

Apollo Scientific

Part Number: **PC302376** Version No: **1.2** Safety Data Sheet Chemwatch Hazard Alert Code: 2

Issue Date: **26/05/2023** Print Date: **26/05/2023** S.GHS.GB-NIR.EN

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

Product Identifier

| Product name | ,4-Difluoro-3-methoxyphenylacetic acid | |
|----------------------------------|-----------------------------------------|--|
| Chemical Name | 2,4-Difluoro-3-methoxyphenylacetic acid | |
| Synonyms | Not Available | |
| Other means of identification | Not Available | |
| CAS number | 886499-32-7* | |

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

| Relevant identified uses | Not Available |
|--------------------------|---------------|
|--------------------------|---------------|

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 Not Available SK6 2QR United Kingdom (NI) | |
| Telephone | 01614060505 | +44(0) 161 406 0505 | |
| Fax | 0161 406 0506 | Not Available | |
| Website | ite 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] | H335 - Specific Target Organ Toxicity - Single Exposure (Respiratory Tract Irritation) Category 3, H315 - Skin Corrosion/Irritation Category 2, H319 - Serious Eye Damage/Eye Irritation Category 2 |
|-------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 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)

| H335 | May cause respiratory irritation. |
|------|-----------------------------------|
| H315 | Causes skin irritation. |
| H319 | Causes serious eye irritation. |

Precautionary statement(s) Prevention

| P271 | Use only outdoors or in a well-ventilated area. |
|------|----------------------------------------------------------------------------------|
| P261 | Avoid breathing dust/fumes. |
| P280 | Wear protective gloves, protective clothing, eye protection and face protection. |
| P264 | Wash all exposed external body areas thoroughly after handling. |

Precautionary statement(s) Response

| P305+P351+P338 | IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. |
|----------------|----------------------------------------------------------------------------------------------------------------------------------|
| P312 | Call a POISON CENTER/doctor/physician/first aider/if you feel unwell. |
| P337+P313 | If eye irritation persists: Get medical advice/attention. |
| P302+P352 | IF ON SKIN: Wash with plenty of water. |
| P304+P340 | IF INHALED: Remove person to fresh air and keep comfortable for breathing. |
| P332+P313 | If skin irritation occurs: Get medical advice/attention. |
| P362+P364 | Take off contaminated clothing and wash it before reuse. |

Precautionary statement(s) Storage

| P405 | Store locked up. |
|-----------|------------------------------------------------------------------|
| P403+P233 | Store in a well-ventilated place. Keep container tightly closed. |

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 |
|---------------|-----------|------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|
| Not Available | 100 | 2.4-Difluoro- 3-methoxyphenylacetic acid | Specific Target Organ Toxicity - Single Exposure (Respiratory Tract Irritation) Category 3 , Skin Corrosion/Irritation Category 2, Serious Eye Damage/Eye Irritation Category 2; H335, H315, H319 ^[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 the eyes: • Wash out immediately with fresh 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. Seek medical attention without delay; if pain persists or recurs 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. |
|----------------------|-------------|
| | |

Advice for firefighters

| 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. 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 | Clean up all spills immediately. Avoid breathing dust and contact with skin and eyes. Wear protective clothing, gloves, safety glasses and dust respirator. Use dry clean up procedures and avoid generating dust. Sweep up, shovel up or Vacuum up (consider explosion-proof machines designed to be grounded during storage and use). Place spilled material in clean, dry, sealable, labelled container. |
|--------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Major Spills | Moderate hazard. CAUTION: Advise personnel in area. Alert Emergency Services and tell them location and nature of hazard. |

| Control personal contact by wearing protective clothing. Prevent, by any means available, spillage from entering drains or water courses. |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Recover product wherever possible. IF DRY: Use dry clean up procedures and avoid generating dust. Collect residues and place in sealed plastic bags or other containers for disposal. IF WET: Vacuum/shovel up and place in labelled containers for disposal. |
| ALWAYS: Wash area down with large amounts of water and prevent runoff into drains. 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 | 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 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. |
|-------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Other information | 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 | 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 |
|---------------------------------------------|---------------|---------------|---------------|
| 2,4-Difluoro- 3-methoxyphenylacetic acid | Not Available | Not Available | Not Available |

Original IDLH

| Ingredient | Original IDLH | Revised IDLH |
|---------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|
| 2,4-Difluoro- 3-methoxyphenylacetic acid | Not Available | Not Available |
| | | |
| Exposure controls | | |
| Exposure controls | Engineering controls are used to remove a hazard or place a bar engineering controls can be highly effective in protecting workers provide this high level of protection. The basic types of engineering controls are: | 5 |

Process controls which involve changing the way a job activity or process is done to reduce the risk.

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.

- Local exhaust ventilation is required where solids are handled as powders or crystals; even when particulates are relatively large, a certain proportion will be powdered by mutual friction.
- If in spite of local exhaust an adverse concentration of the substance in air could occur, respiratory protection should be considered.

Such protection might consist of:

- (a): particle dust respirators, if necessary, combined with an absorption cartridge;
- (b): filter respirators with absorption cartridge or canister of the right type;
- (c): fresh-air hoods or masks.

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.

| Type of Contaminant: | Air Speed: |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------|
| 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 f/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 f/min.) |

Within 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 f/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

Appropriate engineering

control



Safety glasses with side shields.

- Chemical goggles.
- 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], [AS/NZS 1336 or national equivalent]

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. 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.

The exact break through time for substances has to be obtained from the manufacturer of the protective gloves and has to be

| Personal Program End Geo Standard Control Standard Contrecontrol Standard Control Standard Control Standard Con | | observed when making a final choice. |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------|--------------------------------------|
| should be vashed and drad thoroughly. Application of a non-perfured moisturise is recommended. Situibility and duration of contact. Henumany and duration of contact may occur. a glow with a protection diss of 5 or higher (breakthrough time greater than 20 minutes according to EN 374. ANXES 2161.10 or national equivalent) is recommended. When only bird contact is expected. a glow with a protection diss of 5 or higher (breakthrough time greater than 20 minutes according to EN 374. ANXES 2161.10 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. Some glove motion glove sist in a cost of the cost of the solut be replaced. For general applications, gloves with a thickness typically greater than 0.55 mm, are recommended. Henumany allow and power solut be replaced. For general applications, gloves with a thickness typically greater than 0.55 mm, are recommended. Henumany allow and power solut be replaced as a solut be expected as allow emany accurs, a glove predictor of glove model. Therefore, the manufacturers technical data should always be taken into account to exect composition of the glove model. Therefore, the manufacturers technical data should always be taken into account to expectical. Therefore, plove solves there always any alway and perify or contact, gloves alow any diglove point and glove predictions. Here always | | |
| Suitability and durability of give type is dependent on usage. Important factors in the selection of gives include: requence; and duration of contract. chemical resistance of gives material. divertify: Select gives tested to a relevant standard (e.g. Europe EN 374, US F739, ASNZS 2161.1 or national equivalent). When prolonged or frequently repeated contact may occur, a give with a protection class of 5 or higher (breakthrough time greater than 240 minutes according to EN 374, ASNZS 2161.10.1 or national equivalent) is recommended. When only bird contact is expected. a give with a protection class of 5 or higher (breakthrough time greater than 240 minutes according to EN 374, ASNZS 2161.10.1 or national equivalent) is recommended. When only bird contact is expected. Schellen the TATM F739-98 in any seplication, gives are rated as: Excellent when breakthrough time > 20 min Good when breakthrough time > 20 min For when gives material digrades For or when gives material, digraded as thore accurate gives endered. Therefore, the manufactures technical data thould alway be taken into account to ensu especific chemical, as the permetation efficiency of the give with a protection as of variant the standard for the start experiments and thore start exponsition of the give wither solution and would be replaced. Note: Depending on the give with diverse there and sinks about the give selection also as based on consideration of the task requirements and knowledge or breakthrough times. For when gives and the give band that give with a protection das of the meet appropriate gives for the task. | | |
| Integration of contact. <l< th=""><th></th><th></th></l<> | | |
| chemical resistance of glove material, glove thickness and dxterity: Select gloves tested to a relevant standard (e.g. Europe EN 374, US F739, ASAZS 2161.1 or national equivalent). 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, ASNZS 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 are less affected by movement and this should be taken into account when considering gloves for long-term use. Contaminated gloves are astificated by movement and this should be taken into account when considering gloves for long-term use. Contaminated gloves material agreades For othen glove material agreades For othen glove material agreades For othen glove material agreades For general applications, gloves with a thickness typically greater than 0.35 mm, are recommended. thould be omphasized 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 agreades Rever gloves (glove) to 1 mm or less) may be required where a high degree of breakthrough times, service should always be taken into account the glove model. Therefore, the manufacturers technical data the permeation efficiency of the glove will be dependent on the exact composition of the glove model. Therefore, the divers are glove as manufacturers technical data should always be taken into account mentage specific tasits. For exa | | |
| given thickness and | | |
| • deterity Select gives tested to a relevant standard (e.g. Europe EN 374, US F739, ASIN2S 2161.1 or national equivalent), • 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, ASIN2S 2161.10.1 or national equivalent) is recommended. • Some glove opymer 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. R defined in ASTM F739-96 in any application, gloves are rated as: • Excellent when breakthrough time > 420 min • Fair when breakthrough time > 420 min • Fair when breakthrough time > 20 min • Fair when breakthrough time > 20 min • Fair when breakthrough time > 20 min • Bood when threakthrough time > 20 min • Bood when breakthrough time > 20 min • Bood when breakthrough time > 20 min • Contaminated gloves should be replaced. R defined in SINK F739-96 in any applications, gloves are rated as: • Grove thickness may also vary depending on the exact composition of the stant to prove metal. • Boor when glove material degrades For general applications, gloves with a thickness typically greater than 0.35 mm, are recommended. I staduid be based on consister technic datasta trequirements and knowledge of breakthrough time scan and towhe | | - |
| Select jones tested to a relevant standard (e.g. Europe EN 374, US F739, ASN25 2161.1 or national equivalent). When only brief contact is expected, a glove with a protection class of 5 or higher (breakthrough time greater than 240 minutes according to EN 374, ASN25 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, ASN25 2161.10.1 or national equivalent) is recommended. . Gortaminated gloves should be replaced. As defined in ASTM F739-96 in any application, gloves are rated as: . Excellent when breakthrough time > 480 min 6 ord when breakthrough time > 20 min . For when glove metarial degrades For or when gloves with a thickness typically greater than 0.35 mm, are recommended. It should be emphasised that glove with a thickness typically greater than 0.35 mm, are recommended. It should be emphasised that glove thickness that or annulacturer, the glove material. Therefore, glove selection should also be based on consideration of the task requirements and knowledge of breakthrough times. Glove thickness may also vary depending on the equive multicurer, the glove multical charges may be required thor specific tasks. For example: . Thinner gloves (Glova to 11 mor less) may be required where there is a hermical (as well as a chemical) risk i.e. where there is gloves should be washed and dried thoroughy. Application glove for the task. Note: Depending on the eativity being conducted, gloves of varying thickness may be required thore specin tasks. For example: <tr< th=""><th></th><th>-</th></tr<> | | - |
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| greater than 240 minutes according to EN 374, ASNZS 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, ASNZS 2161.10.1 or national equivalent) is recommended. • Some glove polymer types are less allected by movement and this should be taken into account when considering gloves for long-term use. • Contaminated gloves should be replaced. As defined in ASTM F-739-96 in any application, gloves are rated as: • Excellent when breakthrough time > 20 min • Fair when breakthrough time > 20 min • Poor when glove material degrades For general applications, gloves with a thickness typically greater than 0.35 mm, are recommended. It should be emphasised that glove thickness is not necessarily a good predictor of glove resistance to a specific chemical, as the permeation efficiency of the glove mile about always be taken into account to ensure selection of the dive with the should bars be absed on consideration of the task requirements and knowledge of breakthrough times. Glove thickness may also vary depending on the glove manufacturer, the glove based on consideration of the task requirements and knowledge of the soletake. Note: Depending on the activity being conducted, gloves of varying thickness may be required for specific tasks. For example: • Thinner gloves (your to 1 mor rises) may be required where a hing heare of manufacturer, the gloves must only leak to give with a divino duratinaly be just for single us a pplications, then disposed o | | |
| • When only brief contact is expected, a glove with a protection class of 20 higher (freakthrough time greater than 60 minutes according to EN 374, AS/NZS 21611.0.1 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. As defined in ASTM F-739-96 in any application, gloves are rated as: • Excellent when breakthrough time > 20 min • Good when breakthrough time > 20 min • Poor when glove motival digordes For general applications, gloves with a thickness typically greater than 0.35 mm, are recommended. It should be emphasized that glove thickness is in chacessarily a good predictor of glove resistance to a specific chemical, as the permeation efficiency of the glove mill be dependent on the exact composition of the glove motel. Therefore, the manufactures technical data should always be taken into account to ensult expecific task. For example: • Thinker gloves (up to 3 mm or more) may be required where a high degree of manual dexterity is needed. However, these gloves are not player followers. The following being conducted, gloves of varying thickness may also could normally be just for single us applications, the resumption of a software there is a mechanical (as well as a chemical) risk i.e. where there is a arcsion or putture potential Glove thickness thould be on obean hands. After using gloves, hands should be washed and dried thoroughly. Application of a non-perfumed molitaties is recommended. • Thicker gloves (up to 3 mm or more) may be required w | | |
| according to EN 374, ASN25 2161 10.1 cm rational 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. As defined in ASTM F-739-bit nany application, gloves are rated as: Excellent when breakthrough time > 400 min Good when breakthrough time > 20 min For own glove material degrades For own glove material abplications, gloves with a thickness typically greater than 0.35 mm, are recommended. It should be emphasized that glove thickness is not necessarily a good predictor of glove material. Therefore, the manufacturer, the glove glove will be dependent on the exact composition of the glove material. Therefore, the Bolove thickness may also vary depending on the glove material. Therefore, the Stove thickness may also vary depending on the glove material. Therefore, the manufacturer, the glove glowe on the task. Note: Depending on the alove account to ensure selection of the maxet appropriate glove for the task. Note: Depending on the activity being conducted, gloves of varaning thickness may be required where a high | | |
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| Image term use. • Contaminated gloves should be replaced. As defined in ASTM F-739-96 in any application, gloves are rated as: • Excellent when breakthrough time > 480 min • Contaminated gloves with at hickness typically greater than 0.35 mm, are recommended. • Fair when breakthrough time > 20 min • Fair when breakthrough time > 20 min • Fair when breakthrough time > 20 min • For general applications, gloves with at hickness typically greater than 0.35 mm, are recommended. 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 dependent on the exact composition of the glove material. Therefore, the manufacturer schnical data should always be taken into account to ensure selection of the moutes appropriate gloves for 10 mol tess. • Object thickness may also vary depending on the glove withe activity being conducted, gloves of varying thickness may be required to respecific tasks. For example: • Thinker gloves (but to 1.1 mm or less) be taken into account to ensure selection of the moutes appropriate glove for the task. Note: Depending on the activity being conducted, gloves of varying thickness may be required for specific tasks. For example: • Thinker gloves (but to 1.1 mm or less) may be required where a high degree of manufacturer, the see gloves are only likely to give short duration protection and would normally be just for single use applications, then disposed of. • Thinker gloves (but to 1.1 mm or less) respective there is a mechanical (as well as a chemical) risk i.e. where there is a barcisn or | | |
| • Contaminated gloves should be replaced. As defined in ASTM F-739-96 bit any application, gloves are rated as: • Excellent when breakthrough time > 20 min • For when breakthrough time > 20 min • For when breakthrough time > 20 min • For when breakthrough time > 20 min • Por when glove material degrades For general applications, gloves with a 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. 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 on ensure selection of the most appropriate glove for the task. Note: Depending on the activity being conducted, gloves of varying thickness may be required for specific tasks. For example: • Thinner gloves (down to 0.1 mm or less) may be required where there is a mechanical (as well as a chemical) risk i.e. where there is abrasion or puncture potential Gloves must only be worm on clean hands. After using gloves, hands should be washed and dried thoroughly. Application of a non-pertumed moisturiser is recommended. Experience indicates that the following polymers are suitable as glove materials for protection against undissolved, dry solids, where abrasive particles en ont present. • polychloroprene. • hithig rubber. • hotyly fubber. • hotyly fubber. • polychloroprene. • hithig rubber. • polychloroprene. • hithig rubber. • byly in lobe. • Diversals be as one or one appresent. • polychloroprene. • hithig rubber. • polychloroprene. • hithig rubber. • byly in lobe. • Cloves should be examined for wear and/ or degradation constant | | |
| As defined in ASTM F-739-96 in any application, gloves are rated as: | | |
| Excellent when breakthrough time > 480 min Good when breakthrough time > 20 min Fair when breakthrough time > 20 min For when glove material degrades For general applications, gloves with a tickness typically greater than 0.35 mm, are recommended. It should be emphasised 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. Glove thickness may also vary depending on the gloves of varying thickness may be required for specific tasks. For example: Thinner gloves (down to 0.1 mm or less) may be required where a high degree of manual dexterpt 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. Thinker gloves (up to 3 mm or more) may be required where a high degree of manual dexterpt 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 a high degree of manual dexterpt is needed. However, these shorts and knowledge of the state the fore is a barsion or puncture potential Gloves must only be wom on clean hands. After using gloves, hands should be washed and dried thoroughly. Application of a non-perfumed moisturiser is recommended. Experience indicates that the following polymers are suitable as glove materials for protection against undissolved, dry solids, where a braisive particles are not present. Polychloroprene. huttif ubber. buty rubber. buty rubber. buty rubber. buty | | |
| • Good when breakthrough time > 20 min • Fair when preakthrough time < 20 min • Poor when glove material degrades For general applications, gloves with a thickness typically greater than 0.35 mm, are recommended. It should be emphasised that glove thickness is not necessarily agod predictor of glove material. Therefore, glove selection should also be based on consideration 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 slove expression and knowledge of breakthrough times. Glove thickness may also vary depending on the glove manufacturer, the glove material. Therefore, the manufacturers technical data should always be taken into account to ensure selection of the most appricate glove for the task. Note: Depending on the activity being conducted, gloves of vaning thickness may be required hore many of the most apprications, then disposed of. • Thinner gloves (down to 0.1 mm or less) may be required where there is a mechanical (as well as a chemical) risk i.e. where there is abrasion or puncture potential. 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. Experimenci indicates that the following polymers are suitable as glove materials for protection against undissolved, dry solids, where abrasive particles are not present. • polychioroprene. • polychioroprene. • thit if ubber. • butyl rubber. • butyl rubber. • butyl rubber. | | |
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| For general applications, gloves with a thickness typically greater than 0.35 mm, are recommended. It should be emphasised 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. Glove thickness may also vary depending on the glove manufacturer, the glove tipe and the glove most appropriate glove for the task. Note: Depending on the activity being conducted, gloves of varying thickness may be required for specific tasks. For example: - Thinker 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, there there is abrasion or puncture potential Gloves thus on puncture potential 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. Experience indicates that the following polymers are suitable as glove materials for protection against undissolved, dry solids, where abrasive particles are not present. | | 5 |
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| Note: Depending on the activity being conducted, gloves of varying thickness may be required for specific tasks. For example: 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 a barasion or puncture potential 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. Experience indicates that the following polymers are suitable as glove materials for protection against undissolved, dry solids, where abrasive particles are not present. polychloroprene. initrile rubber. butyl rubce. gloves should be examined for wear and/ or degradation constantly. Body protection See Other protection below Other protection Barrier cream. Skin cleansing cream. Skin cleansing cream. | | |
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| • 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 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. Experience indicates that the following polymers are suitable as glove materials for protection against undissolved, dry solids, where abrasive particles are not present. • polychloroprene. • nitrile rubber. • fluorocaoutchouc. • polyvinyl chloride. Gloves should be examined for wear and/ or degradation constantly. Body protection See Other protection below • Overalls. • P.V.C apron. • Barrier cream. • Skin cleansing cream. | | |
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| Other protection P.V.C apron. Barrier cream. Skin cleansing cream. | | |
| Other protection P.V.C apron. Barrier cream. Skin cleansing cream. | Body protection | See Other protection below |
| Other protection P.V.C apron. Barrier cream. Skin cleansing cream. | | |
| Other protection • Barrier cream. • Skin cleansing cream. | | |
| Skin cleansing cream. | | |
| | Other protection | |
| Eye wash unit. | | |
| | | r Eye wash 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 |

SECTION 11 Toxicological information

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 | This material can cause eye irritation and damage in some persons. |
| 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

| Acute Toxicity | × | Carcinogenicity | × |
|--------------------------------------|----------|--------------------------|---|
| Skin Irritation/Corrosion | ¥ | Reproductivity | × |
| Serious Eye Damage/Irritation | v | STOT - Single Exposure | * |
| Respiratory or Skin sensitisation | × | STOT - Repeated Exposure | × |
| Mutagenicity | × | Aspiration Hazard | × |

```
    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 | /aste 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): NOT 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 |
|---------------------------------------------|---------------|
| 2,4-Difluoro- 3-methoxyphenylacetic acid | Not Available |

Transport in bulk in accordance with the IGC Code

| Product name | Ship Type |
|---------------------------------------------|---------------|
| 2,4-Difluoro- 3-methoxyphenylacetic acid | Not Available |

SECTION 15 Regulatory information

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

National Inventory Status

| National Inventory | Status |
|----------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Australia - AIIC / Australia Non-Industrial Use | No (2,4-Difluoro-3-methoxyphenylacetic acid) |
| Canada - DSL | No (2,4-Difluoro-3-methoxyphenylacetic acid) |
| Canada - NDSL | No (2,4-Difluoro-3-methoxyphenylacetic acid) |
| China - IECSC | No (2,4-Difluoro-3-methoxyphenylacetic acid) |
| Europe - EINEC / ELINCS / NLP | No (2,4-Difluoro-3-methoxyphenylacetic acid) |
| Japan - ENCS | No (2,4-Difluoro-3-methoxyphenylacetic acid) |
| Korea - KECI | No (2,4-Difluoro-3-methoxyphenylacetic acid) |
| New Zealand - NZIoC | No (2,4-Difluoro-3-methoxyphenylacetic acid) |
| Philippines - PICCS | No (2,4-Difluoro-3-methoxyphenylacetic acid) |
| USA - TSCA | No (2,4-Difluoro-3-methoxyphenylacetic acid) |
| Taiwan - TCSI | No (2,4-Difluoro-3-methoxyphenylacetic acid) |
| Mexico - INSQ | No (2,4-Difluoro-3-methoxyphenylacetic acid) |
| Vietnam - NCI | No (2,4-Difluoro-3-methoxyphenylacetic acid) |
| Russia - FBEPH | No (2,4-Difluoro-3-methoxyphenylacetic acid) |
| 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 | 26/05/2023 |
|---------------|------------|
| Initial Date | 26/05/2023 |

SDS Version Summary

| Version Date of Update | Sections Updated |
|------------------------|------------------|
|------------------------|------------------|

| Version | Date of Update | Sections Updated |
|---------|-------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 0.2 | 26/05/2023 | Hazards identification - Classification, Composition / information on ingredients - Ingredients, 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 |
|-----------------------------------------------------------------------------------------------------------|--------------------------|
| Specific Target Organ Toxicity - Single Exposure (Respiratory Tract Irritation) Category 3, H335 | Expert judgement |
| Skin Corrosion/Irritation Category 2, H315 | Expert judgement |
| Serious Eye Damage/Eye Irritation Category 2, H319 | Expert judgement |

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