1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1. Identification of the product

Substance name:
REACH Registration Name: Methanesulphonyl chloride
REACH Registration Number: 01-2119486466-25-0001
EC Nr: 204-706-1
CAS-No.: 124-63-0

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

Use of the Substance/Mixture : Chemical intermediate, Pesticide industry., Pharmaceutical industry, photographic chemical
The substance is registered as an isolated intermediate with strictly controlled conditions as defined in Article 18(4) of Regulation EC No. 1907/2006 and must therefore be handled as such.

1.3. Details of the supplier of the safety data sheet

Supplier	Arkema THIOCHIMIE 420 rue d'Estienne d'Orves 92705 Colombes Cedex, France Téléphone : +33 (0)1 49 00 80 80 Télécopie : +33 (0)1 49 00 83 96 http://www.arkema.com
E-mail address	pars-drp-fds@arkema.com

1.4. Emergency telephone number

+33 1 49 00 77 77
European emergency phone number : 112

2. HAZARDS IDENTIFICATION

2.1. Classification of the substance or mixture

Classification (Regulation (EC) No 1272/2008):
Oral: Acute toxicity, 3, H301
Dermal: Acute toxicity, 3, H311
Inhalation: Acute toxicity, 1, H330
Skin corrosion, 1B, H314
Serious eye damage, 1, H318
Skin sensitization, 1A, H317
Inhalation: Specific target organ toxicity - single exposure, 3, H335

Classification (Directive 67/548/EEC):

T+; R26
C; R34
Xn; R21/22
Xi; R43

Additional information:
For the full text of the R, H, EUH-phrases mentioned in this Section, see Section 16.

2.2. Label elements

Label elements (REGULATION (EC) No 1272/2008):

Hazardous components which must be listed on the label:

CAS-No. : 124-63-0 Methanesulphonyl chloride

Hazard pictograms:

Signal word: **Danger**

Hazard statements:
H301 : Toxic if swallowed.
H311 : Toxic in contact with skin.
H330 : Fatal if inhaled.
H314 : Causes severe skin burns and eye damage.
H317 : May cause an allergic skin reaction.
H335 : May cause respiratory irritation.

Precautionary statements:
Prevention:
P260 : Do not breathe gas/mist/vapours/spray.
P280 : Wear protective gloves/ protective clothing/ eye protection/ face protection.
P284 : Wear respiratory protection.
Response:
P304 + P340 : IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
P303 + P361 + P353 : IF ON SKIN (or hair): Remove/ Take off immediately all contaminated clothing. Rinse skin with water/ shower.
P305 + P351 + P338 : IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P310 : Immediately call a POISON CENTER or doctor/ physician.
Storage:
P403 + P233 : Store in a well-ventilated place. Keep container tightly closed.

2.3. Other hazards

Potential health effects:

Very toxic by inhalation. Toxic in contact with skin. Toxic if swallowed. Causes burns. May cause sensitization by skin contact. Irritating to respiratory system.

Environmental Effects:
Harmful to aquatic fauna. Harmful to aquatic flora.

Physical and chemical hazards:
Thermal decomposition giving toxic products
Decomposition products: See chapter 10

Other:
Results of PBT and vPvB assessment : As defined in Article 18(4) of Regulation (EC) No. 1907/2006 (REACH Regulation), this substance is registered as an isolated intermediate. Therefore, the data is not required.

3. COMPOSITION/INFORMATION ON INGREDIENTS

3.1. Substances

Chemical name of the substance[1]: METHANESULFONYL CHLORIDE

Chemical Name[1]	EC-No.	CAS-No.	Concentration	Classification Directive 67/548/EEC	Classification Regulation (EC) No 1272/2008
Methanesulphonyl chloride	204-706-1	124-63-0	>= 99,7 %	T+; R26 C; R34 Xn; R21/22 Xi; R43	Acute Tox. 3 (Oral); H301 Acute Tox. 3 (Dermal); H311 Acute Tox. 1 (Inhalation); H330 Skin Corr. 1B; H314 Eye Dam. 1; H318 Skin Sens. 1A; H317 STOT SE 3 (Inhalation); H335

[1]: See chapter 14 for Proper Shipping Name

4. FIRST AID MEASURES

4.1. & 4.2. Description of necessary first-aid measures & Most important symptoms/effects, acute and delayed:

General advice:
Under the shower: Take off immediately all contaminated clothing (including shoes).

Inhalation:
Move to fresh air. Oxygen or artificial respiration if needed. Hospitalize immediately. Delayed effects possible

Skin contact:
Wash off immediately with plenty of water. Consult a doctor quickly. In case of extensive burns: Hospitalize immediately.

Eye contact:
Wash open eyes immediately, abundantly and thoroughly for at least 15 minutes. Consult an ophthalmologist immediately.

Ingestion:
Do not induce vomiting, rinse mouth and lips with plenty of water if the subject is conscious, then hospitalize.

Protection of first-aiders:
In case of insufficient ventilation, wear suitable respiratory equipment.

4.3.Indication of immediate medical attention and special treatment needed, if necessary : No data available.

5. FIREFIGHTING MEASURES

5.1.Extinguishing media

Suitable extinguishing media: Dry powder, Carbon dioxide (CO2)

Unsuitable extinguishing media: Water spray

5.2. Special hazards arising from the substance or mixture:

Thermal decomposition giving toxic and corrosive products :, Hydrogen chloride gas, Methanesulphonic acid, Sulphur oxides, Carbon oxides

5.3. Advice for firefighters:

Specific methods:
Containers/tanks should be cooled with water spray.

Special protective actions for fire-fighters:
In the event of fire, wear self-contained breathing apparatus. Acid resistant clothing.

6. ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures:

Evacuate non-essential staff and those not equipped with individual protection apparatus. Prohibit contact with skin and eyes and inhalation of vapours. Use personal protective equipment. In case of leak, wear a self-contained breathing apparatus.

6.2. Environmental precautions:

Do not release into the environment. Do not let product enter drains. Dam up with sand or inert earth (do not use combustible materials).

6.3. Methods and materials for containment and cleaning up:

Recovery:
Pump into a labelled inert emergency tank. Absorb the remainder with an inert absorbent material. Shovel into suitable container for disposal. After cleaning, flush away traces with water. Recover waste water for processing later.

Neutralisation:
Neutralize carefully with a dilute caustic soda solution.

Elimination:
Destroy the product by incineration (in accordance with local and national regulations).

6.4. Reference to other sections: None.

7. HANDLING AND STORAGE

7.1. Precautions for safe handling:

Technical measures/Precautions:

Storage and handling precautions applicable to products: VERY TOXIC. CORROSIVE. Sensitizing. lachrymatory. Provide appropriate exhaust ventilation at machinery. Provide showers, eye-baths. Provide water supplies near the point of use. Provide self-contained breathing apparatus nearby. Well ventilate empty vats and tanks before entering.

Safe handling advice:
Avoid splashing and emission of vapours when handling. Open drum carefully as content may be under pressure. Use product only in closed system.

Hygiene measures:
Prohibit contact with skin and eyes and inhalation of vapours. When using do not eat, drink or smoke.
Wash hands after handling. Remove contaminated clothing and protective equipment before entering eating areas.

7.2. Conditions for safe storage, including any incompatibilities:
Keep tightly closed in a dry, cool and well-ventilated place. Store protected from moisture and heat. Provide a catch-tank in a bunded area. Provide impermeable floor.

Incompatible products:
Water, Strong oxidizing agents, strong bases, Alcohols

Packaging material:
Recommended: Metal drums with internal polyethylene coating

7.3. Specific end uses:
This substance must be handled under strictly controlled conditions in accordance with REACH regulation Article 18(4) for on-site isolated intermediates. Written confirmation of application of strictly controlled conditions has been received from every Downstream User of the intermediate registered by Arkema.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Control parameters:

Exposure Limit Values

Methanesulphonyl chloride

Source	Date	Value type	Value (ppm)	Value (mg/m3)	Remarks
ARKEMA		STEL	0,1	–	Value recommended by the "Exposure Limit Value Committee" of ARKEMA

Derived No Effect Level (DNEL):
As defined in Article 18(4) of Regulation (EC) No. 1907/2006 (REACH Regulation), this substance is registered as an isolated intermediate. Therefore, the data is not required.

Predicted No Effect Concentration (PNEC):
As defined in Article 18(4) of Regulation (EC) No. 1907/2006 (REACH Regulation), this substance is registered as an isolated intermediate. Therefore, the data is not required.

8.2. Exposure controls:

General protective measures:
Provide appropriate exhaust ventilation at machinery.
Site documentation to support safe handling arrangements including the selection of engineering, administrative and personal protective equipment controls in accordance with risk-based management systems is available at each Manufacturing site.

Use material of high integrity for loading and unloading.
Investigate engineering techniques to reduce exposures.
Routine monitoring and inspections for leaks to reduce fugitive emissions.

Personal protective equipment:
Respiratory protection: In case of insufficient ventilation, wear suitable respiratory equipment. Provide self-contained breathing apparatus nearby. (First aid products available nearby).
High concentrations or prolonged activity: Self contained Breathing Apparatus
Hand protection: Acid resistant gloves (PVC, neoprene)
Eye/face protection: Safety glasses, Face-shield
Skin and body protection: Acid resistant clothing., Boots

Environmental exposure controls:
Do not release into the environment.
Use techniques to minimize emissions (incineration or any treatment to minimize level of release).

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

Appearance:	
Physical state (20°C):	liquid
Colour:	colourless, light yellow
Odour:	Irritant, lachrymatory.
Olfactory threshold:	No data available.
pH:	No data available.
Melting point/range :	-33 °C
Boiling point/boiling range :	159,4 °C
Flash point:	102 °C (open cup)
Evaporation rate:	No data available.
Flammability (solid, gas):	
Flammability:	not applicable
Vapour pressure:	6,8 hPa , at 20 °C
	8,9 hPa , at 25 °C
Vapour density:	No data available.
Density:	1.489 kg/m3 , at 20 °C
Relative density (Water=1):	1,49 at 20 °C
Water solubility:	insoluble, Hydrolyses slowly. at 20 °C
Partition coefficient: n-octanol/water:	log Kow : 1,27 , at 20 °C (calculated)
Autoignition temperature:	435 °C
Decomposition temperature:	No data available.
Viscosity, dynamic:	1,97 mPa.s , at 25 °C
Explosive properties:	
Explosivity:	Not relevant (due to the chemical structure)
Oxidizing properties:	Not relevant (due to the chemical structure)

9.2. Other data:

Solubility in other solvents:	Soluble in: Acetone , Ethyl ether
Surface tension:	72,5 mN/m at 21 °C
Molecular Weight:	114,55 g/mol
Refractive index:	1,452 at 20 °C

10. STABILITY AND REACTIVITY

10.1. & 10.2. Reactivity & Chemical stability:
The product is stable under normal handling and storage conditions.

10.3. Possibility of hazardous reactions:
At high temperature : Reacts violently with water.

10.4. Conditions to avoid:
Store protected from moisture and heat.

10.5. Incompatible materials to avoid:
Strong oxidizing agents, Strong bases., Alcohols, Water

10.6. Hazardous decomposition products:
Thermal decomposition giving toxic and corrosive products :, Hydrogen chloride gas, Methanesulphonic acid, Sulphur oxides, Carbon oxides
Product of hydrolysis :, Hydrogen chloride gas

11. TOXICOLOGICAL INFORMATION

All available data on this product and/or the components quoted in section 3 and/or the analogue substances/metabolites have been taken into account for the hazard assessment.

11.1. Information on toxicological effects:

Acute toxicity:

Inhalation:	**Very toxic by inhalation.**
• In man :	Symptoms analogous to products : Chlorine, Phosgene Lethal cases reported in man, Risk of pulmonary oedema
• In animals : vapour	Severely irritating to respiratory system, Corneal opacity, Difficulty in breathing LC50/4 h/rat: 0,117 mg/l (25 ppm) (Method: OECD Test Guideline 403) LC50/1 h/rat: approximately 0,82 - 1,17 mg/l (175 - 250 ppm) (Method: OECD Test Guideline 403)
Ingestion:	**Toxic if swallowed.**
• In man :	Risk of burns in the mouth, the throat and in the stomach.
• In animals :	LD50/rat: 255 mg/kg
Dermal:	**Toxic in contact with skin.**
• In animals :	LD50/rabbit: 200 - 2.000 mg/kg

Local effects (Corrosion / Irritation / Serious eye damage):

Skin contact:	**Causes burns.**
• In animals :	Corrosive to skin (mouse, Exposure time: 1 h)
Eye contact:	**Risk of serious damage to eyes.**
• In man :	Irritating to eyes., Exposure to vapours, lachrymatory. (1 ppm)
• In animals :	Corrosive (Draize Test, rabbit)

Respiratory or skin sensitization:

Inhalation:	No data available.
Skin contact:	**Strong skin sensitizer**
• In animals :	Strong sensitizing effects by skin contact. (Method: OECD Test Guideline 406 Guinea pig maximization test)

CMR effects :

Mutagenicity:	**Results from in vitro and in vivo tests do not lead to considering the product as genotoxic**
In vitro	Ames test in vitro: Active (Method: OECD Test Guideline 471) In vitro chromosomal abnormality test on human lymphocytes: Active (Method: OECD Test Guideline 473)
In vivo	Micronucleus test in vivo mouse: Inactive (Method: OECD Test Guideline 474)
Carcinogenicity:	**There is no data available for this product.**
Reproductive toxicity:	
Fertility:	**There is no data available for this product.**
Foetal development:	**There is no data available for this product.**

Specific target organ toxicity :

Single exposure : **The substance or mixture is classified as specific target organ toxicant, single exposure, category 3 with respiratory tract irritation.**
Exposure routes : Inhalation
Target Organs : respiratory tract

Inhalation:
• In animals : Inhalation of vapours : , At high concentrations
Irritating to eyes and respiratory system , Lung congestion, rat

Repeated exposure: No data available.

Aspiration hazard: Not applicable

12. ECOLOGICAL INFORMATION

12.1. Toxicity :

Aquatic invertebrates: **Harmful to daphnia.**
EC50, 48 h (Daphnia magna (Water flea)) : 34 mg/l (Method: OECD Test Guideline 202, pH: 5,0, Immobilization, Test substance: Active ingredient)

Aquatic plants: **Harmful to algae.**
EC r50, 72 h (Pseudokirchneriella subcapitata) : 32 mg/l (Method: OECD Test Guideline 201, pH: 3,4, Growth inhibition, Test substance: Active ingredient)

12.2. Persistence and degradability :

Stability in water:
Rapid hydrolysis
Half-life: 0,065 h
Method: No information available.

Biodegradation (In water): **Readily biodegradable**
Primary biodegradation: Biochemical oxygen demand 90,6 % after 28 d (Method: OECD Test Guideline 301 D)

12.3. Bioaccumulative potential :

Bioaccumulation: **Not bioaccumulable**
Partition coefficient: n-octanol/water: log Kow : 1,27 , at 20 °C (Method: calculated)

12.4. Mobility in soil - Distribution among environmental compartments:
Surface tension: 72,5 mN/m 21 °C

12.5. Results of PBT and vPvB assessment :

As defined in Article 18(4) of Regulation (EC) No. 1907/2006 (REACH Regulation), this substance is registered as an isolated intermediate. Therefore, the data is not required.

12.6. Other adverse effects: None known.

13. DISPOSAL CONSIDERATIONS

13.1. Waste treatment:

Disposal of product: Neutralize carefully with a dilute caustic soda solution. Destroy the product by incineration (in accordance with local and national regulations).

Disposal of packaging:

14. TRANSPORT INFORMATION

Regulation	UN number	Proper shipping name	Class	Label	PG	Environmentally hazardous	Other information
ADR	3246	METHANESULPHONYL CHLORIDE	6.1	6.1 + 8	I	no	
RID	3246	METHANESULPHONYL CHLORIDE	6.1	6.1 + 8	I	no	
IATA Cargo							**Not permitted for transport**
IATA Passenger							**Not permitted for transport**
IMDG	3246	METHANESULPHONYL CHLORIDE	6.1	6.1 + 8	I	no	EmS Number: F-A, S-B

15. REGULATORY INFORMATION

Safety data sheets: according to Regulation (EC) No. 1907/2006 and its amendment (453/2010)

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

15.2. Chemical Safety Assessment:

As defined in Article 18(4) of Regulation (EC) No. 1907/2006 (REACH Regulation), this substance is registered as an isolated intermediate. Therefore, a chemical safety report is not required.

INVENTORIES:

EINECS:	Conforms to
TSCA:	Conforms to
AICS:	Conforms to
DSL:	All components of this product are on the Canadian DSL list.
ENCS (JP):	Conforms to
KECI (KR):	Conforms to
PICCS (PH):	Conforms to
IECSC (CN):	Conforms to

16. OTHER INFORMATION

Full text of R, H, EUH-phrases referred to under sections 2 and 3

R21/22	Harmful in contact with skin and if swallowed.
R26	Very toxic by inhalation.
R34	Causes burns.
R43	May cause sensitization by skin contact.
H301	Toxic if swallowed.
H311	Toxic in contact with skin.
H314	Causes severe skin burns and eye damage.
H317	May cause an allergic skin reaction.
H318	Causes serious eye damage.
H330	Fatal if inhaled.
H335	May cause respiratory irritation.

Further information This product must be handled only by personnel well informed of safety conditions.

Update:

Safety datasheet sections which have been updated:		Type:
2	Classification and labelling, Potential health effects, Environmental Effects	Additions, Revisions
7	Specific use(s)	Additions
8	Derived No Effect Level (DNEL), Predicted No Effect Concentration (PNEC), General protective measures, Exposure controls	Additions
9	Flammability (solid, gas), Autoignition temperature, Explosive properties, Oxidizing properties, Surface tension	Additions
9	Boiling point/boiling range, Flash point, Vapour pressure, Density, Relative density	Revisions
11	Acute toxicity, Skin contact, Eye contact, Sensitisation, Specific Target Organ Toxicant, Aspiration hazard	Additions, Revisions
12	Aquatic toxicity, Stability in water, Biodegradation, Mobility, PBT assessment	Additions, Revisions
12	Biodegradation	Revisions
15	Chemical Safety Assessment	Additions

Thesaurus:
NOAEL : No Observed Adverse Effect Level (NOAEL)
LOAEL : Lowest Observed Adverse Effect Level (LOAEL)
bw : Body weight
food : oral feed
dw : Dry weight
vPvB : very Persistent and very Bioaccumulative
PBT : Persistent, Bioaccumulative and Toxic

This information applies to the PRODUCT AS SUCH and conforming to specifications of ARKEMA. In case of formulations or mixtures, it is necessary to ascertain that a new danger will not appear. The information contained is based on our knowledge of the product, at the date of publishing and it is given quite sincerely. Users are advised of possible additional hazards when the product is used in applications for which it was not intended. This sheet shall only be used and reproduced for prevention and security purposes. The references to legislative, regulatory and codes of practice documents cannot be considered as exhaustive. It is the responsibility of the person receiving the product to refer to the totality of the official documents concerning the use, the possession and the handling of the product. It is also the responsibility of the handlers of the product to pass on to any subsequent persons who will come into contact with the product (usage, storage, cleaning of containers, other processes) the totality of the information contained within this safety data sheet and necessary for safety at work, the protection of health and the protection of environment.

NB: In this document the numerical separator of the thousands is the "." (point), the decimal separator is "," (comma).