

Safety Data Sheet

according to Regulations 1907/2006/EC (REACH) and 2015/830/EU

REF: 701950	Acylation kit	Page: 1/9
Printing date: 02.06.2020	Date of issue: 06.06.2018	

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

1.1 Product identifier

REF 701950
 Product name Acylation kit

REACH Registration number(s): see SECTION 3.1/3.2 or
 A registration number for the substance(s) does not exist because the annual tonnage does not require registration or the substance or its use is excluded from registration.

2 x 1 mL MBHFBA
 2 x 1 mL MBTFA
 2 x 1 mL TFAA

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

Relevant identified uses
 Product for analytical use.
 Exposure Scenario Classification according REACH, RIP 3.2 Codes: SU 0-2, PC 21, PROC 15, AC 0
 The exposure scenario is integrated into sections 1-16.

Uses advised against
 not described

1.3 Details of the supplier of the safety data sheet

Manufactured by:
 MACHEREY-NAGEL GmbH & Co. KG
 Neumann-Neander-Str. 6-8, 52355 Dueren, GERMANY
 Tel.: +49 2421 969 0 E-mail: sds@mn-net.com (msds@mn-net.com)

1.4 Emergency telephone number

Outside Germany (DE): Call your regional Poisons Information Service or call local Life Saving Service.
 DE: Gemeinsames Giftinformationszentrum (GGIZ) 99089 Erfurt tel. +49 361 730 730

You find our current versions of SDS (22 languages) in Internet: <http://www.mn-net.com/SDS>

SECTION 2: Hazard identification

2.0 Classification of the complete product



Signal word	DANGER
Hazard identification	Hazard classes/categories
EUH014	Water-react. 1
H226	Flam. Liq. 3
H302	Acute Tox. 4 oral
H314	Skin Corr. 1A
H314US	Skin Corr. 1B
H315	Skin Irrit. 2
H319	Eye Irrit. 2
H332	Acute Tox. 4 inh.
H412	Aquatic Chronic 3

2.1 Classification of the substance or mixture

1 mL MBHFBA

Safety Data Sheet

according to Regulations 1907/2006/EC (REACH) and 2015/830/EU

REF: 701950

Acylation kit

Page: 2/9

Printing date: 02.06.2020

Date of issue: 06.06.2018



GHS02 GHS07

Signal word: WARNING

Hazard identification	Hazard classes/categories
H226	Flam. Liq. 3
H302	Acute Tox. 4 oral
H315	Skin Irrit. 2
H319	Eye Irrit. 2

1 mL MBTFA



GHS02 GHS05 GHS07

Signal word: DANGER

Hazard identification	Hazard classes/categories
H226	Flam. Liq. 3
H302	Acute Tox. 4 oral
H314US	Skin Corr. 1B
H315	Skin Irrit. 2
H319	Eye Irrit. 2

1 mL TFAA



GHS05 GHS07

Signal word: DANGER

Hazard identification	Hazard classes/categories
EUH014	Water-react. 1
H314	Skin Corr. 1A
H332	Acute Tox. 4 inh.
H412	Aquatic Chronic 3

2.2 Label elements

According **CLP directive** inner packages must be only labelled with GHS symbol(s) and product identifier(s) (EU 1272/2008 Annex I - 1.5.1.2). Inner packages up to 10 mL need max. 2 symbols (Annex I - 1.5.2.4.1 / 2).

Harmful chemicals/mixtures with signal word: **WARNING** and highly flammable chemicals/mixtures must not be labelled with H and P phrases **until 125 mL** (EU 1272/2008 Annex I - 1.5.2).

1 mL MBHFBA



GHS02 GHS07

Signal word: WARNING

Safety Data Sheet

according to Regulations 1907/2006/EC (REACH) and 2015/830/EU

REF: 701950

Acylation kit

Page: 3/9

Printing date: 02.06.2020

Date of issue: 06.06.2018

1 mL MBTFA



GHS02



GHS05



GHS07

Signal word: DANGER

H314US

Causes severe skin burns and eye damage. (not regulated in EU-CLP)

P260D, P280sh, P303+361+353, P305+351+338, P501

Do not breathe dust/vapours. Wear protective gloves/eye protection. IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water [or shower]. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Dispose of contents/container to regulated waste treatment.

1 mL TFAA



GHS05



GHS07

Signal word: DANGER

H314, EUH014

Causes severe skin burns and eye damage. Reacts violently with water.

P260sh, P280sh, P303+361+353, P305+351+338, P310

Do not breathe dust/vapours. Wear protective gloves/eye protection. IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water [or shower]. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER/doctor.

2.3 Other hazards

Possible hazards from physicochemical properties

Generally in the case of pH values are less than 2 or higher than 11.5 then it is corrosive. In the case of pH values are less than 5 or higher than 9 then it is irritant. Flammable properties. ---

Information pertaining to particular risks to human and possible symptoms

Causes varying degrees of acid burns on the skin, to the eyes and to the mucous membranes and wounds which do not heal quickly depending on the concentration, temperature and the exposure time. Vapours especially which steam from hot liquids and mist can have a severe irritant effect upon the eyes and the respiratory organs. Cause after oral intake, impairments of health when ingested in small quantities. -

Information pertaining to particular risks to the environment

Avoid contact of substance/mixture to environment.

PBT: not applicable

vPvB: not applicable

Other hazards

SECTION 3: Composition/information on ingredients

3.1 Substances or 3.2 Mixtures

1 mL MBHFBA

Chemical:	<i>N</i> -methyl-bis(heptafluorobutyramide) (MBHFBA)	CAS No.: 73980-71-9
Classification:	H226, Flam. Liq. 3, H302, Acute Tox. 4 oral, H315, Skin Irrit. 2, H319, Eye Irrit. 2	
Formula:	C ₉ H ₃ F ₁₄ NO ₂	
TSCA Inventory:	not listed	
Concentration:	95 - <100 %	
acc. CLP (GHS):	H226, Flam. Liq. 3, H302, Acute Tox. 4 oral, H315, Skin Irrit. 2, H319, Eye Irrit. 2	

Safety Data Sheet

according to Regulations 1907/2006/EC (REACH) and 2015/830/EU

REF: 701950

Acylation kit

Page: 4/9

Printing date: 02.06.2020

Date of issue: 06.06.2018

1 mL MBTFA

Chemical: *N*-methyl-bis(trifluoroacetamide) (MBTFA) CAS No.: 685-27-8
 Classification: H226, Flam. Liq. 3, H302, Acute Tox. 4 oral, H314US, Skin Corr. 1C, H315, Skin Irrit. 2, H319, Eye Irrit. 2
 Formula: C₅H₃F₆NO₂
 TSCA Inventory: not listed
 EC No.: 211-680-5 MFCD: 00000412
 Concentration: 95 - <100 %
 acc. CLP (GHS): H226, Flam. Liq. 3, H302, Acute Tox. 4 oral, H314US, Skin Corr. 1C, H315, Skin Irrit. 2, H319, Eye Irrit. 2

1 mL TFAA

Chemical: trifluoroacetic anhydride (TFAA) CAS No.: 407-25-0
 Classification: H314, Skin Corr. 1B, H332, Acute Tox. 4 inh., H412, Aquatic Chronic 3, EUH014, Water-react. 1
 Formula: C₄F₆O₃
 TSCA Inventory: listed for R&D
 REACH Reg. No.: 01-2119960260-46-xxxx
 EC No.: 206-982-9 Indice No.: (607-091-00-1)
 RTECS: AJ9800000 MFCD: 00000416
 KE No.: KE-34234
 Concentration: 95 - <100 %
 acc. CLP (GHS): H314, Skin Corr. 1B, H332, Acute Tox. 4 inh., H412, Aquatic Chronic 3, EUH014, Water-react. 1

3.3 Remarks

List of H and P phrases: see section 16.1

SECTION 4: First aid measures

4.1 Description of first aid measures

Place insured person out of danger zone to fresh air immediately. Ensure quiet, warmth, and provide resuscitation if necessary. If necessary contact medical advice. Remove contaminated clothing. Show product package, packing insert and this material safety data sheet to the doctor.

4.1.1 After SKIN Contact

Remove contaminated clothing immediately. Rinse the affected skin or mucous membrane thoroughly for min. 15 minutes under running water. (If possible) use soap. Avoid neutralisation. Then apply a loose bandage.

4.1.2 After EYE Contact

After contact with the eyes rinse thoroughly under running water with the eyelid wide open for min. 10 minutes with eye washing bottle, eye douche or running water (protect intact eye). Before (if possible) apply eye drops Proxymetacaine 0.5%, if the opening the eyelid convulsion is painful. Further treatment to be carried out by an eye specialist.

4.1.3 After INHALATION of vapours

After inhalation of foam or vapour fresh air should be inhaled. Keep airways free. If vomiting and if insensible place patient in recovery position and keep airways free. ---

4.1.4 After ORAL Intake

After oral intake lots of water with activated charcoal supplement should be drunk after it has been ingested. Do not induce vomiting under any circumstances. Do not make any efforts to neutralise it. Contact medical advice for possible consequences. ---

4.2 Most important symptoms and effects, both acute and delayed

4.3 Indication of any immediate medical attention and special treatment needed

CORROSIVE DAMAGE: After SKIN CONTACT rinse with water for a long time. Efforts to neutralise the substance can frequently make matters worse. Apply glucocorticosteroides following inflammatory reactions. After EYE CONTACT rinse immediately with plenty of water for a long time. Eyelid convulsion measures. Name the corrosive chemical. Further treatment must to be carried out by an eye specialist. After INTAKE administer aluminium oxide drug suspensions. Administer a prophylaxis to counter pulmonary oedema following the INGESTION of corrosive aerosols. In the event of RESPIRATORY DISTRESS ensure that the patient inhales oxygen. ---

SECTION 5: Firefighting measures

5.1 Extinguishing media

Fire extinguishers appropriate to the fire classification, and, if applicable, a fire blanket must be available in a prominent location in the work area. All extinguishers like FOAM, WATER SPRAY, DRY POWDER, CARBON DIOXIDE can be used.

Safety Data Sheet

according to Regulations 1907/2006/EC (REACH) and 2015/830/EU

REF: 701950

Acylation kit

Page: 5/9

Printing date: 02.06.2020

Date of issue: 06.06.2018

5.2 Special hazards arising from the substance or mixture

WARNING: Flammable (GHS regulation). May form explosive vapour-air mixtures. Formation of hazardous and caustic vapour-air mixtures possible. ---

5.3 Advice for firefighters

No, for listed product. Product package burns like paper or plastic. Spray any vapours released with water. Retent fire water. Use only acid-resistant safety equipment.

For great amount - if necessary - protective breathing apparatus which is independent of the ambient air (isolated equipment), and sealed protective clothing is necessary in the event of a large-scale formation of toxic substances.

5.4 Additional information

Danger for environment **only in the event of a large-scale leakage** or formation of hazardous substances. ---

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Do not breathe vapours. Wear suitable protective gloves (see 8.2.2). Wear eye protection, respectively face protection. Regular staff training is necessary, indicating hazards and precautions on the basis of operating instructions. Restrictions on activity must be observed.

6.2 Environmental precautions

not necessary, contains only small amounts of these substances

6.3 Methods and material for containment and cleaning up

Bind any escaping liquid with inert absorbent. And dispose in accordance to local regulations for the disposal of hazardous chemicals. Clean any contaminated equipment and floors with plenty of water.

Collect small amounts of leaked liquid and flush with water into drains.

6.4 Reference to other sections

see information in section 5.4 ---

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Handling in accordance with the test instruction, that comes with the product.

7.2 Conditions for safe storage, including any incompatibilities

The original product package of MACHEREY-NAGEL allows a safe storage.

Storage class (VCI): 8B

Water hazard class (DE): 2

7.2.1 Requirements for stock rooms and containers

Keep original product packages tightly closed during handling and storage. Use inbreakable container for transport of glass bottles.

7.3 Specific end use(s)

Product for analytical use.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

1 mL MBHFBA

Chemical: *N-methyl-bis(heptafluorobutyramide)* (MBHFBA)

CAS No.: 73980-71-9

1 mL MBTFA

Chemical: *N-methyl-bis(trifluoroacetamide)* (MBTFA)

CAS No.: 685-27-8

1 mL TFAA

Chemical: *trifluoroacetic anhydride* (TFAA)

CAS No.: 407-25-0

NIOSH: not listed

[TWA] Time-weighted average to a reference period of 8 hours, [STEL] Short-term exposure limit related to a 15-minute period

OSHA: not listed

Safety Data Sheet

according to Regulations 1907/2006/EC (REACH) and 2015/830/EU

REF: 701950

Acylation kit

Page: 6/9

Printing date: 02.06.2020

Date of issue: 06.06.2018

8.2 Exposure controls

Good ventilation and extraction system in the room, floor resistant to chemicals with floor drainage and washing facilities. The highest level of cleanliness must be maintained at the workplace.

8.2.1 Respiratory protection

No additional recommendations.

8.2.2 Hand protection

Yes, gloves according EN 374 (permeation time >30 min - level 2), consist of PVC (f.ex. from Ansell or KCL). Use for short times chemical resistant latex or nitril gloves with code EN 374-3 level 1.

8.2.3 Eye protection

Yes, safety glasses according EN 166 with integrated side shields or wrap-around protection or face protection.

8.2.4 Skin protection

Recommended to avoid clothing damage, and to avoid contamination with these hazards.

8.2.5 Personal hygiene

Eating, drinking, smoking, taking snuff and storage of food in work areas and at outdoor workplaces is prohibited. Avoid contact with the skin, eyes and clothing. Rinse any clothing on which the substance has been spilled, and soak it in water. Wash hands thoroughly with soap and water when stopping work and before eating, and then apply protective skin cream.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

1 mL MBHFBA

Appearance: liquid	Colour: colourless	Odor: penetrative
pH: < 2		
Boiling point: 157-166 °C		
Flash point: 42 °C		
Specific gravity: 1,673 g/cm ³		

1 mL MBTFA

Appearance: liquid	Colour: colourless	Odor: penetrative
pH: < 2		
Boiling point: 124 °C		
Flash point: 42 °C		
Specific gravity: 1,55 g/cm ³		

1 mL TFAA

Appearance: liquid	Colour: colourless	Odor: penetrative
pH: < 2		
Melting point: -65 °C		
Boiling point: 40 °C		
Specific gravity: 1,51 g/cm ³		
Solubility in water: instable %		

9.2 Other information

Data for the other parameters of the mixtures are not available, because no registration and no chemical safety report is required.

Relevant Properties of Substance Group

SECTION 10: Stability and reactivity

10.1 Reactivity

Strong CORROSIVE, . Reacts with water (sometimes violent) and diverse organic compounds. no further data available.

10.2 Chemical stability

No known instability.

10.3 Possibility of hazardous reactions

Can react violently with organic material. No further data available.

10.4 Conditions to avoid

Not necessary. ---

Safety Data Sheet

according to Regulations 1907/2006/EC (REACH) and 2015/830/EU

REF: 701950

Acylation kit

Page: 7/9

Printing date: 02.06.2020

Date of issue: 06.06.2018

10.5 Incompatible materials

Avoid contact with strong acids or alkalines.

10.6 Hazardous decomposition products

In the original package all parts/all reagents are safety and separated stored. Decompositions are not observed during the expiration period under recommended conditions.

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Following information is valid for pure substances. Quantitative data on the toxicity of this product are not available.

1 mL MBHFBA

Chemical: *N-methyl-bis(heptafluorobutyramide) (MBHFBA)* CAS No.: 73980-71-9
 TSCA Inventory: not listed
 Acute Effects: Cause after oral intake, impairments of health when ingested in small quantities.

1 mL MBTFA

Chemical: *N-methyl-bis(trifluoroacetamide) (MBTFA)* CAS No.: 685-27-8
 TSCA Inventory: not listed
 Acute Effects: Cause after oral intake, impairments of health when ingested in small quantities.

1 mL TFAA

Chemical: *trifluoroacetic anhydride (TFAA)* CAS No.: 407-25-0
 TSCA Inventory: listed for R&D California Proposition 65 List: not listed
 Target Organs: affect the eye or visual capacity
 Symptoms: conjunctivitis; corneal damage
 Australia NICNAS: not listed Canada CEPA 1999: DSL Yes
 Japan CSCL/PRTR: not listed, Japan PDSCL: not listed
 Japan ISHL: not listed
 South Korea TCCA: not listed
 Korea Exist.Chem.Inventory: KE-34234
 Acute Effects: Cause after skin contact, impairments of health when ingested in small quantities.

SECTION 12: Ecological information

12.1 Toxicity

Following information is valid for pure substances.

1 mL MBHFBA

Chemical: *N-methyl-bis(heptafluorobutyramide) (MBHFBA)* CAS No.: 73980-71-9
 Water hazard class (DE): 1
 Storage class (VCI): 12

1 mL MBTFA

Chemical: *N-methyl-bis(trifluoroacetamide) (MBTFA)* CAS No.: 685-27-8
 Water hazard class (DE): 1
 Storage class (VCI): 12

1 mL TFAA

Chemical: *trifluoroacetic anhydride (TFAA)* CAS No.: 407-25-0
 Harmful to aquatic life with long lasting effects. Avoid contact of substance/mixture to environment.
 Environmental hazards must not be labelled with P phrases until 125 mL (EU 1272/2008 Annex I - 1.5.2).
 Water hazard class (DE): 2 WGK No.: (729)
 Storage class (VCI): 8 B

12.2 Persistence and degradability

not necessary

12.3 Bioaccumulative potential

not necessary

Safety Data Sheet

according to Regulations 1907/2006/EC (REACH) and 2015/830/EU

REF: 701950

Acylation kit

Page: 8/9

Printing date: 02.06.2020

Date of issue: 06.06.2018

12.4 Mobility in soil

not necessary

12.5 Results of PBT and vPvB assessment

no data available

12.6 Other adverse effects

no additional data available

SECTION 13: Disposal considerations

Please observe local regulations for collection and disposal of hazardous waste and contact waste disposal company, where you will obtain information on laboratory waste disposal (waste code number 16 05 06).

13.1 Waste treatment methods

Normally it is possible to empty small amounts (diluted!) into drains. Empty containers of corrosive reagents prior to disposal, rinse with water.

SECTION 14: Transport information

14.1 - 14.4: No dangerous goods according the transport regulations because

for amounts until 5 pc. à 20x 1 mL per fibre box

De Minimis (excepted quantities: $\leq 1 \text{ mL} / \sum \leq 100 \text{ mL}$) = ADR 3.5.1.4

De Minimis (excepted quantities: $\leq 1 \text{ mL} / \sum \leq 100 \text{ mL}$) = IATA DRG 2.6.10

14.5 Environmental hazards

none, contains only small quantities of hazardous substances, contains only small amounts of these substances

14.6 Special precautions for user

not necessary

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

not applicable

SECTION 15: Regulatory information

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

German act governing protection from hazardous substances (Chemicals Act / Chemikaliengesetz- ChemG), revised on August 2013
 German order governing protection from hazardous substances (Ordinance on Hazardous Substances / Gefahrstoffverordnung - GefStoffV), revised on November 2010, according to Directive 98/24/EC
 TRGS 200, German engineering rules governing the classification and labelling of hazardous substances, preparations and products, updated October 2011
 MN Leaflet/User manual, also see www.mn-net.com
 Look for your country-specific regulations.

15.2 Chemical safety assessment

not necessary for these small amounts ---

SECTION 16: Other information

16.1 List of H and P phrases

16.1.1 List of relevant H phrases

H226	Flammable liquid and vapour.
H302	Harmful if swallowed.
H314	Causes severe skin burns and eye damage.
H314US	Causes severe skin burns and eye damage. (not regulated in EU-CLP)
H315	Causes skin irritation.
H319	Causes serious eye irritation.
H332	Harmful if inhaled.
H412	Harmful to aquatic life with long lasting effects.
EUH014	Reacts violently with water.

16.1.2 List of relevant P phrases

P210 Keep away from heat/sparks/open flames/hot surfaces. No smoking.

Safety Data Sheet

according to Regulations 1907/2006/EC (REACH) and 2015/830/EU

REF: 701950	Acylation kit	Page: 9/9
Printing date: 02.06.2020	Date of issue: 06.06.2018	

P260D	Do not breathe vapours.
P260sh	Do not breathe dust/vapours.
P261sh	Avoid breathing dust/vapours.
P264W	Wash with water thoroughly after handling.
P273	Avoid release to the environment.
P280sh	Wear protective gloves/eye protection.
P301+312	IF SWALLOWED: Call a POISON CENTER/doctor if you feel unwell.
P301+330+331	IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
P303+361+353	IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water [or shower].
P304+340	IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P305+351+338	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/doctor.
P330	Rinse mouth.
P501	Dispose of contents/container to regulated waste treatment.

16.2 Training advice

Multiple safety training of staffs about danger and protection by using hazards in working area. Additionally training and introduction of staffs for using these products.

16.3 Recommended restriction on use

Only for professional user.
 Look about employee restrictions for young people (f. ex. 94/33/EC or DE § 22 JArbSchG)!
 Look about employee restrictions for pregnant women and nursing women (f.ex. 92/85/EEC or for DE §§ 11-13 MuSchG 2017)!
 An individual package of this product or test kit has a moderate hazardous potential.

16.4 Further information

MACHEREY-NAGEL GmbH & Co. KG provides the information contained herein in good faith being up-to-date of own realizations at revision time. This document is intended only as a guide to the appropriate precautionary handling of the material by a properly trained person using this product. Individuals receiving the information must exercise their independent judgement in determining its appropriateness for a particular purpose.
 MACHEREY-NAGEL GmbH & Co. KG makes NO REPRESENTATIONS or WARRANTIES, either expressed or implied, including without limitation any warranties of merchantability, fitness for a particular purpose with respect to the information set forth herein or the product to which the information refers. Accordingly MACHEREY-NAGEL GmbH & Co. KG will not be responsible for damages resulting from use of or reliance upon this information. See terms and conditions at the end of our price lists for additional information.

16.5 Sources of key data

Regulation 453/2010/EU REACH - REQUIREMENTS FOR THE COMPILATION OF SAFETY DATA SHEETS
 Regulation 487/2013/EU, 4th adaptation of CLP regulation to technical and scientific progress
 Regulation 669/2018/EU, 4th adaptation of CLP regulation to technical and scientific progress
 Regulation 1480/2018/EU, 4th adaptation of CLP regulation to technical and scientific progress
 TRGS 900, German engineering rules governing limits in air at work, updated 03/2019
 SUVA .CH, Limits in air at work 2009, revised on 01.2009
 KÜHN, BIRETT Merkblätter Gefährliche Arbeitsstoffe (Data Sheets of Hazardous Substances)

Revisions/Updates

Reason for Revision: 2016-03 Adaptation of regulation 1221/2015/EU