poisons Information Centre or a doctor, or for at least 15 minutes. Transport to hospital or doctor without delay.
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MATERIAL SAFETY DATA SHEET

2-Aminobenzotrifluoride

Revision Date: 20-06-22

Revision Number: 5.1

	<ul style="list-style-type: none">Removal of contact lenses after an eye injury should only be undertaken by skilled personnel								
Skin Contact	<p>If skin or hair contact occurs:</p> <ul style="list-style-type: none">Quickly but gently, wipe material off skin with a dry, clean cloth.Immediately remove all contaminated clothing, including footwear.Wash skin and hair with running water. Continue flushing with water until advised to stop by the Poisons Information Centre.Transport to hospital, or doctor.								
Inhalation	<ul style="list-style-type: none">If fumes or combustion products are inhaled remove from contaminated area.Lay patient down. Keep warm and rested.Prostheses such as false teeth, which may block airway, should be removed, where possible, prior to initiating first aid procedures.Apply artificial respiration if not breathing, preferably with a demand valve resuscitator, bag-valve mask device, or pocket mask as trained. Perform CPR if necessary.Transport to hospital, or doctor, without delay								
Ingestion	<ul style="list-style-type: none">IF SWALLOWED, REFER FOR MEDICAL ATTENTION, WHERE POSSIBLE, WITHOUT DELAY.For advice, contact a Poisons Information Centre or a doctorUrgent hospital treatment is likely to be neededIn the meantime, qualified first-aid personnel should treat the patient following observation and employing supportive measures as indicated by the patient's condition.If the services of a medical officer or medical doctor are readily available, the patient should be placed in his/her care and a copy of the SDS should be provided. Further action will be the responsibility of the medical specialist.If medical attention is not available on the worksite or surroundings send the patient to a hospital together with a copy of the SDS. <p>Where medical attention is not immediately available or where the patient is more than 15 minutes from a hospital or unless instructed otherwise:</p> <ul style="list-style-type: none">INDUCE vomiting with fingers down the back of the throat, ONLY IF CONSCIOUS. Lean patient forward or place on left side (head-down position, if possible) to maintain open airway and prevent aspiration.NOTE: Wear a protective glove when inducing vomiting by mechanical means								
<p>Indication of any immediate medical attention and special treatment needed</p> <p>The material may induce methaemoglobinaemia following exposure.</p> <ul style="list-style-type: none">Initial attention should be directed at oxygen delivery and assisted ventilation if necessary. Hyperbaric oxygen has not demonstrated substantial benefits.Hypotension should respond to Trendelenburg's position and intravenous fluids; otherwise dopamine may be needed.Symptomatic patients with methaemoglobin levels over 30% should receive methylene blue. (Cyanosis, alone, is not an indication for treatment). The usual dose is 1-2 mg/kg of a 1% solution (10 mg/ml) IV over 50 minutes; repeat, using the same dose, if symptoms of hypoxia fail to subside within 1 hour.Thorough cleansing of the entire contaminated area of the body, including the scalp and nails, is of utmost importance. BIOLOGICAL EXPOSURE INDEX - BEIThese represent the determinants observed in specimens collected from a healthy worker exposed at the Exposure Standard (ES or TLV): <table><tr><td>Determinant</td><td>Index</td><td>Sampling Time</td><td>Comment</td></tr><tr><td>1. Methemoglobin in blood</td><td>1.5% of hemoglobin</td><td>During or end of shift</td><td>B, NS, SQ</td></tr></table> <p>B: Background levels occur in specimens collected from subjects NOT exposed NS: Non-specific determinant; also observed after exposure to other materials SQ: Semi-quantitative determinant - Interpretation may be ambiguous; should be used as a screening test or confirmatory test</p>		Determinant	Index	Sampling Time	Comment	1. Methemoglobin in blood	1.5% of hemoglobin	During or end of shift	B, NS, SQ
Determinant	Index	Sampling Time	Comment						
1. Methemoglobin in blood	1.5% of hemoglobin	During or end of shift	B, NS, SQ						

SECTION 5 Firefighting measures

Extinguishing media

- Foam.
- Dry chemical powder
- BCF (where regulations permit).
- Carbon dioxide.
- Water spray or fog - Large fires only

Special hazards arising from the substrate or mixture

Fire Incompatibility

Avoid contamination with oxidising agents i.e. nitrates, oxidising acids, chlorine bleaches, pool chlorine etc. as ignition may result

Advice for firefighters

Fire Fighting	<ul style="list-style-type: none"> • Alert Fire Brigade and tell them location and nature of hazard. • Wear breathing apparatus plus protective gloves • Prevent, by any means available, spillage from entering drains or water courses • Use water delivered as a fine spray to control fire and cool adjacent 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	<ul style="list-style-type: none"> • Combustible. • Slight fire hazard when exposed to heat or flame. • Heating may cause expansion or decomposition leading to violent rupture of containers. • On combustion, may emit toxic fumes of carbon monoxide (CO). • May emit acrid smoke. • Mists containing combustible materials may be explosive <p>Combustion products include.</p> <ul style="list-style-type: none"> • carbon monoxide (CO) • carbon dioxide (CO₂) • nitrogen oxides (NO_x) • other pyrolysis products typical of burning organic material • May emit poisonous fumes • May emit corrosive fumes

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	<ul style="list-style-type: none"> • Remove all ignition sources. • Clean up all spills immediately. • Avoid contact with skin and eyes. • Control personal contact with the substance, by using protective equipment. • Use dry clean up procedures and avoid generating dust. • Place in a suitable, labelled container for waste disposal.
Major Spills	<ul style="list-style-type: none"> • Clear area of personnel and move upwind. • Alert fire Brigade and tell them location and nature of hazard. • Control personal contact by wearing protective clothing.

	<ul style="list-style-type: none"> Prevent, by any means available, spillage from entering drains or water courses. Stop leak if safe to do so. Contain spill with sand, earth or vermiculite. Collect recoverable product into labelled containers for recycling. Neutralise/decontaminate residue (see Section 13 for specific agent). ▶ Collect solid residues and seal in labelled drums for disposal. Wash area and prevent runoff into drains. After clean up operations, decontaminate and launder all protective clothing and equipment before storing and re-using. If contamination of drains or waterways occurs, advise emergency services
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Personal Protective Equipment advice is contained in Section 8 of the SDS

SECTION 7 Handling and storage

Precautions for safe handling

Safe Handling	<ul style="list-style-type: none"> Avoid all personal contact, including inhalation. Wear protective clothing when risk of exposure occurs Use in a well-ventilated area Prevent concentration in hollows and sumps. DO NOT enter confined spaces until the atmosphere has been checked. DO NOT allow material to contact humans, exposed food or food utensils 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. Launder contaminated clothing before re-use 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. DO NOT allow clothing wet with material to stay in contact with skin
Other information	<ul style="list-style-type: none"> Store in original containers. Keep containers securely sealed. Store in a cool, dry, well-ventilated area. 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

Conditions for safe storage, including any incompatibilities

Suitable container	<ul style="list-style-type: none"> 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. For low viscosity materials Drums and jerricans must be of the non-removable head type. Where a can is to be used as an inner package, the can must have a screwed enclosure. For materials with a viscosity of at least 2680 cSt. (23 deg. C) and solids (between 15 C deg. and 40 deg C.) Removable head packaging; Cans with friction closures and low pressure tubes and cartridges may be used. Where combination packages are used, and the inner packages are of glass,
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MATERIAL SAFETY DATA SHEET

2-Aminobenzotrifluoride

Revision Date: 20-06-22

Revision Number: 5.1

	<p>there must be sufficient inert cushioning material in contact with inner and outer packages.</p> <ul style="list-style-type: none"> In addition, where inner packaging's are glass and contain liquids of packing group I and II there must be sufficient inert absorbent to absorb any spillage *. unless the outer packaging is a close fitting moulded plastic box and the substances are not incompatible with the plastic.
Storage incompatibility	<ul style="list-style-type: none"> Many arylamines (aromatic amines such as aniline, N-ethylaniline, o-toluidine, xylydine etc. and their mixtures) are hypergolic (ignite spontaneously) with red fuming nitric acid. When the amines are dissolved in triethylamine, ignition occurs at -60 deg. C or less. Various metal oxides and their salts may promote ignition of amine-red fuming nitric acid systems. Soluble materials such as copper(I) oxide, ammonium metavanadate are effective; insoluble materials such as copper(II) oxide, iron(II) oxide, potassium dichromate are also effective. Avoid oxidising agents, acids, acid chlorides, acid anhydrides, chloroformates.

SECTION 8 Exposure controls / personal protection

Control Parameters

Occupational Exposure Limits (OEL)







INGREDIENT DATA

Not Available

Ingredient	Original IDLH	Revised IDLH
2-aminobenzotrifluoride	Not Available	Not Available

Exposure controls

Appropriate engineering controls	<p>Engineering controls are used to remove a hazard or place a barrier between the worker and the hazard. Well-designed engineering controls can be highly effective in protecting workers and will typically be independent of worker interactions to provide this high level of protection.</p> <p>The basic types of engineering controls are:</p> <p>Process controls which involve changing the way a job activity or process is done to reduce the risk.</p> <p>Enclosure and/or isolation of emission source which keeps a selected hazard "physically" away from the worker and ventilation that strategically "adds" and "removes" air in the work environment. Ventilation can remove or dilute an air contaminant if designed properly. The design of a ventilation system must match the particular process and chemical or contaminant in use. Employers may need to use multiple types of controls to prevent employee overexposure.</p> <ul style="list-style-type: none"> Local exhaust ventilation usually required. If risk of overexposure exists, wear approved respirator. Correct fit is essential to obtain adequate protection. Supplied-air type respirator may be required in special circumstances. Correct fit is essential to ensure adequate protection. An approved self contained breathing apparatus (SCBA) may be required in some situations. Provide adequate ventilation in warehouse or closed storage area. Air contaminants generated in the workplace possess varying "escape" velocities which, in turn, determine the "capture velocities" of fresh circulating air required to effectively remove the contaminant: 						
	<table> <tr> <th>Type of Contaminant</th><th>Air Speed</th></tr> <tr> <td>solvent, vapours, degreasing etc., evaporating from tank (in still air).</td><td>.25-0.5 m/s (50-100 f/min.)</td></tr> <tr> <td>aerosols, fumes from pouring operations, intermittent container filling, low speed conveyer transfers, welding, spray drift, plating acid fumes, pickling (released at low velocity into zone of active generation)</td><td>0.5-1 m/s (100-200 f/min.)</td></tr> </table>	Type of Contaminant	Air Speed	solvent, vapours, degreasing etc., evaporating from tank (in still air).	.25-0.5 m/s (50-100 f/min.)	aerosols, fumes from pouring operations, intermittent container filling, low speed conveyer transfers, welding, spray drift, plating acid fumes, pickling (released at low velocity into zone of active generation)	0.5-1 m/s (100-200 f/min.)
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	direct spray, spray painting in shallow booths, drum filling, conveyer loading, crusher dusts, gas discharge (active generation into zone of rapid air motion)	1-2.5 m/s (200-500 ft/min)
	grinding, abrasive blasting, tumbling, high speed wheel generated dusts (released at high initial velocity into zone of very high rapid air motion)	2.5-10 m/s (500-2000 ft/min)
	Which each range the appropriate value depends on	
	Lower end of the range	Upper end of the range
	1. Room air currents minimal or favourable to capture	1. Disturbing room air currents
	2. Contaminants of low toxicity or of nuisance value only	2: Contaminants of high toxicity
	3. Intermittent, low production	3: High production, heavy use
	4. Large hood or large air mass in motion	4: Small hood-local control only
	Simple theory shows that air velocity falls rapidly with distance away from the opening of a simple extraction pipe. Velocity generally decreases with the square of distance from the extraction point (in simple cases). Therefore, the air speed at the extraction point should be adjusted, accordingly, after reference to distance from the contaminating source. The air velocity at the extraction fan, for example, should be a minimum of 4-10 m/s (800-2000 ft/min) for extraction of crusher dusts generated 2 metres distant from the extraction point. Other mechanical considerations, producing performance deficits within the extraction apparatus, make it essential that theoretical air velocities are multiplied by factors of 10 or more when extraction systems are installed or used	
	     	
Individual protection measures, such as personal protective equipment		
Eye and face protection	<ul style="list-style-type: none"> 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	<p>NOTE:</p> <ul style="list-style-type: none"> Wear chemical protective gloves, e.g. PVC. Wear safety footwear or safety gumboots, e.g. Rubber <p>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. Where the chemical is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.</p> <p>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.</p> <p>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 moisturizer is recommended.</p> <p>Suitability and durability of glove type is dependent on usage. Important factors in the selection of gloves include:</p> <ul style="list-style-type: none"> frequency and duration of contact, chemical resistance of glove material, 	

MATERIAL SAFETY DATA SHEET

2-Aminobenzotrifluoride

Revision Date: 20-06-22

Revision Number: 5.1

	<ul style="list-style-type: none"> glove thickness and dexterity <p>Select gloves tested to a relevant standard (e.g. Europe EN 374, US F739, AS/NZS 2161.1 or national equivalent).</p> <ul style="list-style-type: none"> When prolonged or frequently repeated contact may occur, a glove with a protection class of 5 or higher (breakthrough time greater than 240 minutes according to EN 374, AS/NZS 2161.10.1 or national equivalent) is recommended. When only brief contact is expected, a glove with a protection class of 3 or higher (breakthrough time greater than 60 minutes according to EN 374, AS/NZS 2161.10.1 or national equivalent) is recommended. Some glove polymer types are less affected by movement and this should be taken into account when considering gloves for long-term use. Contaminated gloves should be replaced. <p>As defined in ASTM F-739-96 in any application, gloves are rated as:</p> <ul style="list-style-type: none"> Excellent when breakthrough time > 480 min Good when breakthrough time > 20 min Fair when breakthrough time < 20 min Poor when glove material degrades <p>For general applications, gloves with thickness typically greater than 0.35 mm, are recommended.</p> <p>It should be emphasized that glove thickness is not necessarily a good predictor of glove resistance to a specific chemical, as the permeation efficiency of the glove will be dependent on the exact composition of the glove material. Therefore, glove selection should also be based on consideration of the task requirements and knowledge of breakthrough times.</p> <p>Glove thickness may also vary depending on the glove manufacturer, the glove type and the glove model. Therefore, the manufacturers' technical data should always be taken into account to ensure selection of the most appropriate glove for the task.</p> <p>Note: Depending on the activity being conducted, gloves of varying thickness may be required for specific tasks. For example:</p> <ul style="list-style-type: none"> Thinner gloves (down to 0.1 mm or less) may be required where a high degree of manual dexterity is needed. However, these gloves are only likely to give short duration protection and would normally be just for single use applications, then disposed of. Thicker gloves (up to 3 mm or more) may be required where there is a mechanical (as well as a chemical) risk i.e. where there is abrasion or puncture potential <p>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.</p> <ul style="list-style-type: none"> Neoprene gloves
Body protection	See Other protection below
Other protection	<ul style="list-style-type: none"> Overalls Eye wash unit Barrier Cream Skin Cleansing cream

Respiratory protection

Type -P Filter of sufficient capacity. (AS/NZS 1716 & 1715, EN 143:2000 & 149:2001, ANSI Z88 or national equivalent)
Selection of the Class and Type of respirator will depend upon the level of breathing zone contaminant and the chemical nature of the contaminant. Protection Factors (defined as the ratio of contaminant outside and inside the mask) may also be important.

Required minimum protection factor	Maximum gas/vapour concentration present in air p.p.m. (by volume)	Half-face Respirator	Full-Face Respirator	
up to 10	1000	A-AUS / Class1	-	

MATERIAL SAFETY DATA SHEET

2-Aminobenzotrifluoride

Revision Date: 20-06-22

Revision Number: 5.1

up to 50	1000	-	A-AUS / Class 1	
up to 50	5000	Airline *	-	
up to 100	5000	-	A-2	
up to 100	10000	-	A-3	
100+			Airline**	

Continuous Flow ** - Continuous-flow or positive pressure demand

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)

- Cartridge respirators should never be used for emergency ingress or in areas of unknown vapor concentrations or oxygen content.
- The wearer must be warned to leave the contaminated area immediately on detecting any odors through the respirator. The odor may indicate that the mask is not functioning properly, that the vapor concentration is too high, or that the mask is not properly fitted. Because of these limitations, only restricted use of cartridge respirators is considered appropriate.
- Cartridge performance is affected by humidity. Cartridges should be changed after 2 hr of continuous use unless it is determined that the humidity is less than 75%, in which case, cartridges can be used for 4 hr. Used cartridges should be discarded daily, regardless of the length of time used

SECTION 9 Physical and chemical properties

Information on basic physical and chemical properties

Appearance	Off-white crystalline powder; does not mix well with water.		
Physical state	Liquid	Relative density (Water = 1)	1.296
Odour	Not Available	Partition coefficient n-octanol / water	Not Available
Odour threshold	Not Available	Auto-ignition temperature (°C)	Not Available
pH (as supplied)	Not Applicable	Decomposition temperature (°C)	Not Available
Melting point / freezing point (°C)	-30 - -28°C	Viscosity (cSt)	Not Applicable
Initial boiling point and boiling range (°C)	170-173°C	Molecular weight (g/mol)	161.13
Flash point (°C)	67°C	Taste	Not Available
Evaporation rate	Not Applicable	Explosive properties	Not Available
Flammability	Not Applicable	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)	Negligible	Gas group	Not Available
Solubility in water	Partly miscible	pH as a solution (1%)	Not Applicable
Vapour density (Air = 1)	>1	VOC g/L	Not Applicable
Heat of Combustion (kJ/g)	Not Available	Ignition Distance (cm)	Not Available
Flame Height (cm)	Not Available	Flame Duration (s)	Not Available
Enclosed Space Ignition Time Equivalent (s/m³)	Not Available	Enclosed Space Ignition Deflagration Density (g/m³)	Not Available

SECTION 10 Stability and reactivity

Reactivity	See section 7
Chemical stability	<ul style="list-style-type: none"> Unstable in the presence of incompatible materials Product is considered stable 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

SECTION 11 Toxicological information

Information on toxicological effects

a) Acute Toxicity	There is sufficient evidence to classify this material as acutely toxic.
b) Skin Irritation/Corrosion	There is sufficient evidence to classify this material as skin corrosive or irritating.
c) Serious Eye Damage/Irritation	There is sufficient evidence to classify this material as eye damaging or irritating
d) Respiratory or Skin sensitisation	Based on available data, the classification criteria are not met.
e) Mutagenicity	Based on available data, the classification criteria are not met.
f) Carcinogenicity	Based on available data, the classification criteria are not met.
g) Reproductivity	Based on available data, the classification criteria are not met.
h) STOT - Single Exposure	There is sufficient evidence to classify this material as toxic to specific organs through single exposure
i) STOT - Repeated Exposure	There is sufficient evidence to classify this material as toxic to specific organs through repeated exposure
j) Aspiration Hazard	Based on available data, the classification criteria are not met.

Inhaled	<ul style="list-style-type: none"> Inhalation of vapours, aerosols (mists, fumes) or dusts, generated by the material during the course of normal handling, may be harmful The material can cause respiratory irritation in some persons. The body's response to such irritation can cause further lung damage. Inhalation of vapours may cause drowsiness and dizziness. This may be accompanied by sleepiness, reduced alertness, loss of reflexes, lack of co-ordination, and vertigo. Inhalation hazard is increased at higher temperatures. Inhalation of high concentrations of gas/vapour causes lung irritation with coughing and nausea, central nervous depression with headache and dizziness, slowing of reflexes, fatigue and inco-ordination.
Ingestion	<ul style="list-style-type: none"> Toxic effects may result from the accidental ingestion of the material; animal experiments indicate that ingestion of less than 40 gram may be fatal or may produce serious damage to the health of the individual. The substance and/or its metabolites may bind to haemoglobin inhibiting normal uptake of oxygen. This condition, known as "methaemoglobinemia", is a form of oxygen starvation (anoxia). Symptoms include cyanosis (a bluish discolouration skin and mucous membranes) and breathing difficulties. Symptoms may not be evident until several hours after exposure. At about 15% concentration of blood methaemoglobin there is observable cyanosis of the lips, nose and earlobes. Symptoms may be absent although euphoria, flushed face and headache are commonly experienced. At 25-40%, cyanosis is marked but little disability occurs other than that produced on physical exertion. At 40-60%, symptoms include weakness, dizziness, lightheadedness, increasingly severe

MATERIAL SAFETY DATA SHEET

2-Aminobenzotrifluoride

Revision Date: 20-06-22

Revision Number: 5.1

	<p>headache, ataxia, rapid shallow respiration, drowsiness, nausea, vomiting, confusion, lethargy and stupor. Above 60% symptoms include dyspnea, respiratory depression, tachycardia or bradycardia, and convulsions. Levels exceeding 70% may be fatal.</p> <ul style="list-style-type: none"> Aromatic nitriles, unlike aliphatic nitriles, do not appear to liberate cyanide within the body
Skin Contact	<p>Skin contact with the material may produce toxic effects; systemic effects may result following absorption</p> <ul style="list-style-type: none"> This material can cause inflammation of the skin on contact in some persons The material may accentuate any pre-existing dermatitis condition Open cuts, abraded or irritated skin should not be exposed to this material Entry into the blood-stream, through, for example, cuts, abrasions or lesions, may produce systemic injury with harmful effects Examine the skin prior to the use of the material and ensure that any external damage is suitably protected
Eye	<ul style="list-style-type: none"> If applied to the eyes, this material causes severe eye damage
Chronic	<ul style="list-style-type: none"> Chronic exposure of the related product, 3-aminobenzotrifluoride produced dystrophic changes in the brain cells, liver, kidney and lungs of rats. Repeated or long-term occupational exposure is likely to produce cumulative health effects involving organs or biochemical systems. Long-term exposure to respiratory irritants may result in airways disease, involving difficulty breathing and related whole-body problems. Most arylamines are very toxic to the blood cell-forming system, and they produce methaemoglobinaemia in humans. High doses congest the spleen and then cause formation of sarcomas (a type of malignant tumour)

2-AMINO BENZOTRIFLUORIDE	TOXICITY	IRRITATION
	Not Available	Not Available
Legend:	<p>1. Value obtained from Europe ECHA Registered Substances - Acute toxicity</p> <p>2. Value obtained from manufacturer's SDS. Unless otherwise specified data extracted from RTECS - Register of Toxic Effect of chemical Substances</p>	

2-AMINO BENZOTRIFLUORIDE	<p>Asthma-like symptoms may continue for months or even years after exposure to the material ends. This may be due to a non- allergic condition known as reactive airways dysfunction syndrome (RADS) which can occur after exposure to high levels of highly irritating compound. Main criteria for diagnosing RADS include the absence of previous airways disease in a non-atopic individual, with sudden onset of persistent asthma-like symptoms within minutes to hours of a documented exposure to the irritant. Other criteria for diagnosis of RADS include a reversible airflow pattern on lung function tests, moderate to severe bronchial hyperreactivity on methacholine challenge testing, and the lack of minimal lymphocytic inflammation, without eosinophilia. RADS (or asthma) following an irritating inhalation is an infrequent disorder with rates related to the concentration of and duration of exposure to the irritating substance. On the other hand, industrial bronchitis is a disorder that occurs as a result of exposure due to high concentrations of irritating substance (often particles) and is completely reversible after exposure ceases. The disorder is characterized by difficulty breathing, cough and mucus production.</p> <p>No significant acute toxicological data identified in literature search</p>
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Acute Toxicity	✓	Carcinogenicity	✗
Skin Irritation/Corrosion	✓	Reproductivity	✗
Serious Eye Damage/Irritation	✓	STOT - Single Exposure	✓
Respiratory or Skin sensitisation	✗	STOT - Repeated Exposure	✓
Mutagenicity	✗	Aspiration Hazard	✗
Legend: ✗ – Data either not available or does not fill the criteria for classification ✓ – Data available to make classification			

SECTION 12 Ecological information

Toxicity

	End Point	Test Duration (hr.)	Species	Value	Source
2-AMINO BENZOTRIFLUORIDE	EC50(ECx)	24h	Crustacea	10mg/l	2
	LC50	96h	Fish	>25<35mg/l	2
	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				

log P 2.41 Henry's Law Constant: 1.65E-005 atm-m³/mole, 25 C Atmospheric OH Rate

Constant: 2.164E-011 cm³/molecule-sec Toxic to aquatic organisms.

Do NOT allow product to come in contact with surface waters or to intertidal areas below the mean high water mark. Do not contaminate water when cleaning equipment or disposing of equipment wash-waters

Wastes resulting from use of the product must be disposed of on site or at approved waste sites. May cause long-term adverse effects in the aquatic environment.

For Arylamines (Aromatic Amines):

Aquatic Fate - Arylamines, particularly aromatic amines, irreversibly bind with humic substances present in most natural waters. The estimated half-life of aromatic amines in water is approximately 100 days.

Ecotoxicity: Anilines, benzidines and toluidines are of environmental concern. Anilines and benzidines are both acutely toxic and toxic depending on the specific aquatic species (except algae). Toluidines represent a similar concern, It has been speculated that aqueous solutions of aromatic amines can be oxidized by organic radicals. The estimated half-life of aromatic amines in water is approximately 100 days.

DO NOT discharge into sewer or waterways

Persistence and degradability

Ingredient	Persistence: Water/Soil	Persistence: Air
2-Aminobenzotrifluoride	High	High

Bio accumulative potential

Ingredient	Bioaccumulation
2-Aminobenzotrifluoride	Low (Log KOW = 2.41)

Mobility in soil

Ingredient	Mobility
2-Aminobenzotrifluoride	LOW (Log KOC = 326.2)



SECTION 13 Disposal considerations

Waste treatment methods

Product / Packaging disposal	<ul style="list-style-type: none"> Containers may still present a chemical hazard/ danger when empty Return to supplier for reuse/ recycling if possible. <p>Otherwise:</p> <ul style="list-style-type: none"> If container cannot be cleaned sufficiently well to ensure that residuals do not remain or if the container cannot be used to store the same product, then puncture containers, to prevent re-use, and bury at an authorised landfill Where possible retain label warnings and SDS and observe all notices pertaining to the product <p>Legislation addressing waste disposal requirements may differ by country, state and/ or territory. Each user must refer to laws operating in their area. In some areas, certain wastes must be tracked.</p> <p>A Hierarchy of Controls seems to be common - the user should investigate:</p> <ul style="list-style-type: none"> Reduction Reuse Recycling Disposal (if all else fails) <p>This material may be recycled if unused, or if it has not been contaminated so as to make it unsuitable for its intended use. Shelf life considerations should also be applied in making decisions of this type. Note that properties of a material may change in use, and recycling or reuse may not always be appropriate. In most instances the supplier of the material should be consulted.</p> <ul style="list-style-type: none"> DO NOT allow wash water from cleaning or process equipment to enter drains It may be necessary to collect all wash water for treatment before disposal In all cases disposal to sewer may be subject to local laws and regulations and these should be considered first. Where in doubt contact the responsible authority Recycle wherever possible or Consult manufacturer for recycling options or consult local or regional waste management authority for disposal if no suitable treatment or disposal facility can be identified. Bury or incinerate residue at an approved site. Recycle containers if possible, or dispose of in an authorised landfill.
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SECTION 14 Transport information

Labels Required

	
Marine Pollutant	

Land transport (UN)

14.1. UN number or ID number	2942	
14.2. UN proper shipping name	2-TRIFLUOROMETHYLANILINE	
14.3. Transport hazard class(es)	Class	6.1
	Subsidiary Hazard	Not Applicable
14.4. Packing group	III	
14.5. Environmental hazard	Environmentally hazardous	
	Special Provisions	Not Applicable

14.6. Special precautions for user	Limited Quality	5 L
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Air transport (ICAO-IATA / DGR)

14.1. UN number	2942	
14.2. UN proper shipping name	2-Trifluoromethylaniline	
14.3. Transport hazard class(es)	ICAO/IATA Class	6.1
	ICAO / IATA Subsidiary Hazard	Not Applicable
	ERG Code	6L
14.4. Packing group	III	
14.5. Environmental hazard	Environmentally hazardous	
14.6. Special precautions for user	Special provisions	Not Applicable
	Cargo Only Packing Instructions	663
	Cargo Only Maximum Qty / Pack	220 L
	Passenger and Cargo Packing Instructions	655
	Passenger and Cargo Maximum Qty / Pack	60 L
	Passenger and Cargo Limited Quantity Packing Instructions	Y642
	Passenger and Cargo Limited Maximum Qty / Pack	2 L

Sea transport (IMDG-Code/ GGVSee)

14.1. UN number	2942	
14.2. UN proper shipping name	2-TRIFLUOROMETHYLANILINE	
14.3. Transport hazard class(es)	IMDG Class	6.1
	IMDG Subsidiary Hazard	Not Applicable
14.4. Packing group	III	
14.5. Environmental hazard	Marine Pollutant	
14.6. Special precautions for user	EMS Number	F-A , S-A
	Special provisions	Not Applicable
	Limited Quantities	5 L

14.7 Maritime transport in bulk according to IMO instruments

14.7.1 Transport in bulk in accordance to Annex II of MARPOL and the IBC Code

Product Name	Group
2-Aminobenzotrifluoride	Not Available

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

Product Name	Ship Type
2-Aminobenzotrifluoride	Not Available

14.7.3 Transport in bulk in accordance with the IGC Code

Product Name	Ship Type
2-Aminobenzotrifluoride	Not Available

SECTION 15 Regulatory information

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

2-Aminobenzotrifluoride is found on the following lists

Not Applicable

Additional Regulatory Information

Not Applicable

National Inventory Status

National Inventory	Status
Australia - AIIIC / Australia Non-Industrial Use	No (2-Aminobenzotrifluoride)
Canada - DSL	No (2-Aminobenzotrifluoride)

Canada - NDSL	Yes
China - IECSC	Yes
Europe - EINEC / ELINCS / NLP	Yes
Japan - ENCS	Yes
Korea - KECI	No (2-Aminobenzotrifluoride)
New Zealand - NZIoC	Yes
Philippines - PICCS	Yes
USA - TSCA	All chemical substances in this product have been designated as TSCA Inventory 'Active'
Taiwan - TCSI	Yes
Mexico - INSQ	Yes
Vietnam - NCI	Yes
Russia - FBEPH	No (2-Aminobenzotrifluoride)
Legend:	<p>Yes = All CAS declared ingredients are on the inventory</p> <p>No = One or more of the CAS listed ingredients are not on the inventory. These ingredients may be exempt or will require registration.</p>

SECTION 16 Other information

Revision Date	20/06/2022
Initial Date	12/05/2005

SDS Revision Summary

Revision	Date of Update	Section Update
5.1	20/06/2022	Expiration. Review and Update

Other information

Classification of the preparation and its individual components has drawn on official and authoritative sources.

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.

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: Bio Concentration Factors

BEI: Biological Exposure Index

DNEL: Derived No-Effect Level

PNEC: Predicted no-effect concentration

MARPOL: International Convention for the Prevention of Pollution from Ships

IMSBC: International Maritime Solid Bulk Cargoes Code

IGC: International Gas Carrier Code

IBC: International Bulk Chemical Code

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

This Material Safety Data Sheet (MSDS) has been prepared in accordance with our company standards and is intended solely for the use of trained personnel. The information provided herein is believed to be accurate as of the date of issue, but no warranty, express or implied, is made regarding its accuracy, completeness, or suitability for any particular purpose. The user is responsible for ensuring safe conditions and compliance with applicable laws and regulations.