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Manifest

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Container-No.: TRHU7015737 40' HIGH CUBE CONTAINER Seal-No.: WWA030053848
Vessel: SAC9176 / DIMITRA C
ETS:
Master-B/L.: ONEYHAMD55493500

BL-Ref	Marks & Nos	Qty	Packing	Description of goods	Kos	Cbm
ALM249741	SYMRISE MEX ALTAMIRA 4500854126	10	PALLETS	10 IBC COMPOSITE UN 31HA1 FORMIC ACID 99/100% HS CODE: 29151100 UN 1779, FORMIC ACID, 8 (3), II, (+49.00 C C.C.), IMDG-CODE SEGREGATION GROUP 1-ACIDS	12600.00	14.302
ALM249752	SYMRISE S. DE R. L. DE C.V. AVENIDA REPUBLICA MEXICANA 200 CP. 66480, COLONIA GARZA CANTUSAN NICOLAS DE LOS GARZA, NUEVO LEON MEXICO PO: 4500846670 59062101 TO 59062102 59316101	1	PALLET	2 PLASTIC JERRICAN UN 3H1 ITALIAN LEMON OIL SFUMATRICE DECOLORIZED HS CODE: 33011310 UN 1197, EXTRACTS, LIQUID (LIMONENE), 3, III, (+49.00 C C.C.), MARINE POLLUTANT 1 PLASTIC DRUM UN 1H1 BERGAMOT OIL IT NEW CROP HS CODE: 33011920 UN 1197, EXTRACTS, LIQUID (LIMONENE), 3, III, (+56.00 C C.C.), MARINE POLLUTANT	229.900	0.960
ALM249818	PLASTIC OMNIUM MEXICO DN: 45204	1	PACKAGE	MOTOR CAR ACCESSORIES HS-CODE:392690	92.000	1.560

Manifest

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Container-No.: TRHU7015737 40' HIGH CUBE CONTAINER Seal-No.: WWA030053848
Vessel: SAC9176 / DIMITRA C
ETS:
Master-B/L.: ONEYHAMD55493500

BL-Ref	Marks & Nos	Qty	Packing	Description of goods	Kos	Cbm
ALM249820	SOLVAY FLOUR GMBH MEXICO ALTAMIRA PO 4514096201	6	PALLETS	54 STEEL DRUMS UN 1A1 NOCOLOK CS FLUX (SM) HS CODE: 38109099 UN 3077, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (CESIUM POTASSIUM FLUOROALUMINATE), 9, III, MARINE POLLUTANT UN 3077/Class 9/PG III Imo Gross Weight: 2442,960 KGS Imo Net Weight : 2160,000 KGS	2442.960	7.428
ALM249820	ZWICKROELL S.A. DE C.V.AV. SANTA FE NO. 170 OF. 0-2-06 LOMAS DE SANTA FE 01210 MEXICO D.F. MEXICO PO: ZRMX-1055	3	CASES	ZWICKROELL MATERIALS TESTING MACHINE Z400E HS CODE: 90241020	2813.000	9.075

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Container-No.: TRHU7015737 40' HIGH CUBE CONTAINER Seal-No.: WWA030053848
Vessel: SAC9176 / DIMITRA C
ETS:
Master-B/L.: ONEYHAMD55493500

BL-Ref	Marks & Nos	Qty	Packing	Description of goods	Kos	Cbm
ALM249820	WEYLCHEM FRANKFURT GMBH AKRA POLYESTER, MEXICO GLICIDETER 100 WEYLCHEM FRANKFURT GMBH AKRA POLYESTER, MEXICO GLICIDETER 100	2	COLLI	=1 CP3 PALLET 288,000 KG 1 STEEL DRUM GLICIDETER 100 HS CODE: 29109000 = 1 IBC COMPOSITE UN 31HA1 850,000 KG GLICIDETER 100 HS CODE: 29109000	1138.000	3.184
ALM249864	VKI 10016517	11	PALLETS	PUMP HOUSING AND PUMP COVER HS CODE: 84139100	3768.240	6.758

Manifest

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Container-No.: TRHU7015737 40' HIGH CUBE CONTAINER Seal-No.: WWA030053848
Vessel: SAC9176 / DIMITRA C
ETS:
Master-B/L.: ONEYHAMD55493500

BL-Ref	Marks & Nos	Qty	Packing	Description of goods	Kos	Cbm
ALM249876	FEHRER AUTOMOTIVE MEXICO S.A. DE C.V. DN 446291	56	CARTONS	STOWED ON 7 PALLETS 4327 PACKAGES PVC BLANKS AND CUTS FROM LEATHER FOR AUTOMOTIVE INTERIORS HS CODE: 39269097, 42050090 FREIGHT PREPAID DAP SALTILLO SHIPPER'S REF: ID73431 ++ CONTACT: PERLA IRAZEMA ALEMAN / MATERIALS PLANNER MOBILE: +52 844 2773623 / IRAZEMA.ALEMAN@F JEANETTE CONSTANCIO GUERRERO / LOGISTICS M: +528442862052 / JEANETTE.CONSTANCIO	890.000	11.893

Total	Quantity 90	Grossweight 23.974.100	Measurement 55.160
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SHIPPER/EXPORTER SACO SHIPPING GMBH AS AGENT OF SACO SHIPPING LINE LTD BGM.-SMIDT-STR.128 D-28195 BREMEN GERMANY / DE118597456		BOOKING NO. HAMD55493500	SEA WAYBILL NO. ONEYHAMD55493500
CONSIGNEE INTERTEAM, S.A. DE C.V. SERVIC. INTERNACION. DE COMERCIO COLIMA 114 DESPACHO 201 COLONIA ROMA, C.P.06700, CN>		EXPORT REFERENCES (for the Merchant's and/or Carrier's reference only. See back clause 8. (4).)	
NOTIFY PARTY (It is agreed that no responsibility shall be attached to the Carrier or its Agents for failure to notify) INTERTEAM, S.A. DE C.V. SERVIC. INTERNACION. DE COMERCIO COLIMA 114 DESPACHO 201 COLONIA ROMA, C.P.06700, NP>		FORWARDING AGENT-REFERENCES FMC NO.	
PRE-CARRIAGE BY		PLACE OF RECEIPT HAMBURG	RECEIVED by the Carrier in apparent good order and condition (unless otherwise stated herein) the total number or quantity of Containers or other packages or units indicated in the box entitled "Carrier's Receipt", to be carried subject to all the terms and conditions hereof from the Place of Receipt or Port of Loading to the Port of Discharge or Place of Delivery, as applicable. Delivery of the Goods to the Carrier for Carriage hereunder constitutes acceptance by the Merchant (as defined hereinafter) (i) of all the terms and conditions, whether printed, stamped or otherwise incorporated on this side and on the reverse side of this Bill of lading and the terms and conditions of the Carrier's applicable tariff(s) as if they were all signed by the Merchant, and (ii) that any prior representations and/or agreements for or in connection with Carriage of the Goods are superseded by this Bill of Lading. If this is a negotiable (To Order/of) Bill of Lading, one original Bill of Lading, duly endorsed must be surrendered by the Merchant to the Carrier (together with any outstanding Freight) in exchange for the Goods or a Delivery Order or the pin codes for any applicable Electronic Release System. If this is a non-negotiable (straight) Bill of Lading, or where issued as a Sea Waybill, the Carrier shall deliver the Goods or issue a Delivery Order or the pin codes for any applicable Electronic Release System (after payment of outstanding Freight) to the named consignee against the surrender of one original Bill of Lading, or in the case of a Sea Waybill, on production of such reasonable proof of identity as may be required by the Carrier, or in accordance with the national law at the Port of Discharge or Place of Delivery as applicable. IN WITNESS WHEREOF the Carrier or their Agent has signed the number of Bills of Lading stated at the top, all of this tenor and date, and whenever one original Bill of Lading has been surrendered all other Bills of Lading shall be void.
OCEAN VESSEL VOYAGE NO. FLAG DIMITRA C 023W	PORT OF LOADING HAMBURG	FINAL DESTINATION (for the Merchant's reference only) ALTAMIRA	
PORT OF DISCHARGE ALTAMIRA	PLACE OF DELIVERY ALTAMIRA	TYPE OF MOVEMENT (IF MIXED, USE DESCRIPTION OF PACKAGES AND GOODS FIELD) FCL / FCL CY / CY	
(CHECK "HM" COLUMN IF HAZARDOUS MATERIAL) PARTICULARS DECLARED BY SHIPPER BUT NOT ACKNOWLEDGED BY THE CARRIER			

CNTR. NOS. W/SEAL NOS. MARKS & NUMBERS	QUANTITY (FOR CUSTOMS DECLARATION ONLY)	H M	DESCRIPTION OF GOODS	GROSS WEIGHT	GROSS MEASUREMENT
TRHU7015737 / WWA030053848			/ 90 PACKAGES / FCL / FCL/40HQ	23974.100KGS	55.160M3
SYMRISE S. DE R. L. DE C.V. AVENIDA REPUBLICA MEXICANA 200 CP. 66480, COLONIA GARZA CANTUSAN NICOLAS DE LOS GARZA,	1 H PACKAGE	2	PLASTIC JERRICAN UN 3H1 ITALIAN LEMON OIL SFUMATRICE DECOLORIZED HS CODE: 33011310 UN 1197, EXTRACTS, LIQUID (LIMONENE), 3, III, (+49.00 C C.C.), MARINE POLLUTANT 1 PLASTIC DRUM UN 1H1 BERGAMOT OIL IT NEW CROP	229.900KGS	0.960CBM

** TO BE CONTINUED ON ATTACHED LIST **

Declared Cargo Value US \$. If Merchant enters a value, Carrier's limitation of liability shall not apply and the ad valorem rate will be charged.

FREIGHT & CHARGES PAYABLE AT / BY: HAMBURG, HH MEXICO CITY			SERVICE CONTRACT NO. THAMN00236A	DOC FORM NO.	COMMODITY CODE	EXCHANGE RATE	[0] ORIGINAL BILLS(S) HAVE BEEN SIGNED.
CODE	TARIFF ITEM	FREIGHTED AS	RATE	PREPAID	COLLECT		DATE CARGO RECEIVED
							DATE LADEN ON BOARD 14 JUL 2023
							PLACE OF BILL(S) ISSUE HAMBURG
							DATED 14 JUL 2023
The printed terms and conditions on this Bill are available at its website at www.one-line.com				SIGNED BY: OCEAN NETWORK EXPRESS (EUROPE) LTD. GERMANY BRANCH		as agent for and on behalf of	

Thorsten Bratthar



Ocean Network Express Pte. Ltd.
(ONE), AS CARRIER

ORIGINAL NON NEGOTIABLE

VESSEL VOYAGE: DIMITRA C 023W

B/L NO.: ONEYHAMD55493500

CNTR NOS. W/SEAL NOS. MARKS & NUMBERS	QUANTITY (FOR CUSTOMS DECLARATION ONLY)	H M	DESCRIPTION OF GOODS	GROSS WEIGHT	MEASUREMENT
NUEVO LEON MEXICO PO: 4500846670 59062101 TO 59062102 59316101			HS CODE: 33011920 UN 1197, EXTRACTS, LIQUID (LIMONENE), 3, III, (+56.00 C C.C.), MARINE POLLUTANT IMO 3 UN 1197 IMO 3 UN 1197		
PLASTIC OMNIUM MEXICO DN: 45204	1 PACKAGE		MOTOR CAR ACCESSORIES HS-CODE:392690	92.000KGS	1.560CBM
WEYLICHEM FRANKFURT GMBH AKRA POLYESTER, MEXICO GLICIDETER 100 WEYLICHEM FRANKFURT GMBH AKRA POLYESTER, MEXICO GLICIDETER 100	2 PACKAGES		=1 CP3 PALLET 288,000 KG 1 STEEL DRUM GLICIDETER 100 HS CODE: 29109000 = 1 IBC COMPOSITE UN 31HA1 850,000 KG GLICIDETER 100 HS CODE: 29109000	1138.000KGS	3.184CBM
SOLVAY FLOUR GMBH MEXICO ALTAMIRA PO 4514096201	6 PACKAGES		54 STEEL DRUMS UN 1A1 NOCOLOK CS FLUX (SM) HS CODE: 38109099 UN 3077, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (CESIUM POTASSIUM FLUOROALUMINATE), 9, III, MARINE POLLUTANT UN 3077/CLASS 9/PG III IMO GROSS WEIGHT: 2442,960 KGS IMO NET WEIGHT : 2160,000 KGS IMO 9 UN 3077	2442.960KGS	7.428CBM
VKI 10016517	11 PACKAGES		PUMP HOUSING AND PUMP COVER HS CODE: 84139100	3768.240KGS	6.758CBM
FEHRER AUTOMOTIVE MEXICO S.A. DE C.V. DN 446291	56 PACKAGES		7 PALLETS 4327 PACKAGES PVC BLANKS AND CUTS FROM LEATHER FOR AUTOMOTIVE INTERIORS HS CODE: 39269097, 42050090 DAP SALTILLO SHIPPER'S REF: ID73431 ++ CONTACT: PERLA IRAZEMA ALEMAN / MATERIALS PLANNER MOBILE: +52 844 2773623 / IRAZEMA.ALEMAN@FEHRER.MX JEANETTE CONSTANCIO	890.000KGS	11.893CBM

SIGNED OCEAN NETWORK EXPRESS (EUROPE) LTD. GERMANY
BY: BRANCH

, as agent for and on behalf of

*Thorsten Hedder*Ocean Network Express Pte. Ltd.
(ONE), AS CARRIER

ORIGINAL NON NEGOTIABLE

VESSEL VOYAGE: DIMITRA C 023W

B/L NO.: ONEYHAMD55493500

CNTR NOS. W/SEAL NOS. MARKS & NUMBERS	QUANTITY (FOR CUSTOMS DECLARATION ONLY)	H M	DESCRIPTION OF GOODS	GROSS WEIGHT	MEASUREMENT
SYMRISE MEX ALTAMIRA 4500854126	10 PACKAGES		GUERRERO / LOGISTICS M: +528442862052 / JEANETTE.CONSTANCIO@FEHRER .MX 10 IBC COMPOSITE UN 31HA1 FORMIC ACID 99/100% HS CODE: 29151100 UN 1779, FORMIC ACID, 8 (3), II, (+49.00 C C.C.), IMDG-CODE SEGREGATION GROUP 1-ACIDS IMO 8 UN 1779	12600.000KGS	14.302CBM
ZWICKROELL S.A. DE C.V.AV. SANTA FE NO. 170 OF. 0-2-06 LOMAS DE SANTA FE 01210 MEXICO D.F. MEXICO PO: ZRMX-1055	3 PACKAGES		ZWICKROELL MATERIALS TESTING MACHINE Z400E HS CODE: 90241020 CN> MEXICO DF PH: 514-69 15 FX: 208-79-8 NP> MEXICO DF PH: 514-69 15 FX: 208-79-8	2813.000KGS	9.075CBM

ALSO NOTIFY INTERTEAM, S.A. DE C.V. SERVIC. INTERNACION. DE COMERCIO COLIMA 114 DESPACHO 201 COLONIA ROMA,C.P.06700, MEXICO DF PH: 514-69 15 FX: 208-79-8 OCEAN FREIGHT PREPAID SHIPPED ON BOARD SHIPPER'S LOAD, STOW AND COUNT INLAND TRANSPORTATION IN MEXICO IS CARRIED OUT ACCORDING TO LOCAL REGULATIONS. THE INFORMATION IN THE MASTER BILL OF LADING CAN BE AMENDED SUBJECT TO CUSTOMS REVIEW AND PENALIZATION IF THE BILL OF LADING IS ALLOWED TO AMEND, THE REQUESTER OF THE AMENDMENT SHALL BE RESPONSIBLE FOR SUCH CUSTOMS PENALTY AND INDEMNIFY THE CARRIE AND ITS AGENTS AGAINST ANY CONSEQUENCES WHATSOEVER IN RELATION TO SUCH AMENDMENT. ALM249752 ALM249818 ALM249826 ALM249826 ALM249864 ALM249876 ALM249741 ALM249826 CARRIER'S AGENT AT DESTINATION: ONE OCEAN NETWORK EXPRESS SHIPPING MEXICO,					

SIGNED BY: OCEAN NETWORK EXPRESS (EUROPE) LTD. GERMANY
BRANCH

, as agent for and on behalf of



Ocean Network Express Pte. Ltd.
(ONE), AS CARRIER

ORIGINAL NON NEGOTIABLE

VESSEL VOYAGE: DIMITRA C 023W

B/L NO.: ONEYHAMD55493500

CNTR NOS. W/SEAL NOS. MARKS & NUMBERS	QUANTITY (FOR CUSTOMS DECLARATION ONLY)	H M	DESCRIPTION OF GOODS	GROSS WEIGHT	MEASUREMENT
S.A. DE C.V. CIUDAD DE MEXICO PASEO DE LA REFORMA 180, PISO 19, COLONIA JUAREZ, DEL. CUAUHTEMOC, CIUDAD DE MEXICO, C.P. 06600 TEL: 5547808200					

SIGNED OCEAN NETWORK EXPRESS (EUROPE) LTD. GERMANY
BY: BRANCH

, as agent for and on behalf of

Ocean Network Express Pte. Ltd.
(ONE), AS CARRIER

MULTI MODAL DANGEROUS GOODS FORM

This form may be used as a dangerous goods declaration as it meets the requirements of SOLAS 74, Chapter VII, regulation 4;

MARPOL 73/78, Annex III, regulation 4

Shipper/Consignor/Sender SYMRISE S DE RL DE CV GARZA CANTU AV. REPUBLICA MEXICANA 200 66480 SAN NICOLAS DE LOS GARZA Mexico	Page 1 of 1 Pages		Freight Forwarder's reference 230708121804					
Consignee SYMRISE S DE RL DE CV GARZA CANTU AV. REPUBLICA MEXICANA 200 66480 SAN NICOLAS DE LOS GARZA Mexico	Carrier Saco Shipping Line, Limassol							
CONTAINER/VEHICLE PACKING CERTIFICATE I hereby declare that the goods described below have been packed/loaded into the container/vehicle identified below in accordance with the applicable provisions. MUST BE COMPLETED AND SIGNED FOR ALL CONTAINER/VEHICLE LOADS BY PERSON RESPONSIBLE FOR PACKING/LOADING Name/status, company Place and Date: Signature of packer	Vessel Dimitra C (023W)		<table border="1"> <tr> <td data-bbox="784 457 1161 514"> Port of loading Hamburg </td> <td data-bbox="1169 457 1507 514"> Port of discharge Altamira </td> </tr> </table>		Port of loading Hamburg	Port of discharge Altamira		
Port of loading Hamburg	Port of discharge Altamira							
SHIPPER'S DECLARATION I hereby declare that the contents of this consignment are fully and accurately described below by the proper shipping name, and are classified, packaged, marked and labelled/placarded and are in all respects in proper condition for transport according to the applicable international and national government regulations. <table border="0"> <tr> <td data-bbox="938 709 1177 766"> Name/status, company Lexzau, Scharbau on behalf of </td> <td data-bbox="1185 709 1507 766"> SYMRISE, SAN NICOLAS DE LOS G Hamburg / Bremen 30.06.2023 </td> </tr> <tr> <td data-bbox="938 745 1177 787"> Place and Date: </td> <td data-bbox="1185 745 1507 787"> <i>T. Liberoudis T. Glaubke</i> </td> </tr> </table> Signature on behalf of shipper Thomas Liberoudis / Timo Glaubke				Name/status, company Lexzau, Scharbau on behalf of	SYMRISE, SAN NICOLAS DE LOS G Hamburg / Bremen 30.06.2023	Place and Date:	<i>T. Liberoudis T. Glaubke</i>	
Name/status, company Lexzau, Scharbau on behalf of	SYMRISE, SAN NICOLAS DE LOS G Hamburg / Bremen 30.06.2023							
Place and Date:	<i>T. Liberoudis T. Glaubke</i>							
<table border="1"> <thead> <tr> <th data-bbox="121 846 219 892">No.</th> <th data-bbox="227 846 576 892">Number & kind of packages</th> <th data-bbox="584 846 1323 892">Description of goods</th> <th data-bbox="1331 846 1507 892">Gross mass</th> </tr> </thead> </table>	No.	Number & kind of packages	Description of goods	Gross mass				
No.	Number & kind of packages	Description of goods	Gross mass					
1) 10 pallets = 10 IBC composite UN 31HA1	pallet weight: kg UN 1779 FORMIC ACID, 8 (3), II, (+49,0°C c.c.), IMDG-CODE SEGREGATION GROUP 1-Acids, EmS: F-E,S-C Emergency Contact: CG Chemikalien GmbH & Co.KG via GIZ 24- hours no +49-6131-19240 Cargo gross/net weight: 12.600,000kg / 12.000,000kg		Gross weight: 12.600,000 kg					

Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH)



Formic acid 90-100%

Version number: 17.0
Replaces version of: 2020-03-13 (16)

Revision: 2022-04-20
First version: 2003-11-05

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

1.1 Product identifier

Identification of the substance	formic acid
Trade name	Formic acid 90-100%
Registration number (REACH)	01-2119491174-37
EC number	200-579-1
Index number in CLP Annex VI	607-001-00-0
CAS number	64-18-6

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

Relevant identified uses	Formulation additive Laboratory chemicals Intermediate for organic synthesis
Uses advised against	Do not use for squirting or spraying Do not use for products which come into direct contact with the skin

1.3 Details of the supplier of the safety data sheet

Name	Street	Postal code/city	Telephone	Telefax
CG CHEMIKALIEN GmbH & Co. KG	Ulmer Str. 1	DE-30880 Laatzen	+49 (0) 511 87803-0	+49 (0) 511 87803-66
CHEM-DIS Chemiedistribution GmbH	Bahnhofstraße 29A	DE-07607 Eisenberg	+49 (0) 36691 8649-0	+49 (0) 36691 8649-20
CSC JÄKLECHEMIE GmbH & Co. KG	Matthiasstr. 10-12	DE-90431 Nürnberg	+49 (0) 911 32646-0	+49 (0) 911 32646-160
Reher & Ramsden Nachflg. GmbH & Co. KG	Rubbertstr. 44	DE-21109 Hamburg	+49 (0) 40 751996-0	+49 (0) 40 751996-77
Reininghaus-Chemie GmbH & Co. KG	Joachimstr. 122-124	DE-45309 Essen	+49 (0) 201 55780-0	+49 (0) 201 55780-50

e-mail (competent person)

rac@cg-chemikalien.de

Formic acid 90-100%



National contact

Abteilung Regulatory Affairs and Compliance
+49 (0) 511 - 878 03 - 123

1.4 Emergency telephone number

As above or nearest toxicological information centre.

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Classification according to Regulation (EC) No 1272/2008 (CLP)

Classification				
Section	Hazard class	Category	Hazard class and category	Hazard statement
2.6	flammable liquid	3	Flam. Liq. 3	H226
3.10	acute toxicity (oral)	4	Acute Tox. 4	H302
3.11	acute toxicity (inhal.)	3	Acute Tox. 3	H331
3.2	skin corrosion/irritation	1A	Skin Corr. 1A	H314
3.3	serious eye damage/eye irritation	1	Eye Dam. 1	H318

For full text of abbreviations: see SECTION 16

The most important adverse physicochemical, human health and environmental effects

Skin corrosion produces an irreversible damage to the skin; namely, visible necrosis through the epidermis and into the dermis.

The product is combustible and can be ignited by potential ignition sources.

2.2 Label elements

Labelling according to Regulation (EC) No 1272/2008 (CLP)

Signal word danger

Pictograms

GHS02, GHS05,
GHS06



Formic acid 90-100%



Hazard statements

H226	Flammable liquid and vapour.
H302	Harmful if swallowed.
H314	Causes severe skin burns and eye damage.
H331	Toxic if inhaled.

Precautionary statements

P210	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P260	Do not breathe mist/vapours/spray.
P280	Wear protective gloves/protective clothing/eye protection/face protection.
P301+P330+P331	IF SWALLOWED: rinse mouth. Do NOT induce vomiting.
P303+P361+P353	IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water [or shower].
P304+P340	IF INHALED: Remove person to fresh air and keep comfortable for breathing.
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/doctor.

Supplemental hazard information

EUH071	Corrosive to the respiratory tract.
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Additional labelling requirements see section 15 of the safety data sheet

2.3 Other hazards

Results of PBT and vPvB assessment

According to the results of its assessment, this substance is not a PBT or a vPvB.

SECTION 3: Composition/information on ingredients

3.1 Substances

Name of substance	formic acid
Identifiers	
CAS No	64-18-6
EC No	200-579-1
Index No	607-001-00-0
Molecular formula	CH ₂ O ₂
Molar mass	46.03 g/mol
Purity	99.5 %

Formic acid 90-100%



concentration limit, M-factor, ATE

Specific Conc. Limits	M-Factors	ATE	Exposure route
Skin Corr. 1A; H314: $C \geq 90 \%$ Skin Corr. 1B; H314: $10 \% \leq C < 90 \%$ Skin Irrit. 2; H315: $2 \% \leq C < 10 \%$ Eye Dam. 1; H318: $C \geq 10 \%$ Eye Irrit. 2; H319: $2 \% \leq C < 10 \%$	-	730 mg/kg 7.85 mg/l/4h	oral inhalation: vapour

SECTION 4: First aid measures

4.1 Description of first aid measures

General notes

Remove affected person from the danger area and lay down.
 Do not leave affected person unattended.
 Self-protection of the first aider.

Following inhalation

Provide fresh air.
 If breathing is irregular or stopped, immediately seek medical assistance and start first aid actions.
 In case of unconsciousness place person in the recovery position. Never give anything by mouth.

Following skin contact

After contact with skin, take off immediately all contaminated clothing, and wash immediately with plenty of water.
 Call a physician immediately. Causes poorly healing wounds.

Following eye contact

In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
 Remove contact lenses, if present and easy to do. Continue rinsing.

Following ingestion

Rinse mouth immediately and drink plenty of water.
 Do NOT induce vomiting.
 Provide fresh air.
 Call a physician in any case.

Notes for the doctor

None.

4.2 Most important symptoms and effects, both acute and delayed

Subsequent observance for pneumonia and pulmonary oedema.
 Observe aspiration hazard if vomiting occurs.

Formic acid 90-100%



4.3 Indication of any immediate medical attention and special treatment needed

None.

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media

water spray, alcohol resistant foam, fire extinguishing powder, carbon dioxide (CO₂)

Unsuitable extinguishing media

water jet

5.2 Special hazards arising from the substance or mixture

Hazardous decomposition products: Section 10.

In case of insufficient ventilation and/or in use, may form flammable/explosive vapour-air mixture.

Solvent vapours are heavier than air and may spread along floors.

Places which are not ventilated, e.g. unventilated below ground level areas such as trenches, conduits and shafts, are particularly prone to the presence of flammable substances or mixtures.

Containments may explode when heated.

Hazardous combustion products

carbon monoxide (CO), Combustible / flammable vapors, Corrosive gases / vapors

5.3 Advice for firefighters

Keep containers cool with water spray.

In case of fire and/or explosion do not breathe fumes.

Co-ordinate firefighting measures to the fire surroundings.

Do not allow firefighting water to enter drains or water courses.

Collect contaminated firefighting water separately.

Fight fire with normal precautions from a reasonable distance.

Special protective equipment for firefighters

use suitable breathing apparatus, chemical protection suit

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

For non-emergency personnel

Remove persons to safety.

Ventilate affected area.

Keep away from sources of ignition - No smoking.

Avoid contact with skin and eyes.

Do not breathe vapour/spray.

Wearing of suitable protective equipment (including personal protective equipment referred to under

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Section 8 of the safety data sheet) to prevent any contamination of skin, eyes and personal clothing.

For emergency responders

Wear breathing apparatus if exposed to vapours/dust/spray/gases.

6.2 Environmental precautions

In case of formation of gases/vapours/mists, suppress with water spray.

Keep away from drains, surface and ground water.

Retain contaminated washing water and dispose of it.

6.3 Methods and material for containment and cleaning up

Advice on how to clean up a spill

Collect spillage.

Absorbent material (e.g. sand, diatomaceous earth, acid binder, universal binder, sawdust, etc.).

Appropriate containment techniques

Use of adsorbent materials.

Neutralisation techniques.

Material for neutralising like diluted soda or diluted caustic soda.

Other information relating to spills and releases

Place in appropriate containers for disposal.

Ventilate affected area.

6.4 Reference to other sections

Hazardous combustion products: see section 5.

Personal protective equipment: see section 8.

Incompatible materials: see section 10.

Disposal considerations: see section 13.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Provision of sufficient ventilation.

Handle and open container with care.

Do not use for squirting or spraying.

Do not breathe vapour/spray.

Avoid contact with skin and eyes.

When diluting, always stir the product into standing water.

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Measures to prevent fire as well as aerosol and dust generation

Use local and general ventilation.
Keep away from sources of ignition - No smoking.
Vapours may form explosive mixtures with air.
Due to danger of explosion, prevent leakage of vapours into cellars, flues and ditches.
Take precautionary measures against static discharge.
Ground/bond container and receiving equipment.
Use explosion-proof electrical/ventilating/lighting/equipment.
Use only non-sparking tools.

Specific notes/details

Places which are not ventilated, e.g. unventilated below ground level areas such as trenches, conduits and shafts, are particularly prone to the presence of flammable substances or mixtures.
Vapours are heavier than air, spread along floors and form explosive mixtures with air.

Measures to protect the environment

Avoid release to the environment.

Advice on general occupational hygiene

Do not eat, drink and smoke in work areas.
Wash hands after use.
Preventive skin protection (barrier creams/ointments) is recommended.
Remove contaminated clothing and protective equipment before entering eating areas.

7.2 Conditions for safe storage, including any incompatibilities

Explosive atmospheres

Keep container tightly closed and in a well-ventilated place.
Use local and general ventilation.
Keep cool.
Protect from sunlight.

Flammability hazards

Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
Take precautionary measures against static discharge.
Ground/bond container and receiving equipment.
Protect from sunlight.

Incompatible substances or mixtures

Incompatible materials: see section 10.

Protect against external exposure, such as

heat

Consideration of other advice

Keep away from food, drink and animal feeding stuffs.

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Ventilation requirements

Keep any substance that emits harmful vapours or gases in a place that allows these to be permanently extracted.

Provision of sufficient ventilation.

Specific designs for storage rooms or vessels

Receptacles aus:

Edelstahl (1.4571, 1.4404)

HDPE, HDPE (fluoriert), LDPE,

Glas

.

Storage temperature

recommended storage temperature: <25 °C

Packaging compatibilities

Only packagings which are approved (e.g. acc. to ADR) may be used.

7.3 Specific end use(s)

No information available.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Occupational exposure limit values (Workplace Exposure Limits)									
Country	Name of agent	CAS No	Identifier	TWA [ppm]	TWA [mg/m³]	STEL [ppm]	STEL [mg/m³]	Notation	Source
EU	formic acid	64-18-6	IOELV	5	9	-	-	-	2006/15/EC
GB	formic acid	64-18-6	WEL	5	9.6	-	-	-	EH40/2005

Notation

STEL short-term exposure limit: a limit value above which exposure should not occur and which is related to a 15-minute period (unless otherwise specified)

TWA time-weighted average (long-term exposure limit): measured or calculated in relation to a reference period of 8 hours time-weighted average (unless otherwise specified)

Human health values

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Relevant DNELs and other threshold levels				
Endpoint	Threshold level	Protection goal, route of exposure	Used in	Exposure time
DNEL	9.5 mg/m ³	human, inhalatory	worker (industry)	chronic - local effects

Environmental values

Relevant PNECs and other threshold levels		
Endpoint	Threshold level	Environmental compartment
PNEC	2 mg/l	freshwater
PNEC	0.2 mg/l	marine water
PNEC	7.2 mg/l	sewage treatment plant (STP)
PNEC	13.4 mg/kg	freshwater sediment
PNEC	1.34 mg/kg	marine sediment
PNEC	1.5 mg/kg	soil

8.2 Exposure controls

Appropriate engineering controls

Use local and general ventilation.

Individual protection measures (personal protective equipment)

Eye/face protection

Wear eye/face protection.

Hand protection

Protective gloves		
Material	Material thickness	Breakthrough times of the glove material
CR: chloroprene (chlorobutadiene) rubber	≥ 0,5 mm	>480 minutes (permeation: level 6)
IIR: isobutene-isoprene (butyl) rubber	≥ 0,7 mm	>480 minutes (permeation: level 6)
FKM: fluoro-elastomer	≥ 0,7 mm	>480 minutes (permeation: level 6)

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Unsuitable materials
Material
Leather
NBR: acrylonitrile-butadiene rubber

Wear suitable gloves.

Chemical protection gloves are suitable, which are tested according to EN 374.

Check leak-tightness/impermeability prior to use.

For special purposes, it is recommended to check the resistance to chemicals of the protective gloves mentioned above together with the supplier of these gloves.

Respiratory protection

In case of inadequate ventilation wear respiratory protection.

Environmental exposure controls

Use appropriate container to avoid environmental contamination.

Keep away from drains, surface and ground water.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Physical state	liquid
Colour	colourless
Odour	stinging
Melting point/freezing point	8.4 °C (OECD Guideline 102)
Boiling point or initial boiling point and boiling range	100.2 °C (OECD Guideline 103)
Flammability	flammable liquid in accordance with GHS criteria
Lower and upper explosion limit	15 vol% - 47 vol%
Flash point	49 °C (DIN EN ISO 13736)
Auto-ignition temperature	528 °C (DIN EN 14522)
Decomposition temperature	350 °C (DIN 51007)
pH (value)	2.2 (in aqueous solution: 10 g/l, 20 °C)

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Kinematic viscosity	1.41 mm ² /s at 20 °C (DIN 51562)
Dynamic viscosity	1.72 mPa s at 20 °C
Solubility(ies)	
Water solubility	miscible in any proportion
Partition coefficient n-octanol/water (log value)	-0.54 (25 °C)
Vapour pressure	42.7 hPa at 20 °C (OECD Guideline 104)
Density and/or relative density	
Density	1.22 g/cm ³ at 20 °C (OECD Guideline 109)
Relative vapour density	this information is not available
Particle characteristics	not relevant (liquid)
9.2 Other information	
Information with regard to physical hazard classes	there is no additional information
Other safety characteristics	
Temperature class (EU, acc. to ATEX)	T1 (maximum permissible surface temperature on the equipment: 450°C)

SECTION 10: Stability and reactivity

10.1 Reactivity

This material is not reactive under normal ambient conditions.

If heated:

risk of ignition

10.2 Chemical stability

The material is stable under normal ambient and anticipated storage and handling conditions of temperature and pressure.

See below "Conditions to avoid".

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10.3 Possibility of hazardous reactions

In case of insufficient ventilation and/or in use, may form flammable/explosive vapour-air mixture.
Strong exothermic reaction with strong alkalis.
Danger of bursting container.

10.4 Conditions to avoid

Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
Take precautionary measures against static discharge.
Use explosion-proof electrical/ventilating/lighting/equipment.
Use only non-sparking tools.

10.5 Incompatible materials

amine, strong oxidiser, alkalis, hypochlorites

10.6 Hazardous decomposition products

Hazardous combustion products: see section 5.
Corrosive gases / vapors.
Carbon monoxide (CO).
Hydrogen.

SECTION 11: Toxicological information

11.1 Information on hazard classes as defined in Regulation (EC) No 1272/2008

If not otherwise specified the classification is based on:

Animal studies; Evidence from any other toxicity tests; Expert judgement (weight of evidence determination).

Classification according to GHS (1272/2008/EC, CLP)

Acute toxicity

Harmful if swallowed.

Toxic if inhaled.

Exposure route	Endpoint	Value	Species	Method	Source
oral	LD50	730 mg/kg	rat	OECD Guideline 401	ECHA
inhalation: vapour	LC50	7.85 mg/l/4h	rat	OECD Guideline 403	ECHA

Skin corrosion/irritation

Causes severe burns.

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Serious eye damage/eye irritation

Causes serious eye damage.

Respiratory or skin sensitisation

Skin sensitisation

Shall not be classified as a skin sensitiser.

Respiratory sensitisation

Shall not be classified as a respiratory or skin sensitiser.

Germ cell mutagenicity

Shall not be classified as germ cell mutagenic.

Carcinogenicity

Shall not be classified as carcinogenic.

Reproductive toxicity

Shall not be classified as a reproductive toxicant.

Specific target organ toxicity - single exposure

Shall not be classified as a specific target organ toxicant (single exposure).

Specific target organ toxicity - repeated exposure

Shall not be classified as a specific target organ toxicant (repeated exposure).

Aspiration hazard

Shall not be classified as presenting an aspiration hazard.

Other information

Corrosive to the respiratory tract.

11.2 Information on other hazards

Endocrine disrupting properties

Not listed.

SECTION 12: Ecological information

12.1 Toxicity

Aquatic toxicity (acute)

Based on available data, the classification criteria are not met.

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Endpoint	Exposure time	Value	Species	Method	Source
EC50	48 h	365 mg/l	daphnia magna	OECD Guideline 202	ECHA
LC50	96 h	130 mg/l	zebra fish (Danio rerio)	OECD Guideline 203	ECHA
LC50	96 h	1,308 mg/l	Crangon crangon	-	ECHA
ErC50	72 h	1,240 mg/l	algae (pseudokirchneriella subcapitata)	OECD Guideline 201	ECHA

Aquatic toxicity (chronic)

Endpoint	Exposure time	Value	Species	Method	Source
NOEC	72 h	<76.8 mg/l	algae (pseudokirchneriella subcapitata)	OECD Guideline 201	ECHA
NOEC	21 d	≥100 mg/l	daphnia magna	OECD Guideline 211	ECHA
NOEC	13 d	72 mg/l	Belebtschlamm, Kommunal	EU method C.3	-
LOEC	72 h	76.8 mg/l	algae (pseudokirchneriella subcapitata)	OECD Guideline 201	ECHA
LOEC	21 d	>100 mg/l	daphnia magna	OECD Guideline 211	ECHA

12.2 Persistence and degradability

Process of degradability			
Process	Degradation rate	Time	Source
oxygen depletion	100 %	14 d	ECHA
DOC removal	99 %	11 d	ECHA

Biodegradation

The substance is readily biodegradable.

Persistence

No data available.

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**12.3 Bioaccumulative potential**

n-octanol/water (log KOW) -0.54 (25 °C)

12.4 Mobility in soil

Henry's law constant 0.019 Pa m³/mol at 25 °C
(ECHA)

The Organic Carbon normalised adsorption coefficient <1.25
(ECHA)

12.5 Results of PBT and vPvB assessment

According to the results of its assessment, this substance is not a PBT or a vPvB.

12.6 Endocrine disrupting properties

Not listed.

12.7 Other adverse effects

Data are not available.

Remarks

Wassergefährdungsklasse, WGK (water hazard class): 1

SECTION 13: Disposal considerations**13.1 Waste treatment methods**

This material and its container must be disposed of as hazardous waste.

Sewage disposal-relevant information

Do not empty into drains.

Waste treatment of containers/packagings

Completely emptied packages can be recycled.
Handle contaminated packages in the same way as the substance itself.

Remarks

Please consider the relevant national or regional provisions.

SECTION 14: Transport information**14.1 UN number or ID number**

ADR/RID	UN1779
IMDG-Code	UN1779
ICAO-TI	UN1779

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**14.2 UN proper shipping name**

ADR/RID	FORMIC ACID
IMDG-Code	FORMIC ACID
ICAO-TI	Formic acid

14.3 Transport hazard class(es)

ADR/RID	8 (3)
IMDG-Code	8 (3)
ICAO-TI	8 (3)

14.4 Packing group

ADR/RID	II
IMDG-Code	II
ICAO-TI	II

14.5 Environmental hazards

-

14.6 Special precautions for user

-

14.7 Maritime transport in bulk according to IMO - instruments**14.8 Information for each of the UN Model Regulations**

Agreement concerning the International Carriage of Dangerous Goods by Road (ADR)
Additional information

Particulars in the transport document	UN1779, FORMIC ACID, 8 (3), II, (D/E)
Classification code	CF1
Danger label(s)	8+3
	
Excepted quantities (EQ)	E2
Limited quantities (LQ)	1 L
Transport category (TC)	2
Tunnel restriction code (TRC)	D/E
Hazard identification No	83

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Emergency Action Code

2W

International Maritime Dangerous Goods Code (IMDG) Additional information

Marine pollutant

-

Danger label(s)

8+3



Excepted quantities (EQ)

E2

Limited quantities (LQ)

1 L

EmS

F-E, S-C

Stowage category

A

Segregation group

1 - Acids.

International Civil Aviation Organization (ICAO-IATA/DGR) Additional information

Danger label(s)

8+3



Excepted quantities (EQ)

E2

Limited quantities (LQ)

0,5 L

SECTION 15: Regulatory information**15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture****Relevant provisions of the European Union (EU)****Restrictions according to REACH, Annex XVII**

Name	Name acc. to inventory	CAS No	Restriction
formic acid	this product meets the criteria for classification in accordance with Regulation No 1272/2008/EC	-	R3
formic acid	flammable / pyrophoric	-	R40
formic acid	substances in tattoo inks and permanent make-up	-	R75

Legend

R3 1. Shall not be used in:

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Legend

- ornamental articles intended to produce light or colour effects by means of different phases, for example in ornamental lamps and ashtrays,
 - tricks and jokes,
 - games for one or more participants, or any article intended to be used as such, even with ornamental aspects,
2. Articles not complying with paragraph 1 shall not be placed on the market.
3. Shall not be placed on the market if they contain a colouring agent, unless required for fiscal reasons, or perfume, or both, if they:
- can be used as fuel in decorative oil lamps for supply to the general public, and
 - present an aspiration hazard and are labelled with H304.
4. Decorative oil lamps for supply to the general public shall not be placed on the market unless they conform to the European Standard on Decorative oil lamps (EN 14059) adopted by the European Committee for Standardisation (CEN).
5. Without prejudice to the implementation of other Union provisions relating to the classification, labelling and packaging of substances and mixtures, suppliers shall ensure, before the placing on the market, that the following requirements are met:
- (a) lamp oils, labelled with H304, intended for supply to the general public are visibly, legibly and indelibly marked as follows: "Keep lamps filled with this liquid out of the reach of children"; and, by 1 December 2010, "Just a sip of lamp oil – or even sucking the wick of lamps – may lead to life-threatening lung damage";
 - (b) grill lighter fluids, labelled with H304, intended for supply to the general public are legibly and indelibly marked by 1 December 2010 as follows: 'Just a sip of grill lighter fluid may lead to life threatening lung damage';
 - (c) lamps oils and grill lighters, labelled with H304, intended for supply to the general public are packaged in black opaque containers not exceeding 1 litre by 1 December 2010.;
- R40
1. Shall not be used, as substance or as mixtures in aerosol dispensers where these aerosol dispensers are intended for supply to the general public for entertainment and decorative purposes such as the following:
- metallic glitter intended mainly for decoration,
 - artificial snow and frost,
 - 'whoopie' cushions,
 - silly string aerosols,
 - imitation excrement,
 - horns for parties,
 - decorative flakes and foams,
 - artificial cobwebs,
 - stink bombs.
2. Without prejudice to the application of other Community provisions on the classification, packaging and labelling of substances, suppliers shall ensure before the placing on the market that the packaging of aerosol dispensers referred to above is marked visibly, legibly and indelibly with:
- 'For professional users only'.
3. By way of derogation, paragraphs 1 and 2 shall not apply to the aerosol dispensers referred to Article 8 (1a) of Council Directive 75/324/EEC (2).
4. The aerosol dispensers referred to in paragraphs 1 and 2 shall not be placed on the market unless they conform to the requirements indicated.

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Legend

- R75 1. Shall not be placed on the market in mixtures for use for tattooing purposes, and mixtures containing any such substances shall not be used for tattooing purposes, after 4 January 2022 if the substance or substances in question is or are present in the following circumstances:
- (a) in the case of a substance classified in Part 3 of Annex VI to Regulation (EC) No 1272/2008 as carcinogen category 1A, 1B or 2, or germ cell mutagen category 1A, 1B or 2, the substance is present in the mixture in a concentration equal to or greater than 0,00005 % by weight;
 - (b) in the case of a substance classified in Part 3 of Annex VI to Regulation (EC) No 1272/2008 as reproductive toxicant category 1A, 1B or 2, the substance is present in the mixture in a concentration equal to or greater than 0,001 % by weight;
 - (c) in the case of a substance classified in Part 3 of Annex VI to Regulation (EC) No 1272/2008 as skin sensitiser category 1, 1A or 1B, the substance is present in the mixture in a concentration equal to or greater than 0,001 % by weight;
 - (d) in the case of a substance classified in Part 3 of Annex VI to Regulation (EC) No 1272/2008 as skin corrosive category 1, 1A, 1B or 1C or skin irritant category 2, or as serious eye damage category 1 or eye irritant category 2, the substance is present in the mixture in a concentration equal to or greater than:
 - (i) 0,1 % by weight, if the substance is used solely as a pH regulator;
 - (ii) 0,01 % by weight, in all other cases;
 - (e) in the case of a substance listed in Annex II to Regulation (EC) No 1223/2009 (*1), the substance is present in the mixture in a concentration equal to or greater than 0,00005 % by weight;
 - (f) in the case of a substance for which a condition of one or more of the following kinds is specified in column g (Product type, Body parts) of the table in Annex IV to Regulation (EC) No 1223/2009, the substance is present in the mixture in a concentration equal to or greater than 0,00005 % by weight:
 - (i) "Rinse-off products";
 - (ii) "Not to be used in products applied on mucous membranes";
 - (iii) "Not to be used in eye products";
 - (g) in the case of a substance for which a condition is specified in column h (Maximum concentration in ready for use preparation) or column i (Other) of the table in Annex IV to Regulation (EC) No 1223/2009, the substance is present in the mixture in a concentration, or in some other way, that does not accord with the condition specified in that column;
 - (h) in the case of a substance listed in Appendix 13 to this Annex, the substance is present in the mixture in a concentration equal to or greater than the concentration limit specified for that substance in that Appendix.
2. For the purposes of this entry use of a mixture "for tattooing purposes" means injection or introduction of the mixture into a person's skin, mucous membrane or eyeball, by any process or procedure (including procedures commonly referred to as permanent make-up, cosmetic tattooing, micro-blading and micro-pigmentation), with the aim of making a mark or design on his or her body.
3. If a substance not listed in Appendix 13 falls within more than one of points (a) to (g) of paragraph 1, the strictest concentration limit laid down in the points in question shall apply to that substance. If a substance listed in Appendix 13 also falls within one or more of points (a) to (g) of paragraph 1, the concentration limit laid down in point (h) of paragraph 1 shall apply to that substance.
4. By way of derogation, paragraph 1 shall not apply to the following substances until 4 January 2023:
- (a) Pigment Blue 15:3 (CI 74160, EC No 205-685-1, CAS No 147-14-8);
 - (b) Pigment Green 7 (CI 74260, EC No 215-524-7, CAS No 1328-53-6).
5. If Part 3 of Annex VI to Regulation (EC) No 1272/2008 is amended after 4 January 2021 to classify or re-classify a substance such that the substance then becomes caught by point (a), (b), (c) or (d) of paragraph 1 of this entry, or such that it then falls within a different one of those points from the one within which it fell previously, and the date of application of that new or revised classification is after the date referred to in paragraph 1 or, as the case may be, paragraph 4 of this entry, that amendment shall, for the purposes of applying this entry to that substance, be treated as taking effect on the date of application of that new or revised classification.
6. If Annex II or Annex IV to Regulation (EC) No 1223/2009 is amended after 4 January 2021 to list or change the listing of a substance such that the substance then becomes caught by point (e), (f) or (g) of paragraph 1 of this entry, or such that it then falls within a different one of those points from the one within which it fell previously, and the amendment takes effect after the date referred to in paragraph 1 or, as the case may be, paragraph 4 of this entry, that amendment shall, for the purposes of applying this entry to that substance, be treated as taking

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Legend

effect from the date falling 18 months after entry into force of the act by which that amendment was made.

7. Suppliers placing a mixture on the market for use for tattooing purposes shall ensure that, after 4 January 2022, the mixture is marked with the following information:

- (a) the statement "Mixture for use in tattoos or permanent make-up";
- (b) a reference number to uniquely identify the batch;
- (c) the list of ingredients in accordance with the nomenclature established in the glossary of common ingredient names pursuant to Article 33 of Regulation (EC) No 1223/2009, or in the absence of a common ingredient name, the IUPAC name. In the absence of a common ingredient name or IUPAC name, the CAS and EC number. Ingredients shall be listed in descending order by weight or volume of the ingredients at the time of formulation. "Ingredient" means any substance added during the process of formulation and present in the mixture for use for tattooing purposes. Impurities shall not be regarded as ingredients. If the name of a substance, used as ingredient within the meaning of this entry, is already required to be stated on the label in accordance with Regulation (EC) No 1272/2008, that ingredient does not need to be marked in accordance with this Regulation;
- (d) the additional statement "pH regulator" for substances falling under point (d)(i) of paragraph 1;
- (e) the statement "Contains nickel. Can cause allergic reactions." if the mixture contains nickel below the concentration limit specified in Appendix 13;
- (f) the statement "Contains chromium (VI). Can cause allergic reactions." if the mixture contains chromium (VI) below the concentration limit specified in Appendix 13;
- (g) safety instructions for use insofar as they are not already required to be stated on the label by Regulation (EC) No 1272/2008.

The information shall be clearly visible, easily legible and marked in a way that is indelible.

The information shall be written in the official language(s) of the Member State(s) where the mixture is placed on the market, unless the Member State(s) concerned provide(s) otherwise.

Where necessary because of the size of the package, the information listed in the first subparagraph, except for point (a), shall be included instead in the instructions for use.

Before using a mixture for tattooing purposes, the person using the mixture shall provide the person undergoing the procedure with the information marked on the package or included in the instructions for use pursuant to this paragraph.

8. Mixtures that do not contain the statement "Mixture for use in tattoos or permanent make-up" shall not be used for tattooing purposes.

9. This entry does not apply to substances that are gases at temperature of 20 °C and pressure of 101,3 kPa, or generate a vapour pressure of more than 300 kPa at temperature of 50 °C, with the exception of formaldehyde (CAS No 50-00-0, EC No 200-001-8).

10. This entry does not apply to the placing on the market of a mixture for use for tattooing purposes, or to the use of a mixture for tattooing purposes, when placed on the market exclusively as a medical device or an accessory to a medical device, within the meaning of Regulation (EU) 2017/745, or when used exclusively as a medical device or an accessory to a medical device, within the same meaning. Where the placing on the market or use may not be exclusively as a medical device or an accessory to a medical device, the requirements of Regulation (EU) 2017/745 and of this Regulation shall apply cumulatively.

List of substances subject to authorisation (REACH, Annex XIV) / SVHC - candidate list

Not listed.

Seveso Directive

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2012/18/EU (Seveso III)				
No	Dangerous substance/hazard categories	Qualifying quantity (tonnes) for the application of lower and upper-tier requirements		Notes
H2	acute toxic (cat. 2 + cat. 3, inhal.)	50	200	41)
P5c	flammable liquids (cat. 2, 3)	5,000	50,000	51)

Notation

- 41) - category 2, all exposure routes
 - category 3, inhalation exposure route
- 51) flammable liquids, categories 2 or 3 not covered by P5a and P5b

Directive on the restriction of the use of certain hazardous substances in electrical and electronic equipment (RoHS)

Not listed.

Regulation on the marketing and use of explosives precursors

Not listed.

Regulation on drug precursors

Not listed.

Regulation on substances that deplete the ozone layer (ODS)

Not listed.

Regulation concerning the export and import of hazardous chemicals (PIC)

Not listed.

Regulation on persistent organic pollutants (POP)

Not listed.

National inventories

Country	Inventory	Status
AU	AICS	substance is listed
CA	DSL	substance is listed
CN	IECSC	substance is listed
EU	ECSI	substance is listed
EU	REACH Reg.	substance is listed

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Country	Inventory	Status
JP	CSCL-ENCS	substance is listed
KR	KECI	substance is listed
MX	INSQ	substance is listed
NZ	NZIoC	substance is listed
PH	PICCS	substance is listed
TR	CICR	substance is listed
TW	TCSI	substance is listed
US	TSCA	substance is listed

Legend

AICS	Australian Inventory of Chemical Substances
CICR	Chemical Inventory and Control Regulation
CSCL-ENCS	List of Existing and New Chemical Substances (CSCL-ENCS)
DSL	Domestic Substances List (DSL)
ECSI	EC Substance Inventory (EINECS, ELINCS, NLP)
IECSC	Inventory of Existing Chemical Substances Produced or Imported in China
INSQ	National Inventory of Chemical Substances
KECI	Korea Existing Chemicals Inventory
NZIoC	New Zealand Inventory of Chemicals
PICCS	Philippine Inventory of Chemicals and Chemical Substances (PICCS)
REACH Reg.	REACH registered substances
TCSI	Taiwan Chemical Substance Inventory
TSCA	Toxic Substance Control Act

15.2 Chemical Safety Assessment

No Chemical Safety Assessment has been carried out for this substance by the supplier.

SECTION 16: Other information**Indication of changes (revised safety data sheet)**

Section	Former entry (text/value)	Actual entry (text/value)
1.1	-	Identification of the substance: formic acid
1.1	-	Index number in CLP Annex VI: 607-001-00-0

Formic acid 90-100%



Section	Former entry (text/value)	Actual entry (text/value)
1.3	Details of the supplier of the safety data sheet: CG CHEMIKALIEN GmbH & Co. KG Ulmer Str. 1 30880 Laatzen Germany Telephone: +49 (0)511 87803-0 Telefax: +49 (0)511 87803-66CHEM - DIS Chemiedistribution GmbH Bahnhofstraße 29 07607 Eisenberg Germany Telephone:++49 (0) 36691 - 8649-0 Telefax:++49 (0) 36691 - 8649-20CSC JÄKLECHEMIE GmbH & Co. KG Matthiasstr. 10 - 12 90431 Nürnberg Germany Telephone:++49 (0) 911-32646 -0 Telefax++49 (0) 911-32646 -160Reher & Ramsden Nachflg. GmbH & Co. KG Rubbtertstr. 44 21109 Hamburg Germany telephone:++49 (0) 40 - 751996-0 Telefax:++49 (0) 40 - 751996-77Reininghaus- Chemie GmbH & Co. KG Joachimstr. 122-124 45309 Essen Germany Telephone: ++49 (0) 201 - 55780-0 Telefax: ++49 (0) 201 - 55780-50	Details of the supplier of the safety data sheet
1.3	-	Details of the supplier of the safety data sheet: change in the listing (table)
1.3	e-mail (competent person): qm@cg-chemikalien.de	e-mail (competent person): rac@cg-chemikalien.de
1.3	National contact: Abteilung Labor/REACH - (Frau Carina Bufe/Herr Dr. Koelman) +49 (0) 511 - 878 03 - 123/141	National contact: Abteilung Regulatory Affairs and Compliance +49 (0) 511 - 878 03 - 123
3.1	-	Index No: 607-001-00-0

Formic acid 90-100%



Section	Former entry (text/value)	Actual entry (text/value)
3.1	-	concentration limit, M-factor, ATE: change in the listing (table)
8.1	-	Relevant DNELs and other threshold levels: change in the listing (table)
15.1	-	Restrictions according to REACH, Annex XVII: change in the listing (table)

Abbreviations and acronyms

Abbr.	Descriptions of used abbreviations
2006/15/EC	Commission Directive establishing a second list of indicative occupational exposure limit values in implementation of Council Directive 98/24/EC and amending Directives 91/322/EEC and 2000/39/EC
ADR	Accord relatif au transport international des marchandises dangereuses par route (Agreement concerning the International Carriage of Dangerous Goods by Road)
ATE	Acute Toxicity Estimate
CAS	Chemical Abstracts Service (service that maintains the most comprehensive list of chemical substances)
CLP	Regulation (EC) No 1272/2008 on classification, labelling and packaging of substances and mixtures
DGR	Dangerous Goods Regulations (see IATA/DGR)
DNEL	Derived No-Effect Level
EC50	Effective Concentration 50 %. The EC50 corresponds to the concentration of a tested substance causing 50 % changes in response (e.g. on growth) during a specified time interval
EC No	The EC Inventory (EINECS, ELINCS and the NLP-list) is the source for the seven-digit EC number, an identifier of substances commercially available within the EU (European Union)
EH40/2005	EH40/2005 Workplace exposure limits (http://www.nationalarchives.gov.uk/doc/open-government-licence/)
EINECS	European Inventory of Existing Commercial Chemical Substances
ELINCS	European List of Notified Chemical Substances
EmS	Emergency Schedule
ErC50	≡ EC50: in this method, that concentration of test substance which results in a 50 % reduction in either growth (EbC50) or growth rate (ErC50) relative to the control
GHS	"Globally Harmonized System of Classification and Labelling of Chemicals" developed by the United Nations
IATA	International Air Transport Association

Formic acid 90-100%



Abbr.	Descriptions of used abbreviations
IATA/DGR	Dangerous Goods Regulations (DGR) for the air transport (IATA)
ICAO	International Civil Aviation Organization
ICAO-TI	Technical instructions for the safe transport of dangerous goods by air
IMDG	International Maritime Dangerous Goods Code
IMDG-Code	International Maritime Dangerous Goods Code
index No	The Index number is the identification code given to the substance in Part 3 of Annex VI to Regulation (EC) No 1272/2008
IOELV	Indicative occupational exposure limit value
LC50	Lethal Concentration 50%: the LC50 corresponds to the concentration of a tested substance causing 50 % lethality during a specified time interval
LD50	Lethal Dose 50 %: the LD50 corresponds to the dose of a tested substance causing 50 % lethality during a specified time interval
LOEC	Lowest Observed Effect Concentration
M-factor	Means a multiplying factor. It is applied to the concentration of a substance classified as hazardous to the aquatic environment acute category 1 or chronic category 1, and is used to derive by the summation method the classification of a mixture in which the substance is present
NLP	No-Longer Polymer
NOEC	No Observed Effect Concentration
PBT	Persistent, Bioaccumulative and Toxic
PNEC	Predicted No-Effect Concentration
ppm	Parts per million
REACH	Registration, Evaluation, Authorisation and Restriction of Chemicals
RID	Règlement concernant le transport International ferroviaire des marchandises Dangereuses (Regulations concerning the International carriage of Dangerous goods by Rail)
STEL	Short-term exposure limit
SVHC	Substance of Very High Concern
TWA	Time-weighted average
vPvB	Very Persistent and very Bioaccumulative
WEL	Workplace exposure limit

Formic acid 90-100%



Key literature references and sources for data

Regulation (EC) No 1272/2008 on classification, labelling and packaging of substances and mixtures.
Regulation (EC) No. 1907/2006 (REACH).

Agreement concerning the International Carriage of Dangerous Goods by Road (ADR).

Regulations concerning the International Carriage of Dangerous Goods by Rail (RID).

International Maritime Dangerous Goods Code (IMDG).

Dangerous Goods Regulations (DGR) for the air transport (IATA).

List of relevant phrases (code and full text as stated in section 2 and 3)

Code	Text
H226	Flammable liquid and vapour.
H302	Harmful if swallowed.
H314	Causes severe skin burns and eye damage.
H318	Causes serious eye damage.
H331	Toxic if inhaled.

Responsible for the safety data sheet

C.S.B. GmbH
Düsseldorfer Str. 113
47809 Krefeld, Germany

Telephone: +49 (0) 2151 - 652086 - 0
Telefax: +49 (0) 2151 - 652086 - 9
e-Mail: info@csb-compliance.com
Website: www.csb-compliance.com

Disclaimer

This information is based upon the present state of our knowledge.

This SDS has been compiled and is solely intended for this product.

Shipper
LEXZAU, SCHARBAU GMBH & CO. KG
KAP-HORN-STR. 18,
28237 BREMEN, GERMANY
TAX ID: DE 114624125

Consigned to order of
LESCHACO MEXICANA,S.A. DE C.V.
BLVD. MANUEL AVILA CAMACHO
NO. 88-PISO 8
COL. LOMAS DE CHAPULTEPEC
11000 MEXICO, D.F., MEXICO
TEL.: +52(55)59550000
RFC: LME980116R15

Notify Party and address
LESCHACO MEXICANA,S.A. DE C.V.
BLVD. MANUEL AVILA CAMACHO
NO. 88-PISO 8
COL. LOMAS DE CHAPULTEPEC
11000 MEXICO, D.F., MEXICO
TEL.: +52(55)59550000
RFC: LME980116R15

		Place of receipt CFS BREMEN	
Ocean vessel DIMITRA C		Port of loading HAMBURG	
Port of discharge ALTAMIRA	Place of delivery CFS ALTAMIRA	Freight payable BREMEN	Number of original Bills of Lading 0/ZERO
Marks and Nos.	Quantity of Goods	Description of Goods	Said to contain
CARGO DETAILS AS PER ATTACHED STATEMENT			
Gross weight, kg.			
Measurement, m ³			

B/L No.
ALM249741 - A

FMC Organization No. 025875



General Agent
SACO Shipping GmbH
Wollkaemmereistrasse 1
21107 Hamburg - Germany

3/07/BRE/526907

ALL COSTS, CHARGES,
LIABILITIES AND DELAYS
RESULTING FROM EMERGENCY
QUARANTINE FOR WOOD AND
WOODEN PACKAGING OR FROM
INSUFFICIENT OR IMPROPER
LABELLING OF NON WOODEN
PACKAGING ARE FOR
CUSTOMER'S ACCOUNT

Copy

FREIGHT PREPAID - SHIPPED ON BOARD - EXPRESS RELEASE

All particulars above declared by Merchant

For delivery of cargo please apply to:

INTERTEAM, S.A. DE C.V.
SERVIC. INTERNACION. DE COMERCIO
COLIMA 114 DESPACHO 201
COLONIA ROMA,C.P.06700, MEXICO DF
PH: 514-69 15 FX: 208-79-8
INT-961206-ES7

Declared Value of the Goods (see clause 12)
US\$
Ad valorem freight paid:

Note:

The Merchant's attention is called to the fact that according to Clauses 11 to 13 of this Bill of Lading, the liability of the Carrier is, in most cases, limited in respect of loss of or damage to the goods and delay

RECEIVED for shipment the above mentioned Goods in apparent good order and condition as far as could be ascertained by exercising reasonable means of checking or as stated above.

The Carrier in accordance with the provisions contained on this side and on the reverse side of this document;

- undertakes to perform or to procure the performance of the entire transport from the place at which the Goods are taken in charge to the place designated for delivery in this document, and
- assumes liability as prescribed in this document for such transport.

One of the Bills of Lading to be surrendered duly endorsed in exchange for the Goods or delivery order.

IN WITNESS whereof three (3) original Bills of Lading have been signed, if not otherwise stated above, one of which being accomplished the other(s) to be void.

Place and date of issue
BREMEN 14.07.2023

Signed for the Carrier



SACO Shipping GmbH

as agent of carrier SACO SHIPPING LINE LIMITED

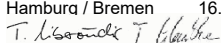
Marks and Nos.	Quantity of Goods	Description of Goods	Said to contain	Gross weight, kg.	Measurement, m ³
0028264152 0011500882 ALTAMIRA	13 PALLET CP5 HEAT	TREATED 13 FIBREBOARD BOXES POWERSIL 310 C6 MH L7-0/7040 700KG CARTON HS CODE: 39100000		9448,400	10,048
STOWED INTO CONTAINER NO.: TGCU5192013				SEAL : WWA030053847	
SYMRISE MEX ALTAMIRA 4500854126	10 PALLETS	10 IBC COMPOSITE UN 31HA1 FORMIC ACID 99/100% HS CODE: 29151100 UN 1779, FORMIC ACID, 8 (3), II, (+49.00 C C.C.), IMDG-CODE SEGREGATION GROUP 1-ACIDS		12600,000	14,302
STOWED INTO CONTAINER NO.: TRHU7015737				SEAL : WWA030053848	
TOTAL		23 PACKAGES		22048,400 KGS	24,350 CBM

- A

MULTI MODAL DANGEROUS GOODS FORM

This form may be used as a dangerous goods declaration as it meets the requirements of SOLAS 74, Chapter VII, regulation 4;

MARPOL 73/78, Annex III, regulation 4

Shipper/Consignor/Sender Nuova Transports Spa Via delle Arti 24 I-20863 Concorezzo Italy	Page 1 of 1 Pages		Freight Forwarder's reference 230608122803		
Consignee SYMRISE S DE RL DE CV Y/O AGENTE ADUANAL DE AMERICANA (SYM-750430-R87) ALTAMIRA TAMPICO GUADALUPE ALONSO AV. RIO TAMESI KM 0+700	Carrier Saco Shipping Line, Limassol				
	Vessel Santa Viola (033W)		<table border="1"> <tr> <td data-bbox="1161 451 1339 520"> Port of loading Hamburg </td> <td data-bbox="1339 451 1508 520"> Port of discharge Altamira </td> </tr> </table>		Port of loading Hamburg
Port of loading Hamburg	Port of discharge Altamira				
CONTAINER/VEHICLE PACKING CERTIFICATE I hereby declare that the goods described below have been packed/loaded into the container/vehicle identified below in accordance with the applicable provisions. MUST BE COMPLETED AND SIGNED FOR ALL CONTAINER/VEHICLE LOADS BY PERSON RESPONSIBLE FOR PACKING/LOADING Name/status, company Place and Date: Signature of packer		SHIPPER'S DECLARATION I hereby declare that the contents of this consignment are fully and accurately described below by the proper shipping name, and are classified, packaged, marked and labelled/placarded and are in all respects in proper condition for transport according to the applicable international and national government regulations. Name/status, company Lexzau, Scharbau on behalf of Nuova Transports, Concorezzo Place and Date: Hamburg / Bremen 16.06.2023  Signature on behalf of shipper Thomas Liberoudis / Timo Glaubke			
No.	Number & kind of packages	Description of goods	Gross mass		
1) 1 pallet = 2 plastic jerrican UN 3H1 = 1 plastic drum UN 1H1	pallet weight: 19,500 kg UN 1197 EXTRACTS, LIQUID (LIMONENE), 3, III, (+49,0°C c.c.), MARINE POLLUTANT, EmS: F-E,S-D Emergency Contact: Capua 1880 S.r.l. 24-hours no.+39 348 3852 033 Cargo gross/net weight: 105,400kg / 100,000kg UN 1197 EXTRACTS, LIQUID (LIMONENE), 3, III, (+56,0°C c.c.), MARINE POLLUTANT, EmS: F-E,S-D Emergency Contact: Capua 1880 S.r.l. 24-hours no.+39 348 3852 033 Cargo gross/net weight: 105,000kg / 100,000kg			Gross weight: 105,400 kg Gross weight: 105,000 kg	

BERGAMOT OIL IT. NEW CROP
Ref. 19416

Version 3RME13 (Revision Number: 3 - Revision Date: January 20, 2023)

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1. IDENTIFICATION OF THE SUBSTANCE AND OF THE COMPANY/UNDERTAKING
1.1 Product identification

product (trade name): **Bergamot Oil It. New Crop - Ref. 19416**
 EC name/registration name: Bergamot, ext.
 EC number: 289-612-9
 CAS number (EC inventory): 89957-91-5
 REACh registration number: 01-2120117613-65-0000

1.2 Relevant identified uses of the substance and uses advised against

relevant uses: odour agent / flavouring agent - ingredient for industrial manufacturing.
 uses advised against: not for personal use in this form or concentration.

1.3 Details of the supplier of the safety data sheet

company: CAPUA 1880 s.r.l. - Zona Industriale, 89052 Campo Calabro (RC) - ITALY • www.webcapua.com
 telephone number: phone: +390965793901 • fax: +390965797111/757792
 responsible person: Dr. Gianfranco Capua (CEO) • phone: +3909657939236 • mail: sales@webcapua.com
 manufacturing plant: Zona Industriale, 89052 Campo Calabro (RC) - ITALY
 competent person SDS: mail: legis@webcapua.com

1.4 Emergency telephone number

supplier: available on office hours: 9:30÷17:03 (GMT+1) phone: +390965793901
 (languages: IT, EN, FR, DE, ES) - other time: +393483852033 (languages: IT, EN, FR).
 poison control center: Azienda Ospedaliera Niguarda Ca' Granda (MILANO - ITALY) +390266101029
 (languages: IT, EN).

2. HAZARDS IDENTIFICATION
2.1 Classification of the substance

Reg. (EC) No 1272/2008:	Flam. Liq. 3	Asp. Tox. 1	Skin Irrit. 2	Skin Sens. 1	Eye Irrit. 2	Aquatic Chronic 3
hazard categories:	FL3	AH1	SCI2	SS1	EDI2A	EHC3
hazard statements:	H226	H304	H315	H317	H319	H412
hazard pictograms:	GHS02	GHS08	GHS07			-

2.2 Label elements

hazard pictograms:



signal word: danger
 hazard statements: H226, H304, H315, H317, H319, H412
 precautionary statement: P210, P280, P331, P301/310, P302/352, P305/351/338, P273

2.2.1 Additional information

for full text of relevant hazard and precautionary statements see section 16-d.

2.3 Other hazards

because of potential presence of various furocoumarins the product can have phototoxic effects (skin)

3. COMPOSITION/INFORMATION ON INGREDIENTS
3.1 Substance

botanical origin: *Citrus bergamia*, RISSO et POITEAU
 production process: obtained by physical means from the outer part of fresh bergamot fruits peel.
 status: 100% Natural Complex Substance
 EU name: Bergamot, ext.
 EC number: 289-612-9
 CAS number (EC inventory): 89957-91-5
 other CAS number: 8007-75-8

3.1.1 Substance: main constituents & typical values

common name	EINECS	CAS	hazards classification	range (%)
D-limonene	227-813-5	5989-27-5	AH1, EHC1, FL3, SCI2, SS1B	20÷55
linalool	201-134-4	78-70-6	ATO5, EDI2A, FL4, SCI2	3÷45
linalyl acetate	204-116-4	115-95-7	EDI2A, FL4, SCI2	15÷40
β-pinene	204-872-5	127-91-3	AH1, FL3, SCI2, SS1B	3÷12
γ-terpinene	202-794-6	99-85-4	AH1, FL3, SCI3	2÷12
α-pinene	201-291-9	80-56-8	AH1, FL3, SCI2, SS1B, ATO5	0.5÷4
β-myrcene	204-622-5	123-35-3	AH1, EDI2A, FL3, SCI2	0.5÷2.5

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4. FIRST AID MEASURES**4.1 Description of first aid measures**

- inhalation: move outdoor and breath fresh air for at least 15 minutes - in case of complaints seek medical attention.
- contact with the skin: remove contaminated clothing and wash with water and soap the contaminated part - make sure you have eliminated the contamination - in case of complaints seek medical attention.
- contact with the eyes: abundant eye-wash for several minutes with pure water, make sure you have eliminated the contamination - in case of persistent eye irritation seek medical attention.
- ingestion: ask **immediately** medical assistance - mouth washing with water and **do not provoke vomiting**.

4.2 Most important symptoms and effects, both acute and delayed

- symptoms: inhalation: can cause slight headache - contact: can cause eye irritation - can cause slight skin rash.
- acute and delayed effects: no post-disorder effects are reported.

4.3 Indication of any immediate medical attention and special treatment needed

- immediate medical assistance: see point 4.1.
- immediate/special treatment: see point 4.1.
- first aid specific means: eye wash fountain / safety shower should be available in the work area.

5. FIREFIGHTING MEASURES**5.1 Extinguishing media**

- suitable extinguishing media: SMALL FIRE: use CO₂, foam, dry powder - LARGE FIRE: use water spray or fog - cool containing vessels with water jet in order to prevent pressure build-up, autoignition or explosion.
- unsuitable extinguishing media: pressurized water jet.

5.2 Special hazards arising from the substance

- vapours may form explosive mixture with air - in case of fire, the following can be released: carbon monoxide (CO), carbon dioxide (CO₂), smoke, soot.

5.3 Advice for firefighters

- standard procedure for chemical fires - spray extinguishing media to base of flames - use adequate protections for respiratory apparatus and protection bodysuits.

6. ACCIDENTAL RELEASE MEASURES**6.1 Personal precautions, protective equipment and emergency procedures**

- for non emergency personnel: in case of unintentional important release of the product in enclosed space use respiratory protection (Gas filter A, Colour code brown: consider the maximum duration for wear) must be worn. Use insulating device for respiratory protection with an independent air supply in circumstances which are unclear - use adequate protections solvent resistant: security shoes, bodysuit, gloves and protective goggles solvent-resistant (see section 8).
- for emergency responders: as per non-emergency personnel.
- emergency procedures: remove any ignition source and ensure adequate ventilation in working areas following accidental releases.

6.2 Environmental precautions

- keep away from drains - keep away from surface and ground water.

6.3 Methods and material for containment and cleaning up

- keep away from heat and use non-combustible absorbing sawdust (sand, specific binder) - using suitable pumping systems for inflammable materials. Refer to section 13 for the appropriate methods of waste treatment.

6.4 Reference to other sections

- section 4, 8 & 13

7. HANDLING AND STORAGE**7.1 Precautions for safe handling**

- safe handling: during handling keep original container closed - avoid contact with skin and eyes - wear adequate protective gloves and eye/face protection - avoid to place or handle near any sources of ignition - avoid exposing to high temperature during processing - maintain adequate local and general ventilation where product is handled.
- hygiene at work: do not ingest or apply to the skin as such - no smoking - remove contaminated clothing - good personal washing routines should be followed - if at risk of contamination, foods, beverages and other articles of consumption must not be stored or consumed at the work areas.

7.2 Conditions for safe handling, including any incompatibilities

- container: to be stored in stainless steel drums, preferably under inert atmosphere (nitrogen) with minimum head space, protected from day-light. • **take note:** the container used during transportation must be considered only as a temporary container and it must not be considered in any case adequate for medium or long term warehousing.
- conditions: stored in a dry, aerated place, away from any heat source and ignition source.
- temperature: from 5 °C to 21 °C.

7.3 Specific end uses

- use as odour agent / flavouring agent - the information of this section are not related to the use of the product in combination with any other material or any other process altering its characteristics.

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8. EXPOSURE CONTROL/PERSONAL PROTECTION
8.1 Control parameters

refer to the Exposure Scenario document in Annex I.

8.2 Exposure control

refer to the Exposure Scenario document in Annex I.

8.2.1 Appropriate engineering controls

where appropriate, use closed system to transfer and/or process this material - if appropriate, isolate mixing rooms and other areas where this material is used or openly handled - maintain these areas under negative air pressure relative to the rest of the plant.

8.2.2 Individual protection measures, such as personal protective equipment


eye/face protection:

protective goggles with built-in-frame tested to EN166 (should be checked regularly).



skin protection - hand:

suitable gloves tested to EN374 (should be checked regularly) - always use with clean, dry hands.



skin protection - other:

protective work clothing solvent resistant (should be checked regularly).

respiratory protection:

not necessary in adequate local with general ventilation - avoid breathing vapors.

thermal hazards:

none.

8.2.3 Environmental exposure controls

the usual precautions for safe handling have to be observed.

9. PHYSICAL AND CHEMICAL PROPERTIES
9.1 Information on basic physical and chemical properties

appearance: liquid – colorless – yellow/green

odour: citrusy

odour threshold: N/D

pH: N/A

initial boiling point (& range): N/A

melting point/freezing point: < -30°C at 101.3 kPa

flash point: 56 °C

evaporation rate: N/D

upper/lower explosive limits: N/D

vapour pressure: 123.1 Pa at 25 °C

vapour density: N/D

relative density d_{4}^{20} : 0.8678 at 20°C (±0.02)solubility: in alcohol & other oils • 87% of the substance have solubility > 40 mg/L into H₂Opartition coefficient n-octanol/H₂O: 4.38 at 25°C for the component D-Limonene; 3.38 at 25°C for the component Linalool; 4.39 at 25°C for the component Linalyl acetate.

auto-ignition temperature: 235°C at 101.89 kPa.

decomposition temperature: N/D

viscosity: N/D

explosive properties: none

oxidizing properties: none

9.2 Other information

N/D

10. STABILITY AND REACTIVITY
10.1 Reactivity

This substance does not react with water - the substance is unreactive if it is stored according to the recommendations in point 7 and in accordance with the identified uses (see subsection 1.2).

10.2 Chemical stability

stable substance when stored according to recommendations in Section 7 and in accordance with the identified uses (see subsection 1.2). • **shelf life:** 365 days from the date of production, in the recommended storage conditions (see Section 7).

10.3 Possibility of hazardous reactions

none if used according to storage & handling conditions (see Section 7) & identified uses (see subsection 1.2).

10.4 Conditions to avoid

avoid exposure to any heat source.

10.5 Incompatible materials

avoid exposure to highly oxidizing agents.

10.6 Hazardous decomposition products

no known hazardous decomposition products under recommended storage & handling conditions - in case of combustion: carbon monoxide (CO), carbon dioxide (CO₂).

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11. TOXICOLOGICAL INFORMATION
11.1 Information on toxicological effects

acute toxicity (oral):	LD50: > 10000 mg/kg bw (male) (method: rat (albino) gavage – equivalent Guideline 401 OECD).
acute toxicity (dermal):	LD50: > 20000 mg/kg bw (method: rabbit (albino) – OECD Guideline 402).
acute toxicity (other routes):	not determined.
severe eyes damages/irritations:	not determined.
respiratory sensitization:	not determined.
dermal sensitization:	considered as a skin sensitizer due to the content of limonene and linalool
mutagenicity:	no adverse effect observed (negative).
carcinogenicity:	not determined.
toxicity for reproduction:	oral route: adverse effect observed NOAEL: 365 mg/kg bw/day (rat) (read across with coriander oil study - Owner company: Lorillard, Inc. - Report date: 1989-04-12) . oral route: adverse effect observed NOAEL: 365 mg/kg bw/day (rat) (read across with coriander oil study - Owner company: Lorillard, Inc. - Report date: 1989-04-12)
developmental toxicity:	oral route: target organs: urogenital: kidneys; digestive: stomach NOAEL: 117 mg/kg bw/day (subacute; rat)
STOT-exp. repeated :	not determined
STOT-exp. single :	not determined
aspiration hazard:	can be fatal if swallowed and enters airways due to volatiles hydrocarbons content >10%

Based on available information on Bergamot oil and its constituents, Bergamot oil is expected to be readily and fully absorbed by the oral route (approximately 100%). Dermal absorption is expected to be lower. However, as no specific information is available on the extent of dermal and inhalation absorption, this is assumed to be comparable to oral absorption as a worst case. For risk assessment purposes, the absorption after oral, dermal and inhalation exposure are therefore assumed to be identical and route-to-route extrapolation from the oral to inhalation and dermal route is not required.

12. ECOLOGICAL INFORMATION
12.1 Toxicity

aquatic environment:	Harmful to aquatic life with long lasting effects.
acute - fish	
(semi-static freshwater):	LL50 (24 h): 57 mg/L test mat. (nominal) - <i>Oncorhynchus mykiss</i> - metodo OECD Guideline 203 (Fish, Acute Toxicity Test) LL50 (48 h): 18 mg/L test mat. (nominal) - <i>Oncorhynchus mykiss</i> - metodo OECD Guideline 203 (Fish, Acute Toxicity Test) LL50 (72 h): 18 mg/L test mat. (nominal) - <i>Oncorhynchus mykiss</i> - metodo OECD Guideline 203 (Fish, Acute Toxicity Test) LL50 (96 h): 18 mg/L test mat. (nominal) - <i>Oncorhynchus mykiss</i> - metodo OECD Guideline 203 (Fish, Acute Toxicity Test)
acute - aquatic invertebrates	
(static freshwater):	EL50 (24 h): 60 mg/L test mat. - OECD Guideline 202 (Daphnia sp. Acute Immobilisation Test) EL50 (48 h): 33 mg/L test mat. - OECD Guideline 202 (Daphnia sp. Acute Immobilisation Test) NOEL (48 h): 18 mg/L test mat. (nominal) - OECD Guideline 202 (Daphnia sp. Acute Immobilisation Test)
acute - algae & aquatic plants	
(static freshwater):	EL50 (72 h): 11 mg/L test mat. (Tested as WAF) (nominal) OECD Guideline 201 (Alga, Growth Inhibition Test)
acute - other organisms:	not tested.
chronic:	not tested.

12.2 Persistence and degradability

this substance is considered as a NCS readily biodegradable and therefore is not persistent.

12.3 Bioaccumulative potential

as the constituents are readily biodegradable.

12.4 Mobility in soil

this substance is considered as a readily biodegradable NCS. Based on the ready biodegradability of the NCS, simulation tests in surface water, sediment and soil are not required.

12.5 Results of PBT and vPvB assessment

this substance is not PBT / vPvB

12.6 Other adverse effects

N/D

13. DISPOSAL CONSIDERATIONS
13.1 Waste treatment methods

the containers used for this product must completely empty before disposal - dispose product and packaging in accordance with federal, state and local environmental control regulations - dispose of this product in the environment is illegal.

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14. TRANSPORT INFORMATION
14.1 UN Number

1197

14.2 UN proper shipping name

extracts, liquid, for flavour or aroma

14.3 Transport hazard class

Class 3

14.3.1 Transport hazard symbols

for IMDG-ADR/RID: flame

for ICAO/IATA: flame


14.4 Packing group

III

14.5 Environmental hazards

marine pollutant

14.6 Special precautions for user

this product contains constituents flammables & dangerous for the environment - in case of pouring out, make sure to label new package accordingly, reproducing original label with relevant symbols.

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

N/A

15. REGULATORY INFORMATION
15.1 Safety, health and environmental regulations/legislation specific for the substance

no specific EU provisions and/or regulations apply to this substance.

15.2 Chemical Safety Assessment

A study for the chemical safety assessment of the substance was conducted during the preparation of registration for REACH.

16. OTHER INFORMATION
a Revision

Revision Number 2 (November 2016)			
Edited Section	Description	from	to
Sec 1.1 Product identification	added substance registration number in place of the pre-registration number	05-2114107983-47-0000	01-2120117613-65-0000
Sec. 2.1 Classification of the substance	varied aquatic hazard classification for the substance	Aquatic Chronic 2 EHC2 H411 GHS09	Aquatic Chronic 2 EHC2 H412 GHS09 removed
Sec. 2.2 Label elements	labeling changed	removed hazard symbol for waters (red diamond GHS09); replaced phrase H411 with H412	
Sec. 3.1.1 Substance: main constituents & typical values	list of main constituents and related values changemement	constituents listed in the table and their values aligned to the values considered for chemical safety study associated with the substance registration dossier	
Sec. 8.1 Control parameters	added reference to Annex 1 (Exposure Scenario)	-	
Sec. 8.2 Exposure control	added reference to Annex 1 (Exposure Scenario)	-	
Sec. 9.1 Information on basic physical and chemical properties	values of basic physical and chemical properties changemement	the values of basic physical and chemical properties has been aligned with the values considered for chemical safety study conducted for the registration of the substance	
Sec. 11.1 Information on toxicological effects	information provided for the entire section changemement	the information on toxicological effects has been aligned to those of the chemical safety study conducted for the registration of the substance	
Sec. 12.1 Toxicity	information provided for the entire section changemement	the information on eco-toxicological effects has been aligned to those of the chemical safety study conducted for the registration of the substance	
Revision Number 3 (January 20, 2023)			
Edited Section	Description	from	to
Section 14.1 UN Number	UN number update	1169	1197
Section 14.2 UN proper shipping name	UN proper shipping name update	extracts, aromatic, liquid	extracts, liquid, for flavour or aroma

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b Legend

CSR: Chemical Safety Report
CSA: Chemical Safety Assessment
CLP: Regulation (EU) N. 1272/2008
Asp. Tox.: aspiration hazard
Aquatic Chronic: aquatic hazard
Skin Irrit.: skin irritation hazard
Skin Sens.: skin sensitization hazard
Eye Irrit.: eye irritation hazard
Flam. Liq.: flammable liquid hazard
WAF: Water Accommodated Fractions
LD50: Lethal Dose 50
LL50: Lethal Loading 50
EL50: Effective Loading 50
NOAEL: No-Observed Adverse Effect Level
NOEL: No-Observed Effect Level
LOEL: Lowest Observed Effect Level
OECD: Organisation for Economic Co-operation and Development

c Literature references and source of data

CSR - RIFM - FEMA database

d List of relevant hazard and precautionary statements

H226 flammable liquid and vapour
H304 may be fatal if swallowed and enters airways
H315 causes skin irritation
H317 may cause an allergic skin reaction
H319 causes serious eye irritation
H412 Harmful to aquatic life with long lasting effects
P210 keep away from heat/sparks/open flames/hot surfaces – no smoking
P280 wear protective gloves/eye protection/face protection
P331 do not induce vomiting
P301/310 if swallowed: immediately call a poison center or doctor/physician
P302+352: IF ON SKIN: Wash with plenty of water/...
P305/351/338 if in eyes: rinse cautiously with water for several minutes. remove contact lenses if present and easy to do. continue rinsing
P273: Avoid release to the environment.

e Inventories & other

	CAS	ID	NOTE
EINECS	89957-91-5	289-612-9	
TSCA	8007-75-8	-	
IECSC	8007-75-8	-	
KECI	8007-75-8	KE-26829	
DSL	8007-75-8	-	
AICS	8007-75-8	-	
ENCS - ISHL	8007-75-8	11-(1)-575	
NZIOC	8007-75-8	-	
PICCS	8007-75-8	-	
FDA	-	21CFR182.20	
CoE	-	137	
FEMA	8007-75-8	2153	
HS Code	-	3301192000	EU TARIC

f contaminants

this product has been analyzed to ensure that the levels of heavy metals, phthalates and allergens are respectively comply with the relevant regulations.

g Further information

the information on this SDS is correct to the best of our knowledge, covering the involved product at the date of its publication. They apply to the product as such as per the described specifications. The information are not related to the use of the product in combination with any other material or any other process altering its characteristics. The end user should apply to the existing normative and laws covering the use of the product, the hygiene and security at work. The container used during transportation must be considered only as a temporary container and it must not be considered in any case adequate for medium or long term warehousing. Upon receipt, our product must be stored as soon as possible in compliance with section 7 of this SDS. The information given in this SDS is in accordance with the Reg. (EU) No 2015/830, Reg. (EC) No 1907/2006 and Reg. (EC) No 1272/2008.

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ANNEX I

Exposure Scenarios

Exposure Scenarios ->

ITALIAN LEMON OIL SFUMATRICE DECOLORIZED
Ref. 21940

Version 3RME07 (Revision Number: 3 - Revision Date: January 13, 2023)

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1. IDENTIFICATION OF THE SUBSTANCE AND OF THE COMPANY/UNDERTAKING
1.1 Product identifier

product trade name: **Italian Lemon Oil Sfumatrice Decolorized - Ref. 21940**
 EC name/registration name: Lemon, ext.
 EC number: 284-515-8
 CAS number (EC inventory): 84929-31-7
 RECh Registration Number: 01-2119495512-35-0001

1.2 Relevant identified uses of the substance and uses advised against

relevant uses: odour agent / flavouring agent - ingredient for industrial manufacturing.
 uses advised against: not for personal use in this form or concentration.

1.3 Details of the supplier of the safety data sheet

company: CAPUA 1880 s.r.l. - Zona Industriale, 89052 Campo Calabro (RC) - ITALY • www.webcapua.com
 telephone number: phone: +390965793901 • fax: +390965797111/757792
 responsible person: Dr. Gianfranco Capua (CEO) • phone: +3909657939236 • mail: sales@webcapua.com
 manufacturing plant: Zona Industriale, 89052 Campo Calabro (RC) - ITALY
 competent person SDS: mail: legis@webcapua.com

1.4 Emergency telephone number

supplier: 9:30÷17:03: +390965793901 (languages: IT, EN, FR, DE, ES) • other time: +393483852033 (languages: IT, EN, FR).
 poison control center: Azienda Ospedaliera Niguarda Ca' Granda (MILANO - ITALY) +390266101029 (languages: IT, EN).

2. HAZARDS IDENTIFICATION
2.1 Classification of the substance

Reg. (EC) No 1272/2008:	Flam. Liq. 3	Asp. Tox. 1	Skin Irrit. 2	Skin Sens. 1	Aquatic Chronic 2
hazard categories:	FL3	AH1	SCI2	SS1	EHC2
hazard statements:	H226	H304	H315	H317	H411
hazard pictograms:	GHS02	GHS08	GHS07		GHS09

2.2 Label elements

hazard pictograms:



signal word: danger
 hazard statements: H226, H304, H315, H317, H411
 precautionary statement: P210, P241, P262, P273, P280, P301/310, P303/361/353, P331, P405, P501

2.2.1 Additional information

for full text of relevant hazard / precautionary statements see section 16-d.

2.3 Other hazards

N/D

3. COMPOSITION/INFORMATION ON INGREDIENTS
3.1 Substance

botanical origin: *Citrus limon*, (L) BURM. f.
 production process: obtained by physical means from fresh lemon fruits.
 status: 100% Natural Complex Substance
 EU name: Lemon, ext.
 EC number: 284-515-8
 CAS number (EC inventory): 84929-31-7
 other CAS number: 8008-56-8
 RECh Status: registered substance
 RECh tonnage band: between 100 to 1000 tonnes/year

3.1.1 Substance: main constituents & typical values

common name	EINECS	CAS	hazards classification	content (%)
limonene	227-813-5	5989-27-5	Flam. Liq. 3;H226 Skin Irrit. 2;H315 Skin Sens. 1B;H317 Asp. Tox. 1;H304 Aquatic Acute 1;H400 Aquatic Chronic 1;H410	60.00÷70.00
β-pinene	204-872-5	127-91-3	Flam. Liq. 3;H226 Skin Irrit. 2;H315 Skin Sens. 1B;H317 Asp. Tox. 1;H304 Aquatic Acute 1;H400 Aquatic Chronic 1;H410	10.00÷15.00
γ-terpinene	202-794-6	99-85-4	Skin Irrit. 3;H316 Flam. Liq. 3;H226 Asp. Tox. 1;H304 Acute Tox. 5 (Oral);H303	8.00÷10.00
citral	226-394-6	5392-40-5	Acute Tox. 5 (Dermal);H313 Skin Irrit. 2;H315 Eye Irrit. 2A;H319 Skin Sens. 1;H317 Aquatic Acute 2;H401	≤4.00
α-pinene	201-291-9	80-56-8	Flam. Liq. 3;H226 Acute Tox. 4 (Oral);H302 Skin Irrit. 2;H315 Skin Sens. 1B;H317 Asp. Tox. 1;H304 Aquatic Acute 1;H400 Aquatic Chronic 1;H410	≤2.00
myrcene	204-622-5	123-35-3	Flam. Liq. 3;H226 Skin Irrit. 2;H315 Eye Irrit. 2A;H319 Asp. Tox. 1;H304 Aquatic Acute 1;H400 Aquatic Chronic 2;H411	≤2.50

ITALIAN LEMON OIL SFUMATRICE DECOLORIZED**Ref. 21940**

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4. FIRST AID MEASURES**4.1 Description of first aid measures**

inhalation: move to fresh air for at least 15 minutes, in case of complaints seek medical attention.
 contact with the skin: remove contaminated clothing and wash with water and soap the contaminated part, make sure you have eliminated the contamination - in case of complaints seek medical attention.
 contact with the eyes: abundant eye-wash for several minutes with pure water, make sure you have eliminated the contamination, in case of complaints seek medical attention.
 ingestion: ask **immediately** medical assistance - mouth washing with water and **do not provoke vomiting**.

4.2 Most important symptoms and effects, both acute and delayed

symptoms: inhalation: can cause slight headache - contact: can cause bloodshot eyes - can cause slight skin rash.
 acute and delayed effects: no post-disorder effects are reported.

4.3 Indication of any immediate medical attention and special treatment needed

immediate medical assistance: see point 4.1.
 immediate/special treatment: see point 4.1.
 first aid specific means: eye wash fountain / safety shower should be available in the work area.

5. FIREFIGHTING MEASURES**5.1 Extinguishing media**

suitable extinguishing media: SMALL FIRE: use CO₂, foam, dry powder - LARGE FIRE: use water spray or fog - cool containing vessels with water jet in order to prevent pressure build-up, autoignition or explosion.
 unsuitable extinguishing media: pressurized water jet.

5.2 Special hazards arising from the substance

vapours may form explosive mixture with air - in case of fire, the following can be released: carbon monoxide (CO), carbon dioxide (CO₂), smoke, soot.

5.3 Advice for firefighters

standard procedure for chemical fires - spray extinguishing media to base of flames - use adequate protections for respiratory apparatus, avoid vapour inhalation.

6. ACCIDENTAL RELEASE MEASURES**6.1 Personal precautions, protective equipment and emergency procedures**

for non emergency personnel: in an emergency (i.e. unintentional release of the substance exceeding the DNEL) respiratory protection (Gas filter A, Colour code brown) must be worn. Consider the maximum duration for wear. Use insulating device for respiratory protection with an independent air supply if the concentration is above the usage this for filter devices or for oxygen concentrations below 17 volume % or in circumstances which are unclear - use adequate protections solvent resistant: security shoes, bodysuit, gloves and protective goggles (see section 8).
 for emergency responders: as per non emergency personnel.
 emergency procedures: remove any ignition source and ensure adequate ventilation in working areas following accidental releases.

6.2 Environmental precautions

keep away from drains - keep away from surface and ground water.

6.3 Methods and material for containment and cleaning up

keep away from heat and use non-combustible absorbing sawdust (sand, specific binder). Refer to section 13 for the appropriate methods of waste treatment.

6.4 Reference to other sections

see section 4, 8 & 13

7. HANDLING AND STORAGE**7.1 Precautions for safe handling**

safe handling: during handling keep original container closed - avoid contact with skin and eyes - wear adequate protective gloves and eye/face protection - avoid any sources of ignition - avoid exposing to high temperature during processing - maintain adequate local and general ventilation where product is handled.
 hygiene at work: do not ingest or apply to the skin as such - no smoking - remove contaminated clothing - good personal washing routines should be followed - if at risk of contamination, foods, beverages and other articles of consumption must not be stored or consumed at the work areas.

7.2 Conditions for safe storage, including any incompatibilities

container: to be stored in stainless steel drums, preferably under inert atmosphere (nitrogen) with minimum head space, protected from day-light. • **take note**: the container used during transportation must be considered only as a temporary container and it must not be considered in any case adequate for medium or long term warehousing.
 conditions: stored in a dry, aerated place, away from any heat source and ignition source.
 temperature: from 5 °C to 21 °C.

7.3 Specific end uses

use as odour agent / flavouring agent - the information of this section are not related to the use of the product in combination with any other material or any other process altering its characteristics.

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Ref. 21940

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8. EXPOSURE CONTROL/PERSONAL PROTECTION
8.1 Control parameters

see Exposure Scenario in annex.

8.2 Exposure control

see Exposure Scenario in annex.

8.2.1 Appropriate engineering controls

where appropriate, use closed system to transfer and process this material - if appropriate, isolate mixing rooms and other areas where this material is used or openly handled - maintain these areas under negative air pressure relative to the rest of the plant.

8.2.2 Individual protection measures, such as personal protective equipment


eye/face protection:

protective goggles with built-in-frame tested to EN166 (should be checked regularly).



skin protection - hand:

suitable gloves tested to EN374 (should be checked regularly) - always use with clean, dry hands.



skin protection - other:

protective work clothing solvent resistant (should be checked regularly).

respiratory protection:

not necessary in adequate local with general ventilation - avoid breathing vapors.

thermal hazards:

none.

8.2.3 Environmental exposure controls

see Exposure Scenario in annex.

9. PHYSICAL AND CHEMICAL PROPERTIES
9.1 Information on basic physical and chemical properties

appearance:	liquid - colorless / light pale amber
odour:	citrusy
odour threshold:	N/D
pH:	N/A
initial boiling point (& range):	160 °C (±20 °C) at 1016 hPa
melting point/freezing point:	N/A
flash point:	49 °C (120 °C)
evaporation rate:	N/D
upper/lower explosive limits:	N/D
vapour pressure:	218.8 Pa at 25 °C
vapour density:	N/D
relative density d_4^{20} :	0.85 (±0.01)
solubility:	in alcohol & other oils / negligible in H ₂ O
partition coefficient n-octanol/H ₂ O:	3.33 - 6.3
auto-ignition temperature:	235 °C at 1012.2 - 1016.5 hPa
decomposition temperature:	N/D
viscosity:	1.09 mPa*s (dynamic) / ~1.28 mm ² /s (kinematic) at 20 °C
explosive properties:	none
oxidizing properties:	none

9.2 Other information

N/D

10. STABILITY AND REACTIVITY
10.1 Reactivity

substance not reactive with water - substance not reactive if used according to storage & handling conditions & identified uses (see subsection 1.2).

10.2 Chemical stability

substance stable if used according to storage & handling conditions & identified uses (see subsection 1.2). • **shelf life:** 365 days, as per recommended storage & handling conditions (see section 7).

10.3 Possibility of hazardous reactions

none if used according to storage & handling conditions & identified uses (see subsection 1.2).

10.4 Conditions to avoid

avoid exposure to heat.

10.5 Incompatible materials

highly oxidizing agents.

10.6 Hazardous decomposition products

no known hazardous decomposition products under recommended storage & handling conditions - in case of combustion: carbon monoxide (CO), carbon dioxide (CO₂).

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11. TOXICOLOGICAL INFORMATION**11.1 Information on toxicological effects**

acute toxicity:	LD50: >5000 mg/kg bw (oral rat, similar to OECD 401) LD50: >10000 mg/kg bw (dermal rabbit, similar to OECD 402)
skin corrosion/irritation:	irritating (test according to OECD guideline 404)
serious eye damage/irritation:	not classified as irritating to the eye (tested according to OECD guideline no. 405)
respiratory sensitisation:	N/D
skin sensitisation:	sensitizing based on read across to limonene (tested according to OECD guideline 429)
germ cell mutagenicity:	not mutagenic (mammalian cell gene mutation assay OECD Guideline No. 476), not clastogenic (OECD Guideline 473), not mutagenic (Ames test OECD 471)
carcinogenicity:	conclusive but not sufficient for classification; limonene tested according to OECD Guideline 451 shows nephrocarcinogenicity in the male rat, of which the mechanism is not relevant for humans.
reproductive toxicity:	conclusive but not sufficient for classification (based on read across to limonene in prenatal developmental toxicity studies with rats, mice and rabbits)
STOT-single exp.:	conclusive but not sufficient for classification
STOT-repeated exp.:	NOAEL and LOAEL resp. 100 and 1000 mg/kg bw/day (read across to limonene OECD test 409 with beagle dogs).
aspiration hazard:	N/D

12. ECOLOGICAL INFORMATION**12.1 Toxicity**

algae/aquatic plants (acute tox.): 72h-EL50 *Desmodesmus subspicatus* 150 mg/l (WAF). 72h-NOECr ~50 mg/l (OECD 201, WAF)
 fish (acute tox.): 96h-EL50 *Danio rerio* 5.65 mg/l / 96h-LC50 2.76 mg/l (OECD 203, WAF)
 aquatic invertebrates (acute tox.): 48h-EL50 *Daphnia magna* 1.1 mg/l / NOEL 0.48 mg/l (OECD 202, WAF)

12.2 Persistence and degradability

this oil is to be considered as a readily biodegradable substance. Based on its ready biodegradability, oil does not fulfill the criteria for persistence.

12.3 Bioaccumulative potential

as the constituents are readily biodegradable, it is likely that they will also be biotransformed in higher organisms so bioaccumulation is actually not expected.

12.4 Mobility in soil

this substance is considered as a readily biodegradable NCS. Based on the ready biodegradability of the NCS, simulation tests in surface water, sediment and soil are not required.

12.5 Results of PBT and vPvB assessment

this substance is not classified as: PBT or vPvB

12.6 Other adverse effects

N/D

13. DISPOSAL CONSIDERATIONS**13.1 Waste treatment methods**

the containers used for this product must completely empty before disposal. Dispose product and/or contaminated packaging in accordance with federal, state and local environmental control regulations - disposal through the waste water is illegal.

14. TRANSPORT INFORMATION**14.1 UN Number**

1197

14.2 UN proper shipping name

extracts, liquid, for flavour or aroma

14.3 Transport hazard class

Class 3

14.3.1 Transport hazard symbols

for IMDG-ADR/RID: fish and tree - flame
 for ICAO/IATA: flame

**14.4 Packing group**

III

14.5 Environmental hazards

marine pollutant

14.6 Special precautions for user

this product contains constituents flammables & dangerous for the environment - in case of pouring out, make sure to label new package accordingly, reproducing original label with relevant symbols.

ITALIAN LEMON OIL SFUMATRICE DECOLORIZED**Ref. 21940**

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15. REGULATORY INFORMATION**15.1 Safety, health and environmental regulations/legislation specific for the substance**

no specific EU provisions and regulations apply to this substance.

15.2 Chemical Safety Assessment

a Chemical Safety Assessment according to the rules stipulated in the REACH directive has been performed.

16. OTHER INFORMATION**a Revision****Revision Number 1 (November 2015)****hazard classification**

hazard categories

hazard statements

updating in conformity with EU Regulations**Revision Number 2 (January 03, 2022)****Sec. 7.2 Conditions for safe storage, including any incompatibilities**

storage temperature update

Revision Number 3 - Version 3RME07 (January 13, 2023)**Section 14.1 UN Number****Section 14.2 UN proper shipping name****from****to**

Aquatic Chronic 1

Aquatic Chronic 2

EHC1

EHC2

H410

H411

Reg. (EU) No 453/2010

Reg. (EU) No 2015/830

from**to**

-

-

5 °C and 21 °C

5 °C to 21 °C

from**to**

1169

1197

extracts, aromatic, liquid

extracts, liquid, for flavour or aroma

b Legend

CLP: Regulation (EC) No 1272/2008 / CSR: Chemical Safety Report / Asp. Tox.: aspiration hazard / Aquatic Chronic: aquatic hazard / Skin Irrit.: skin irritation hazard / Skin Sens.: skin sensitization hazard / Flam. Liq.: flammable liquid hazard

c Literature references and source of data

RIFM - FEMA database / CSR Lemon Oil

d List of relevant hazard and precautionary statements**H226** flammable liquid and vapour**H304** may be fatal if swallowed and enters airways**H315** causes skin irritation**H317** may cause an allergic skin reaction**H411** toxic to aquatic life with long lasting effects**P210** keep away from heat/sparks/open flames/hot surfaces – no smoking**P241** use explosion-proof electrical/ventilating/lighting/equipment**P262** do not get in eyes, on skin or on clothing**P273** avoid release to the environment**P280** wear protective gloves/eye protection/face protection**P301/310** if swallowed: immediately call a poison center or doctor/physician**P303/361/353** if on skin (or hair): remove/take off immediately all contaminated clothing. rinse skin with water/shower**P331** do not induce vomiting**P405** store locked up**P501** dispose product/container in accordance with applicable regulations**e Inventories & other**

	CAS	ID	NOTE
EINECS	84929-31-7	284-515-8	
TSCA	8008-56-8	-	
IECSC	8008-56-8	-	
KECI	8008-56-8	KE-27013	
DSL	8008-56-8	-	
AICS	8008-56-8	-	
ENCS - ISHL	8008-56-8	11-(1)-711	
NZIOC	8008-56-8	-	
PICCS	8008-56-8	-	
FDA	-	182.20	
CoE	-	139	
FEMA	8008-56-8	2625	
RIFM	8008-56-8	136-G2.33	
HS Code	-	3301131000	EU TARIC

f Further information

the information on this SDS is correct to the best of our knowledge, covering the involved product at the date of its publication. They apply to the product as such as per the described specifications. The information are not related to the use of the product in combination with any other material or any other process altering its characteristics. The end user should apply to the existing normative and laws covering the use of the product, the hygiene and security at work. The container used during transportation must be considered only as a temporary container and it must not be considered in any case adequate for medium or long term warehousing. Upon receipt, our product must be stored as soon as possible in compliance with section 7 of this SDS. The information given in this SDS is in accordance with the Reg. (EU) No 2015/830, Reg. (EC) No 1907/2006 and Reg. (EC) No 1272/2008.

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ANNEXa Exposure ScenariosES_Lemon_Oil → 

Shipper
LEXZAU, SCHARBAU GMBH & CO. KG
KAP-HORN-STR. 18,
28237 BREMEN, GERMANY
TAX ID: DE 114624125

Consigned to order of
LESCHACO MEXICANA,S.A. DE C.V.
BLVD. MANUEL AVILA CAMACHO
NO. 88-PISO 8
COL. LOMAS DE CHAPULTEPEC
11000 MEXICO, D.F., MEXICO
TEL.: +52(55)59550000
RFC: LME980116R15

Notify Party and address
LESCHACO MEXICANA,S.A. DE C.V.
BLVD. MANUEL AVILA CAMACHO
NO. 88-PISO 8
COL. LOMAS DE CHAPULTEPEC
11000 MEXICO, D.F., MEXICO
TEL.: +52(55)59550000
RFC: LME980116R15

	Place of receipt
	CFS BREMEN

Ocean vessel	Port of loading
DIMITRA C	HAMBURG

Port of discharge	Place of delivery	Freight payable	Number of original Bills of Lading
ALTAMIRA	CFS ALTAMIRA	BREMEN	0/ZERO

Marks and Nos.	Quantity of Goods	Description of Goods	Said to contain	Gross weight, kg.	Measurement, m ³
CARGO DETAILS AS PER ATTACHED STATEMENT					

B/L No.
ALM249752

FMC Organization No. 025875



General Agent
SACO Shipping GmbH
Wollkaemmereistrasse 1
21107 Hamburg - Germany

ALL COSTS, CHARGES,
LIABILITIES AND DELAYS
RESULTING FROM EMERGENCY
QUARANTINE FOR WOOD AND
WOODEN PACKAGING OR FROM
INSUFFICIENT OR IMPROPER
LABELLING OF NON WOODEN
PACKAGING ARE FOR
CUSTOMER'S ACCOUNT

3/07/BRE/526901

Copy

FREIGHT PREPAID - SHIPPED ON BOARD - EXPRESS RELEASE

All particulars above declared by Merchant

For delivery of cargo please apply to:

INTERTEAM, S.A. DE C.V.
SERVIC. INTERNACION. DE COMERCIO
COLIMA 114 DESPACHO 201
COLONIA ROMA,C.P.06700, MEXICO DF
PH: 514-69 15 FX: 208-79-8
INT-961206-ES7

RECEIVED for shipment the above mentioned Goods in apparent good order and condition as far as could be ascertained by exercising reasonable means of checking or as stated above.

The Carrier in accordance with the provisions contained on this side and on the reverse side of this document;

- a) undertakes to perform or to procure the performance of the entire transport from the place at which the Goods are taken in charge to the place designated for delivery in this document, and
- b) assumes liability as prescribed in this document for such transport.

One of the Bills of Lading to be surrendered duly endorsed in exchange for the Goods or delivery order.

IN WITNESS whereof three (3) original Bills of Lading have been signed, if not otherwise stated above, one of which being accomplished the other(s) to be void.

Place and date of issue
BREMEN 14.07.2023

Signed for the Carrier



SACO Shipping GmbH

as agent of carrier SACO SHIPPING LINE LIMITED

Declared Value of the Goods (see clause 12)
US\$
Ad valorem freight paid:

Note:

The Merchant's attention is called to the fact that according to Clauses 11 to 13 of this Bill of Lading, the liability of the Carrier is, in most cases, limited in respect of loss of or damage to the goods and delay

Marks and Nos.	Quantity of Goods	Description of Goods	Said to contain	Gross weight, kg.	Measurement, m ³
SYMRISE S. DE R. L. DE C.V. AVENIDA REPUBLICA MEXICANA 200 CP. 66480, COLONIA GARZA CANTUSAN NICOLAS DE LOS GARZA, NUEVO LEON MEXICO PO: 4500846670 59062101 TO 59062102 59316101	1 PALLET	2 PLASTIC JERRICAN UN 3H1 ITALIAN LEMON OIL SFUMATRICE DECOLORIZED HS CODE: 33011310 UN 1197, EXTRACTS, LIQUID (LIMONENE), 3, III, (+49.00 C C.C.), MARINE POLLUTANT 1 PLASTIC DRUM UN 1H1 BERGAMOT OIL IT NEW CROP HS CODE: 33011920 UN 1197, EXTRACTS, LIQUID (LIMONENE), 3, III, (+56.00 C C.C.), MARINE POLLUTANT		229,900	0,960
STOWED INTO CONTAINER NO.: TRHU7015737				SEAL : WWA030053848	
TOTAL		1 PALLET		229,900 KGS	0,960 CBM

Shipper
NGL NAVIGATOR GLOBAL LOGISTICS GMBH
FELIX-WANKEL-STRASSE 3
STUHR NI 28816 GERMANY

TAX ID: DE814839526

Consigned to order of
NGL NAVIGATOR GLOBAL LOGISTICS S. DE R.L
DE C.V.
CALZADA ZAVALA 1306-A, INT. 132
COLONIA SANTA CRUZ BUENAVISTA
PUEBLA PUE 72150 MEXICO
+522225036510 RFC+NNG201012KD4
SEA@NGL-MEXICO.COM

Notify Party and address
SAME AS CONSIGNEE

B/L No.
ALM249818 - B
FMC Organization No. 025875



General Agent
SACO Shipping GmbH
Wollkaemmereistrasse 1
21107 Hamburg - Germany

ALL COSTS, CHARGES,
LIABILITIES AND DELAYS
RESULTING FROM EMERGENCY
QUARANTINE FOR WOOD AND
WOODEN PACKAGING OR FROM
INSUFFICIENT OR IMPROPER
LABELLING OF NON WOODEN
PACKAGING ARE FOR
CUSTOMER'S ACCOUNT

3/07/BRE/526902

Copy

		Place of receipt BREMEN CFS	
Ocean vessel DIMITRA C		Port of loading HAMBURG, GERMANY	
Port of discharge ALTAMIRA, MEXICO	Place of delivery ALTAMIRA CFS	Freight payable BREMEN	Number of original Bills of Lading 0/ZERO
Marks and Nos.	Quantity of Goods	Description of Goods	Said to contain
PLASTIC OMNIUM MEXICO DN: 45204 STOWED INTO CONTAINER NO.: TRHU7015737	1 PACKAGE	MOTOR CAR ACCESSORIES HS-CODE:392690	Gross weight, kg. 92,000 Measurement, m ³ 1,560
PLASTIC OMNIUM MEXICO DN: 50043276 STOWED INTO CONTAINER NO.: TGCU5192013	1 PACKAGE	MOTOR CAR ACCESSORIES HS-CODE:400819	132,280 1,152
PLASTIC OMNIUM MEXICO PL: 0001709199 STOWED INTO CONTAINER NO.: TGCU5192013	1 PACKAGE	MOTOR CAR ACCESSORIES HS-CODE:848140	178,000 1,472
TOTAL		3 PACKAGE	402,280 KGS 4,184 CBM

FREIGHT PREPAID - SHIPPED ON BOARD - EXPRESS RELEASE

All particulars above declared by Merchant

For delivery of cargo please apply to:

INTERTEAM, S.A. DE C.V.
SERVIC. INTERNACION. DE COMERCIO
COLIMA 114 DESPACHO 201
COLONIA ROMA,C.P.06700, MEXICO DF
PH: 514-69 15 FX: 208-79-8
INT-961206-ES7

Declared Value of the Goods (see clause 12)
US\$
Ad valorem freight paid:

Note:

The Merchant's attention is called to the fact that according to Clauses 11 to 13 of this Bill of Lading, the liability of the Carrier is, in most cases, limited in respect of loss of or damage to the goods and delay

RECEIVED for shipment the above mentioned Goods in apparent good order and condition as far as could be ascertained by exercising reasonable means of checking or as stated above.

The Carrier in accordance with the provisions contained on this side and on the reverse side of this document;

- undertakes to perform or to procure the performance of the entire transport from the place at which the Goods are taken in charge to the place designated for delivery in this document, and
- assumes liability as prescribed in this document for such transport.

One of the Bills of Lading to be surrendered duly endorsed in exchange for the Goods or delivery order.

IN WITNESS whereof three (3) original Bills of Lading have been signed, if not otherwise stated above, one of which being accomplished the other(s) to be void.

Place and date of issue
BREMEN 14.07.2023

Signed for the Carrier



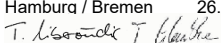
SACO Shipping GmbH

as agent of carrier SACO SHIPPING LINE LIMITED

MULTI MODAL DANGEROUS GOODS FORM

This form may be used as a dangerous goods declaration as it meets the requirements of SOLAS 74, Chapter VII, regulation 4;

MARPOL 73/78, Annex III, regulation 4

Shipper/Consignor/Sender Solvay Fluor GmbH Hans-Boeckler-Allee 20 30173 Hannover Germany	Page 1 of 1 Pages		Freight Forwarder's reference 230708121398	
Consignee SOLVAY FLUOR MEXICO S.A. DE C.V. C/O LESCHACO MEXICANA, S.A. DE C.V. BVLD. RIO TAMESI 1080 89608 ALTAMIRA, TAMPAS MEXICO	Carrier Saco Shipping Line, Limassol			
	Vessel Dimitra C (023W)		Port of discharge Altamira	
CONTAINER/VEHICLE PACKING CERTIFICATE I hereby declare that the goods described below have been packed/loaded into the container/vehicle identified below in accordance with the applicable provisions. MUST BE COMPLETED AND SIGNED FOR ALL CONTAINER/VEHICLE LOADS BY PERSON RESPONSIBLE FOR PACKING/LOADING Name/status, company Place and Date: Signature of packer		SHIPPER'S DECLARATION I hereby declare that the contents of this consignment are fully and accurately described below by the proper shipping name, and are classified, packaged, marked and labelled/placarded and are in all respects in proper condition for transport according to the applicable international and national government regulations. Name/status, company Lexzau, Scharbau on behalf of Solvay Fluor, Hannover Place and Date: Hamburg / Bremen 26.06.2023  Signature on behalf of shipper Thomas Liberoudis / Timo Glaubke		
No.	Number & kind of packages	Description of goods	Gross mass	
	1) 6 pallets = 54 steel drums UN 1A1 pallet weight: kg UN 3077 ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (CESIUM POTASSIUM FLUOROALUMINATE), 9, III, MARINE POLLUTANT, EmS: F-A,S-F Emergency Contact: Solvay GmbH 24-hours number Carechem +44-1235239670 (SOLVAY29003-NCEC) Cargo gross/net weight: 2.442,960kg / 2.160,000kg	Gross weight:	2.442,960 kg	

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The United Kingdom (UK) has left the European Union (EU) officially on 31/01/2020, however the classification and labelling regime is still based on the existing EU regulatory regime during a transition period to provide continuity for businesses. Therefore this document is still aligned on EU standards to ensure the safe use of the substance. It will be updated as the UK publishes new classification and labelling regulation diverging from the legal framework currently applied.

SECTION 1: Identification of the substance/mixture and of the company/undertaking**1.1 Product identifier**

- Trade name NOCOLOK® Cs FLUX (SM)
- Chemical name Cesium potassium fluoroaluminate

1.2 Relevant identified uses of the substance or mixture and uses advised against**Uses of the Substance/Mixture**

- Automotive industry
- Domestic use
- Welding and soldering agents

1.3 Details of the supplier of the safety data sheet**E-mail address**

manager.sds@solvay.com

1.4 Emergency telephone number

+44(0)1235 239 670 [CareChem 24]

Disclaimer

The ® indicates a Registered Trademark in the United States and the ™ indicates a trademark in the United States. The mark may also be registered, subject of an application for registration, or a trademark in other countries.

SECTION 2: Hazards identification**2.1 Classification of the substance or mixture****Classification (Regulation (EC) No 1272/2008)**

Acute toxicity, Category 4
 Serious eye damage, Category 1
 Effects on or via lactation
 Specific target organ toxicity - repeated exposure, Category 1
 Long-term (chronic) aquatic hazard, Category 2

H332: Harmful if inhaled.
 H318: Causes serious eye damage.
 H362: May cause harm to breast-fed children.
 H372: Causes damage to organs through prolonged or repeated exposure if inhaled. , Inhalation
 H411: Toxic to aquatic life with long lasting effects.

2.2 Label elements**GB Harmonized System of Classification and Labelling of Chemicals (GB CLP)****Hazardous products which must be listed on the label**

- CAS-No. 566947-29-3 Cesium potassium fluoroaluminate

Pictogram**Signal word**

- Danger

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Hazard statements

- H318 Causes serious eye damage.
- H332 Harmful if inhaled.
- H362 May cause harm to breast-fed children.
- H372 Causes damage to organs through prolonged or repeated exposure if inhaled.
- H411 Toxic to aquatic life with long lasting effects.

Precautionary statementsPrevention

- P201 Obtain special instructions before use.
- P202 Do not handle until all safety precautions have been read and understood.
- P260 Do not breathe dust.
- P263 Avoid contact during pregnancy and while nursing.
- P273 Avoid release to the environment.
- P280 Wear eye protection/ face protection.

Response

- P305 + P351 + P338 + P310 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.
- P391 Collect spillage.

2.3 Other hazards which do not result in classification

None known.

SECTION 3: Composition/information on ingredients**3.1 Substance**

- Chemical name Cesium potassium fluoroaluminate

Information on Components and Impurities

Chemical name	Identification number	Concentration [%]
Cesium potassium fluoroaluminate	CAS-No. : 566947-29-3 List Number : 944-087-1	99 - 100

3.2 Mixture

- Not applicable, this product is a substance.

SECTION 4: First aid measures**4.1 Description of first aid measures**In case of inhalation

- Move to fresh air.
- Oxygen or artificial respiration if needed.
- Get medical attention immediately if symptoms occur.

In case of skin contact

- Take off contaminated clothing and wash before reuse.
- Wash off with plenty of water.
- If symptoms persist, call a physician.

In case of eye contact

- Immediate medical attention is required.
- Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes.

In case of ingestion

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- Immediate medical attention is required.
- If swallowed, rinse mouth with water (only if the person is conscious).
- If the victim is able to swallow, give oral calcium containing antacids or solution. The recommended antidote is calcium gluconate. However, if no calcium gluconate is at hand, the oral administration of small and limited amount of milk or water might be considered if it's consistent with local practice.
- Do NOT induce vomiting.
- Artificial respiration and/or oxygen may be necessary.

4.2 Most important symptoms and effects, both acute and delayed**In case of inhalation****Symptoms**

- Cough
- sore throat
- Nose bleeding
- At high concentrations:
- Chemical pneumonitis

Effects

- Irritating to mucous membranes

Repeated or prolonged exposure

- Risk of chronic bronchitis
- Risk of chronic pulmonary inflammation

In case of skin contact**Effects**

- slight irritation
- Repeated exposure may cause skin dryness or cracking.
- Chronic exposure may cause dermatitis.

In case of eye contact**Symptoms**

- Redness
- Lachrymation
- Swelling of tissue
- Burn

Effects

- Causes serious eye damage.

In case of ingestion**Effects**

- Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhoea.

4.3 Indication of any immediate medical attention and special treatment needed**Notes to physician**

- Immediate medical attention is required.
- Medical examination necessary even only on suspicion of intoxication.

SECTION 5: Firefighting measures**5.1 Extinguishing media****Suitable extinguishing media**

- Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

5.2 Special hazards arising from the substance or mixture**Specific hazards during firefighting**

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- Not combustible.
- Hazardous decomposition products formed under fire conditions.

Hazardous combustion products:

- Hydrogen fluoride

5.3 Advice for firefighters**Special protective equipment for firefighters**

- In the event of fire, wear self-contained breathing apparatus.
- Use personal protective equipment.
- Wear chemical resistant oversuit
- Cool containers/tanks with water spray.
- Prevent fire extinguishing water from contaminating surface water or the ground water system.

SECTION 6: Accidental release measures**6.1 Personal precautions, protective equipment and emergency procedures****Advice for non-emergency personnel**

- Avoid dust formation.

Advice for emergency responders

- Keep area clean at all times with wet rag or mop - NEVER sweep!

6.2 Environmental precautions

- Discharge into the environment must be avoided.
- If the product contaminates rivers and lakes or drains inform respective authorities.
- Prevent product from entering sewage system.

6.3 Methods and materials for containment and cleaning up

- Avoid dust formation.
- Keep area clean at all times with wet rag or mop - NEVER sweep!
- Keep in properly labelled containers.
- Keep in suitable, closed containers for disposal.

6.4 Reference to other sections

- 7. HANDLING AND STORAGE
- 8. EXPOSURE CONTROLS/PERSONAL PROTECTION
- 13. DISPOSAL CONSIDERATIONS

SECTION 7: Handling and storage**7.1 Precautions for safe handling**

- Used in closed system
- Use only in well-ventilated areas.
- Keep away from heat and sources of ignition.
- Avoid inhalation, ingestion and contact with skin and eyes.

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Hygiene measures

- Eye wash bottles or eye wash stations in compliance with applicable standards.
- When using do not eat, drink or smoke.
- Handle in accordance with good industrial hygiene and safety practice.

7.2 Conditions for safe storage, including any incompatibilities**Technical measures/Storage conditions**

- Keep containers tightly closed in a dry, cool and well-ventilated place.
- Keep away from heat.
- Keep in properly labelled containers.
- Keep away from incompatible products
- For personal protection see section 8.

Packaging material**Suitable material**

- Paper.
- Polyethylene

7.3 Specific end use(s)

- Contact your supplier for additional information

SECTION 8: Exposure controls/personal protection**8.1 Control parameters****Components with workplace occupational exposure limits**

Components	Value type	Value	Basis
Cesium potassium fluoroaluminate	TWA	2.5 mg/m ³	USA. ACGIH Threshold Limit Values (TLV)
Expressed as :Fluorine			

Biological Exposure Indices

Components	Value type	Value	Basis
Cesium potassium fluoroaluminate	BEI	2 mg/l Fluoride Urine Prior to shift (16 hours after exposure ceases)	ACGIH - Biological Exposure Indices (BEI)
	Nonspecific Background		
Cesium potassium fluoroaluminate	BEI	3 mg/l Fluoride Urine End of shift (As soon as possible after exposure ceases)	ACGIH - Biological Exposure Indices (BEI)
	Nonspecific Background		

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8.2 Exposure controls**Control measures****Engineering measures**

- Provide appropriate exhaust ventilation at machinery.
- Refer to protective measures listed in sections 7 and 8.
- Apply technical measures to comply with the occupational exposure limits.

Individual protection measures**Respiratory protection**

- Respirator with a dust filter
- Use only respiratory protection that conforms to international/ national standards.
- Recommended Filter type: P3 filter
- Self-contained breathing apparatus in confined spaces/insufficient oxygen/in case of large uncontrolled emissions/in all circumstances when the mask and cartridge do not give adequate protection.

Hand protection

- Impervious gloves
- Take note of the information given by the producer concerning permeability and break through times, and of special workplace conditions (mechanical strain, duration of contact).

Eye protection

- Dust proof goggles obligatory.

Skin and body protection

- Dust impervious protective suit
- Change working clothes after each workshift.
- Contaminated work clothing should not be allowed out of the workplace.

Hygiene measures

- Eye wash bottles or eye wash stations in compliance with applicable standards.
- When using do not eat, drink or smoke.
- Handle in accordance with good industrial hygiene and safety practice.

Environmental exposure controls

- Dispose of rinse water in accordance with local and national regulations.

SECTION 9: Physical and chemical properties**9.1 Information on basic physical and chemical properties**

<u>Physical state</u>	solid
<u>Form</u>	powder
<u>Colour</u>	white
<u>Odour</u>	No data available
<u>Odour Threshold</u>	No data available
<u>Melting point/freezing point</u>	<u>Melting point/freezing point:</u> > 400 °C Method: OECD Test Guideline 102
<u>Initial boiling point and boiling range</u>	<u>Boiling point/boiling range:</u> Thermal decomposition: Decomposes below the boiling point.
<u>Flammability (solid, gas)</u>	The product is not flammable. Expert judgement

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<u>Flammability (liquids)</u>	No data available
<u>Flammability/Explosive limit</u>	No data available
<u>Flash point</u>	Not applicable
<u>Auto-ignition temperature</u>	No data available
<u>Decomposition temperature</u>	> 400 °C
<u>pH</u>	5.0 - 6.0 (20 °C) saturated aqueous solution
<u>Viscosity</u>	<u>Viscosity, dynamic</u> : Not applicable, solid <u>Viscosity, kinematic</u> : Not applicable, solid
<u>Solubility</u>	<u>Water solubility</u> : 5.99 g/l (20 °C)
<u>Partition coefficient: n-octanol/water</u>	Not applicable (inorganic substance)
<u>Vapour pressure</u>	0.001 hPa
<u>Density</u>	<u>Bulk density</u> : 350 - 550 kg/m ³
<u>Relative density</u>	2.97 (20 °C) Method: EU Test Guideline A3
<u>Relative vapor density</u>	No data available
<u>Particle characteristics</u>	<u>Particle size</u> : 17.65 µm , d 50
<u>Evaporation rate (Butylacetate = 1)</u>	No data available

9.2 Other information

<u>Oxidizing properties</u>	Not considered as oxidizing, Expert judgement
<u>Self-ignition</u>	> 400 °C
<u>Impact sensitivity</u>	Not explosive Expert judgement
<u>Surface tension</u>	72.1 mN/m

SECTION 10: Stability and reactivity**10.1 Reactivity**

- No data available

10.2 Chemical stability

- Stable under recommended storage conditions.

10.3 Possibility of hazardous reactions

- No data available

10.4 Conditions to avoid

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- Keep away from direct sunlight.
- Keep away from open flames, hot surfaces and sources of ignition.

10.5 Incompatible materials

- Strong acids and strong bases

10.6 Hazardous decomposition products

- Hydrogen fluoride

SECTION 11: Toxicological information**11.1 Information on toxicological effects****Acute toxicity****Acute oral toxicity**

LD50 : > 2,000 mg/kg - Rat , male and female
Method: OECD Test Guideline 423
Not classified as hazardous for acute oral toxicity according to GHS.
Unpublished internal reports
No mortality observed at this dose.

Acute inhalation toxicity

By analogy

LC50 - 4 h (dust/mist) : 1 - 5 mg/l - Rat , male and female
Method: OECD Test Guideline 403
This product is classified as acute toxicity, category 4
Unpublished internal reports

Acute dermal toxicity

By analogy

LD50 : > 2,000 mg/kg - Rat , male and female
Method: OECD Test Guideline 402
Not classified as hazardous for acute dermal toxicity according to GHS.
Unpublished internal reports

Acute toxicity (other routes of administration)

No data available

Skin corrosion/irritation

By analogy

Rabbit
No skin irritation
Method: OECD Test Guideline 404
Unpublished internal reports

Serious eye damage/eye irritation

By analogy

Rabbit
Risk of serious damage to eyes.
Method: OECD Test Guideline 405
Unpublished internal reports
Severe eye irritation

Respiratory or skin sensitisation

By analogy

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Maximisation Test - Guinea pig
Does not cause skin sensitisation.
Method: OECD Test Guideline 406
Unpublished internal reports

Mutagenicity**Genotoxicity in vitro**

Ames test
with and without metabolic activation

negative
Method: OECD Test Guideline 471
Unpublished internal reports

Chromosome aberration test in vitro
Strain: Human lymphocytes
with and without metabolic activation

negative
Method: OECD Test Guideline 473
Unpublished internal reports

By analogy

In vitro gene mutation study in mammalian cells
Strain: mouse lymphoma cells
with and without metabolic activation

negative
Method: OECD Test Guideline 476
Unpublished internal reports

Genotoxicity in vivo

No data available

Carcinogenicity

No data available

Toxicity for reproduction and development**Toxicity to reproduction/Fertility**

Reproduction/developmental toxicity screening test - Rat, male and female, Oral
Fertility NOAEL Parent: 100 mg/kg
OECD Test Guideline 422

Developmental Toxicity/Teratogenicity

Rat, male and female, Oral
General Toxicity Maternal NOAEL: 30 mg/kg
Teratogenicity NOAEL: 100 mg/kg
Method: OECD Test Guideline 422
Reproduction/developmental toxicity screening test

STOT**STOT - single exposure**

The substance or mixture is not classified as specific target organ toxicant, single exposure according to GHS criteria.

STOT - repeated exposure

The substance or mixture is classified as specific target organ toxicant, repeated exposure, category 1 according to GHS criteria.

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Oral 28 Days - Rat , male and female
NOAEL: 30 mg/kg
Method: OECD Test Guideline 422
Unpublished internal reports
Gavage

By analogy

Inhalation 90 Days - Rat , male and female
NOAEC: 1.21 mg/m³
Target Organs: Respiratory system
Method: OECD Test Guideline 413
Unpublished internal reports

Experience with human exposure

No data available

Aspiration toxicity

No data available

SECTION 12: Ecological information**12.1 Toxicity****Aquatic Compartment****Acute toxicity to fish**

LC50 - 96 h : > 120 mg/l - Gobiocypris rarus (rare gudgeon)
semi-static test
Analytical monitoring: yes

Method: OECD Test Guideline 203
Not harmful to fish (LC/LL50 > 100 mg/L)
Unpublished internal reports

Acute toxicity to daphnia and other aquatic invertebrates

EC50 - 48 h : 60 mg/l - Daphnia magna (Water flea)
static test
Analytical monitoring: yes
Method: OECD Test Guideline 202
Unpublished internal reports
Harmful to aquatic invertebrates.

Toxicity to aquatic plants

ErC50 - 72 h : 13.5 mg/l - Pseudokirchneriella subcapitata (green algae)
static test
Analytical monitoring: yes
Method: OECD Test Guideline 201
Unpublished internal reports
Harmful to algae.

NOEC - 72 h : 2.3 mg/l - Pseudokirchneriella subcapitata (green algae)
static test
Analytical monitoring: yes
Method: OECD Test Guideline 201
Unpublished internal reports
No adverse chronic effect observed up to and including the threshold of 1 mg/L.

Toxicity to microorganisms

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EC50 - 3 h : > 100 mg/l - activated sludge
static test
Analytical monitoring: no
Method: OECD Test Guideline 209
Unpublished internal reports

Chronic toxicity to fish

NOEC: 4.52 mg/l - 8 Days - Gobiocypris rarus (rare gudgeon)
semi-static test
Analytical monitoring: yes
Method: OECD Test Guideline 212
No adverse chronic effect observed up to and including the threshold of 1 mg/L.
Unpublished internal reports

Chronic toxicity to daphnia and other aquatic invertebrates

NOEC: 1.0 mg/l - 21 Days - Daphnia magna (Water flea)
semi-static test
Analytical monitoring: yes
Method: OECD Test Guideline 211
Toxic to aquatic invertebrates with long lasting effects.
Unpublished internal reports

12.2 Persistence and degradability**Abiotic degradation****Stability in water**

acid/base equilibrium as a function of pH
complexation/precipitation of inorganic and organic materials

**Physical- and photo-chemical
elimination**

No data available

Biodegradation**Biodegradability**

The methods for determining the biological degradability are not applicable to inorganic substances.

12.3 Bioaccumulative potential**Partition coefficient: n-octanol/water**

Not applicable (inorganic substance)

Bioconcentration factor (BCF)

Not applicable

12.4 Mobility in soil**Adsorption potential (Koc)**

Not applicable

**Known distribution to environmental
compartments**

No data available

12.5 Results of PBT and vPvB assessment

Not applicable (inorganic substance)

12.6 Other adverse effects**Ecotoxicity assessment****Short-term (acute) aquatic hazard**

Harmful to aquatic life.

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Long-term (chronic) aquatic hazard

Toxic to aquatic life with long lasting effects.

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Product Disposal

- In accordance with local and national regulations.
- Refer to manufacturer/supplier for information on recovery/recycling.
- Dispose of wastes in an approved waste disposal facility.

Advice on cleaning and disposal of packaging

- Where possible recycling is preferred to disposal or incineration.
- If recycling is not practicable, dispose of in compliance with local regulations.
- Must be incinerated in a suitable incineration plant holding a permit delivered by the competent authorities.

SECTION 14: Transport information

ADN

14.1 UN number	UN 3077
14.2 Proper shipping name	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Cesium potassium fluoroaluminate)
14.3 Transport hazard class	9
Label(s):	9
14.4 Packing group	
Packing group	III
Classification Code	M7
14.5 Environmental hazards	YES
14.6 Special precautions for user	
Hazard Identification Number:	90
For personal protection see section 8.	

ADR

14.1 UN number	UN 3077
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SAFETY DATA SHEET
Transition document following UK exit from the EU

NOCOLOK® Cs FLUX (SM)

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14.2 Proper shipping name	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Cesium potassium fluoroaluminate)
14.3 Transport hazard class	9
Label(s):	9
14.4 Packing group	
Packing group	III
Classification Code	M7
14.5 Environmental hazards	YES
14.6 Special precautions for user	
Hazard Identification Number:	90
Tunnel restriction code	(-)

For personal protection see section 8.

RID

14.1 UN number	UN 3077
14.2 Proper shipping name	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Cesium potassium fluoroaluminate)
14.3 Transport hazard class	9
Label(s):	9
14.4 Packing group	
Packing group	III
Classification Code	M7
14.5 Environmental hazards	YES
14.6 Special precautions for user	
Hazard Identification Number:	90

For personal protection see section 8.

IMDG

14.1 UN number	UN 3077
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14.2 Proper shipping name	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Cesium potassium fluoroaluminate)
IMDG Code segregation group	Not Relevant
14.3 Transport hazard class	9
Label(s):	9
14.4 Packing group	
Packing group	III
14.5 Environmental hazards	YES
Marine pollutant	
14.6 Special precautions for user	
EmS	F-A , S-F
For personal protection see section 8.	
14.7 Transport in bulk vessels according to IMO instruments	
No data available	

IATA

14.1 UN number	UN 3077
14.2 Proper shipping name	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Cesium potassium fluoroaluminate)
14.3 Transport hazard class	9
Label(s):	9
14.4 Packing group	
Packing group	III
14.5 Environmental hazards	YES
14.6 Special precautions for user	
Packing instruction (cargo aircraft)	956
Max net qty/pkg	400.00 kg
Packing instruction (passenger aircraft)	956
Max net qty/pkg	400.00 kg
For personal protection see section 8.	

Note: The above regulatory prescriptions are those valid on the date of publication of this sheet. Given the possible evolution of transport regulations for hazardous materials, it would be advisable to check their validity with your sales office.

SECTION 15: Regulatory information**15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture****Notification status**

Inventory Information	Status
United States TSCA Inventory	- Product contains substance(s) not listed on TSCA inventory.
Canadian Domestic Substances List (DSL)	- One or more components not listed on inventory

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Australian Inventory of Industrial Chemicals (AIIC)	- One or more components not listed on inventory
Japan. CSCL - Inventory of Existing and New Chemical Substances	- Listed on Inventory
Korea. Korean Existing Chemicals Inventory (KECI)	- One or more components not listed on inventory - A registration has been approved for the non-listed substance. - This registration is valid only for Solvay. Contact Solvay for further details.
China. Inventory of Existing Chemical Substances in China (IECSC)	- Listed on Inventory
Philippines Inventory of Chemicals and Chemical Substances (PICCS)	- One or more components not listed on inventory
Taiwan Chemical Substance Inventory (TCSI)	- One or more components not listed on inventory
New Zealand. Inventory of Chemical Substances	- One or more components is not listed on the NZIoC inventory. Additional HSNO obligations may apply. Please refer to Section 15 of SDS for New Zealand.
EU. European Registration, Evaluation, Authorization and Restriction of Chemical (REACH)	- When purchased from a Solvay legal entity based in the EEA ("European Economic Area"), this product is compliant with the registration provisions of the REACH Regulation (EC) No. 1907/2006 as all its components are either excluded, exempt, and/or registered. When purchased from a legal entity outside of the EEA, please contact your local representative for additional information.

15.2 Chemical safety assessment

- no data available

SECTION 16: Other information

Full text of H-Statements referred to under sections 2 and 3.

- H318: Causes serious eye damage.
- H332: Harmful if inhaled.
- H362: May cause harm to breast-fed children.
- H372: Causes damage to organs through prolonged or repeated exposure if inhaled.
- H411: Toxic to aquatic life with long lasting effects.

Key or legend to abbreviations and acronyms used in the safety data sheet

- TWA: 8-hour, time-weighted average
- ADR: European Agreement on International Carriage of Dangerous Goods by Road.
- ADN: European Agreement on the International Carriage of Dangerous Goods by Inland Waterways.
- RID: European Agreement concerning the International Carriage of Dangerous Goods by Rail.
- IATA: International Air Transport Association.
- ICAO-TI: Technical Instructions for Safe Transport of Dangerous Goods by Air.
- IMDG: International Maritime Dangerous Goods.

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- TWA: Time weighted average
- ATE: Estimated value of acute toxicity
- EC: European Community number
- CAS: Chemical Abstracts Service.
- LD50: Substance that causes 50% (half) death in the test animals group (Median Fatal Dose).
- LC50: Substance concentration causing 50% (half) death in the test animals group.
- EC50: Effective Concentration of the substance causing the maximum of 50%.
- PBT: Persistent, Bioaccumulative and Toxic substance.
- vPvB: Very Persistent and Very Bioaccumulative.
- GHS/CLP/SEA: Classification, labeling, packaging regulation
- DNEL: Derived No Effect Level
- PNEC: Predicted No Effect Concentration
- STOT: Specific Target Organ Toxicity

Not all acronyms listed above are referenced in this SDS.

Further information

- Distribute new edition to clients

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. Such information is only given as a guidance to help the user handle, use, process, store, transport, dispose and release the product in satisfactory safety conditions and is not to be considered as a warranty or quality specification. It should be used in conjunction with technical sheets but do not replace them. Thus, the information only relates to the designated specific product and may not be applicable if such product is used in combination with other materials or in any other manufacturing process, unless otherwise specifically indicated. It does not release the user from ensuring he is in conformity with all regulations linked to its activity.

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Annex

Scenario List

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1. ES1 : Formulation & (re)packing of substances and mixtures

1.1. Scenario description

Main User Groups	: SU 3	Industrial uses: Uses of substances as such or in preparations at industrial sites
Environmental release category	: ERC2	Formulation of preparations
Process category	: PROC2	Use in closed, continuous process with occasional controlled exposure
	PROC3	Use in closed batch process (synthesis or formulation)
	PROC4	Use in batch and other process (synthesis) where opportunity for exposure arises
	PROC5	Mixing or blending in batch processes for formulation of preparations and articles (multistage and/ or significant contact)
	PROC8a	Transfer of substance or preparation (charging/ discharging) from/ to vessels/ large containers at non-dedicated facilities
	PROC8b	Transfer of substance or preparation (charging/ discharging) from/ to vessels/ large containers at dedicated facilities
	PROC9	Transfer of substance or preparation into small containers (dedicated filling line, including weighing)
	PROC24	High (mechanical) energy work-up of substances bound in materials and/ or articles

1.2. Conditions of use affecting exposure

1.2.1 Contributing scenario controlling environmental exposure for: ERC2 Formulation of preparations

Product characteristics

Concentration of the Substance in Mixture/Article : Covers the percentage of the substance in the product up to 100 % (unless stated differently).

Amount

Local daily emission to waste water : 0 kg
Daily local emission to air : 0.781 kg
Local daily emission to soil : 0.031 kg

Environmental factors

Flow rate : 18,000 m3/d
Dilution Factor (River) : 10
Dilution Factor (Coastal Areas) : 100

Other given operational conditions affecting environmental exposure

Continuous release.
Number of emission days per year : 240
Release fraction to air from process : 0.0025
(initial release prior to RMM):
Release fraction to wastewater from process (initial release prior to RMM): : 0

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Release fraction to soil from process : 0.0001
(initial release prior to RMM):
Remarks : Indoor/Outdoor use.

Technical conditions and measures / Organizational measures

Air : No air emission controls required
Water : Wastewater emission controls are not applicable as there is no direct release to wastewater.
Soil : Soil emission controls are not applicable as there is no direct release to soil.
Remarks : Common practices vary across sites thus conservative process release estimates used.

Conditions and measures related to sewage treatment plant

Remarks : Not applicable as there is no release to wastewater.

Conditions and measures related to external treatment of waste for disposal

Waste treatment : External treatment and disposal of waste should comply with applicable local and/or national regulations.

Conditions and measures related to external recovery of waste

Recovery Methods : External recovery and recycling of waste should comply with applicable local and/or national regulations.

1.2.2 Contributing scenario controlling worker exposure for: PROC2 Use in closed, continuous process with occasional controlled exposure**Product characteristics**

Concentration of the Substance in Mixture/Article : Covers the percentage of the substance in the product up to 100 % (unless stated differently).
Physical Form (at time of use) : Solid, medium dustiness

Frequency and duration of use

Remarks : Covers daily exposures up to 8 hours (unless stated differently).

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use
Temperature : <= 40 °C

Technical conditions and measures

Provide a basic standard of general ventilation (1 to 3 air changes per hour) . (Effectiveness (of a measure): 0 %)
with local exhaust ventilation (for inhalation) (Effectiveness (of a measure): 90 %)

Organisational measures to prevent /limit releases, dispersion and exposure

Assumes a good basic standard of occupational hygiene is implemented., Assumes activities are at ambient temperature (unless stated differently).

Conditions and measures related to personal protection, hygiene and health evaluation

Use suitable eye protection.
Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training. (Effectiveness (of a measure): 90 %)

1.2.3 Contributing scenario controlling worker exposure for: PROC3 Use in closed batch process (synthesis or formulation)**Product characteristics**

Concentration of the Substance in Mixture/Article : Covers the percentage of the substance in the product up to 100 % (unless stated differently).

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Physical Form (at time of use) : Solid, medium dustiness

Frequency and duration of use

Remarks : Covers daily exposures up to 8 hours (unless stated differently).

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use
Temperature : <= 40 °C

Technical conditions and measures

Provide a basic standard of general ventilation (1 to 3 air changes per hour) .
with local exhaust ventilation (for inhalation) (Effectiveness (of a measure): 90 %)

Organisational measures to prevent /limit releases, dispersion and exposure

Assumes a good basic standard of occupational hygiene is implemented., Assumes activities are at ambient temperature (unless stated differently).

Conditions and measures related to personal protection, hygiene and health evaluation

Use suitable eye protection.

1.2.4 Contributing scenario controlling worker exposure for: PROC4 Use in batch and other process (synthesis) where opportunity for exposure arises

Product characteristics

Concentration of the Substance in Mixture/Article : Covers the percentage of the substance in the product up to 100 % (unless stated differently).
Physical Form (at time of use) : Solid, medium dustiness

Frequency and duration of use

Remarks : Covers daily exposures up to 4 hours (unless stated differently).

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use
Temperature : <= 40 °C

Technical conditions and measures

Provide a good standard of controlled ventilation (5 to 10 air changes per hour) . (Effectiveness (of a measure): 70 %)
with local exhaust ventilation (for inhalation) (Effectiveness (of a measure): 90 %)

Organisational measures to prevent /limit releases, dispersion and exposure

Assumes a good basic standard of occupational hygiene is implemented., Assumes activities are at ambient temperature (unless stated differently).

Conditions and measures related to personal protection, hygiene and health evaluation

Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training. (Effectiveness (of a measure): 90 %)
Use suitable eye protection.

1.2.5 Contributing scenario controlling worker exposure for: PROC5 Mixing or blending in batch processes for formulation of preparations and articles (multistage and/ or significant contact)

Product characteristics

Concentration of the Substance in Mixture/Article : Covers the percentage of the substance in the product up to 100 % (unless stated differently).

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Physical Form (at time of use) : Solid, medium dustiness

Frequency and duration of use

Remarks : Covers daily exposures up to 4 hours (unless stated differently).

Other operational conditions affecting workers exposureOutdoor / Indoor : Indoor use
Temperature : <= 40 °C**Technical conditions and measures**Provide a good standard of controlled ventilation (5 to 10 air changes per hour) . (Effectiveness (of a measure): 70 %)
with local exhaust ventilation (for inhalation) (Effectiveness (of a measure): 90 %)**Organisational measures to prevent /limit releases, dispersion and exposure**

Assumes a good basic standard of occupational hygiene is implemented., Assumes activities are at ambient temperature (unless stated differently).

Conditions and measures related to personal protection, hygiene and health evaluationUse suitable eye protection.
Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training. (Effectiveness (of a measure): 90 %)**1.2.6 Contributing scenario controlling worker exposure for: PROC8a Transfer of substance or preparation (charging/discharging) from/ to vessels/ large containers at non-dedicated facilities****Product characteristics**Concentration of the Substance in Mixture/Article : Covers the percentage of the substance in the product up to 100 % (unless stated differently).
Physical Form (at time of use) : Solid, medium dustiness**Frequency and duration of use**

Remarks : Covers daily exposures up to 4 hours (unless stated differently).

Other operational conditions affecting workers exposureOutdoor / Indoor : Indoor use
Temperature : <= 40 °C**Technical conditions and measures**Provide a good standard of controlled ventilation (5 to 10 air changes per hour) . (Effectiveness (of a measure): 70 %)
with local exhaust ventilation (for inhalation) (Effectiveness (of a measure): 90 %)**Organisational measures to prevent /limit releases, dispersion and exposure**

Assumes a good basic standard of occupational hygiene is implemented., Assumes activities are at ambient temperature (unless stated differently).

Conditions and measures related to personal protection, hygiene and health evaluationWear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training. (Effectiveness (of a measure): 90 %)
Use suitable eye protection.**1.2.7 Contributing scenario controlling worker exposure for: PROC8b Transfer of substance or preparation (charging/discharging) from/ to vessels/ large containers at dedicated facilities**

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Product characteristics

Concentration of the Substance in Mixture/Article : Covers the percentage of the substance in the product up to 100 % (unless stated differently).
Physical Form (at time of use) : Solid, medium dustiness

Frequency and duration of use

Remarks : Covers daily exposures up to 8 hours (unless stated differently).

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use
Temperature : ≤ 40 °C

Technical conditions and measures

Provide a good standard of controlled ventilation (5 to 10 air changes per hour) . (Effectiveness (of a measure): 70 %)
with local exhaust ventilation (for inhalation) (Effectiveness (of a measure): 95 %)

Organisational measures to prevent /limit releases, dispersion and exposure

Assumes a good basic standard of occupational hygiene is implemented., Assumes activities are at ambient temperature (unless stated differently).

Conditions and measures related to personal protection, hygiene and health evaluation

Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training. (Effectiveness (of a measure): 90 %)
Use suitable eye protection.

1.2.8 Contributing scenario controlling worker exposure for: PROC9 Transfer of substance or preparation into small containers (dedicated filling line, including weighing)**Product characteristics**

Concentration of the Substance in Mixture/Article : Covers the percentage of the substance in the product up to 100 % (unless stated differently).
Physical Form (at time of use) : Solid, medium dustiness

Frequency and duration of use

Remarks : Covers daily exposures up to 4 hours (unless stated differently).

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use
Temperature : ≤ 40 °C

Technical conditions and measures

Provide a good standard of controlled ventilation (5 to 10 air changes per hour) . (Effectiveness (of a measure): 70 %)
with local exhaust ventilation (for inhalation) (Effectiveness (of a measure): 90 %)

Organisational measures to prevent /limit releases, dispersion and exposure

Assumes a good basic standard of occupational hygiene is implemented., Assumes activities are at ambient temperature (unless stated differently).

Conditions and measures related to personal protection, hygiene and health evaluation

Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training. (Effectiveness (of a measure): 90 %)
Use suitable eye protection.

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1.2.9 Contributing scenario controlling worker exposure for: PROC24 High (mechanical) energy work-up of substances bound in materials and/ or articles**Product characteristics**

Concentration of the Substance in Mixture/Article : Covers the percentage of the substance in the product up to 10%
Physical Form (at time of use) : Solid, medium dustiness

Frequency and duration of use

Remarks : Covers daily exposures up to 8 hours (unless stated differently).

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use
Temperature : ≤ 40 °C

Technical conditions and measures

Provide a basic standard of general ventilation (1 to 3 air changes per hour) .
with local exhaust ventilation (for inhalation) (Effectiveness (of a measure): 80 %)

Organisational measures to prevent /limit releases, dispersion and exposure

Assumes a good basic standard of occupational hygiene is implemented., Assumes activities are at ambient temperature (unless stated differently).

Conditions and measures related to personal protection, hygiene and health evaluation

Use suitable eye protection.

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1.3. Exposure estimation and reference to its source

Environment

Release factor	Value type	Compartment	Environmental exposure	RCR
ERC2	PEC	Fresh water	0.000472 mg/l	< 0.01
		Marine water	0.0000465 mg/l	< 0.01
		STP	0 mg/L	< 0.01
		Indirect exposure to humans via the environment		0.014

Human Health

Contributing Scenario	Specific conditions	Value type	Level of Exposure	RCR
PROC2	General exposures (closed systems), with sample collection	Inhalation - Acute - systemic effects	0.2 mg/m ³	< 0.01
		Inhalation - Long-term – local effects	0.05 mg/m ³	0.357
		Inhalation - Acute - local effects	0.2 mg/m ³	< 0.01
		Dermal - Long-term - systemic effects	0.137 mg/kg bw/day	< 0.01
		Combined routes - Long term effects		< 0.01
		Combined routes - Acute effects		< 0.01
PROC3	General exposures, Use in contained batch processes	Inhalation - Acute - systemic effects	0.4 mg/m ³	0.016
		Inhalation - Long-term – local effects	0.1 mg/m ³	0.714
		Inhalation - Acute - local effects	0.4 mg/m ³	0.016
		Dermal - Long-term - systemic effects	0.69 mg/kg bw/day	0.05
		Combined routes - Long term effects		0.05
		Combined routes - Acute effects		0.016
PROC4	General exposures, Batch process	Inhalation - Acute - systemic effects	0.6 mg/m ³	0.024
		Inhalation - Long-term – local effects	0.09 mg/m ³	0.643
		Inhalation - Acute - local effects	0.6 mg/m ³	0.024
		Dermal - Long-term - systemic effects	0.686 mg/kg bw/day	0.049
		Combined routes - Long term effects		0.049
		Combined routes - Acute effects		0.024
PROC5	Mixing operations (open systems)	Inhalation - Acute - systemic effects	0.6 mg/m ³	0.024
		Inhalation - Long-term – local effects	0.09 mg/m ³	0.643
		Inhalation - Acute - local effects	0.6 mg/m ³	0.024
		Dermal - Long-term - systemic effects	1.371 mg/kg bw/day	0.099
		Combined routes - Long term effects		0.099
		Combined routes - Acute effects		0.024
PROC8a	bulk open unloading,	Inhalation - Acute - systemic effects	0.6 mg/m ³	0.024

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	Non-dedicated facility			
		Inhalation - Long-term – local effects	0.09 mg/m ³	0.643
		Inhalation - Acute - local effects	0.6 mg/m ³	0.024
		Dermal - Long-term - systemic effects	1.371 mg/kg bw/day	0.099
		Combined routes - Long term effects		0.099
		Combined routes - Acute effects		0.024
PROC8b	bulk closed unloading, Dedicated facility	Inhalation - Acute - systemic effects	0.06 mg/m ³	< 0.01
		Inhalation - Long-term – local effects	0.015 mg/m ³	0.107
		Inhalation - Acute - local effects	0.06 mg/m ³	< 0.01
		Dermal - Long-term - systemic effects	1.371 mg/kg bw/day	0.099
		Combined routes - Long term effects		0.099
		Combined routes - Acute effects		< 0.01
PROC9	Material transfers, Small package filling	Inhalation - Acute - systemic effects	0.6 mg/m ³	0.024
		Inhalation - Long-term – local effects	0.09 mg/m ³	0.643
		Inhalation - Acute - local effects	0.6 mg/m ³	0.024
		Dermal - Long-term - systemic effects	0.686 mg/kg bw/day	0.049
		Combined routes - Long term effects		0.049
		Combined routes - Acute effects		0.024
PROC24	Machine, Metal machining operations	Inhalation - Acute - systemic effects	0.48 mg/m ³	0.019
		Inhalation - Long-term – local effects	0.12 mg/m ³	0.857
		Inhalation - Acute - local effects	0.48 mg/m ³	0.019
		Dermal - Long-term - systemic effects	1.698 mg/kg bw/day	0.122
		Combined routes - Long term effects		0.122
		Combined routes - Acute effects		0.019

RCR = Risk characterisation ratio

ERC2	Exposure Assessment Method : Used EUSES model.
PROC2	Exposure Assessment Method : ECETOC TRA v3.0 worker
PROC3	Exposure Assessment Method : ECETOC TRA v3.0 worker
PROC4	Exposure Assessment Method : ECETOC TRA v3.0 worker
PROC5	Exposure Assessment Method : ECETOC TRA v3.0 worker
PROC8a	Exposure Assessment Method : ECETOC TRA v3.0 worker
PROC8b	Exposure Assessment Method : ECETOC TRA v3.0 worker
PROC9	Exposure Assessment Method : ECETOC TRA v3.0 worker
PROC24	Exposure Assessment Method : ECETOC TRA v3.0 worker

1.4. Guidance to Downstream User to evaluate whether he works inside the boundaries set by the Exposure Scenario**1.4.1 Environment**

If a DU has OC/RMMs outside specifications in the ES, then the DU can evaluate whether he works inside the boundaries set by the ES through scaling in EUSES.

The main driving parameters are :

- local amount used (tonnage)
- release factor prior to on-site treatment
- on-site wastewater treatment presence and efficiency
- dilution factor, Required removal efficiency for wastewater can be achieved using onsite/offsite technologies, either alone or

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in combination., Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

1.4.2 Health

Predicted exposures are not expected to exceed the DN(M)EL when the risk management measures/operational conditions outlined in section 2 are implemented., Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

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2. ES2 : Industrial use, Uses in coatings and soldering/brazing material

2.1. Scenario description

Main User Groups	:	SU 3	Industrial uses: Uses of substances as such or in preparations at industrial sites
Sectors of end-use	:	SU17	General manufacturing, e.g. machinery, equipment, vehicles, other transport equipment
Environmental release category	:	ERC5	Industrial use resulting in inclusion into or onto a matrix
Process category	:	PROC7	Industrial spraying
		PROC10	Roller application or brushing
		PROC13	Treatment of articles by dipping and pouring
		PROC22	Potentially closed processing operations with minerals/ metals at elevated temperature; Industrial setting
		PROC24	High (mechanical) energy work-up of substances bound in materials and/ or articles
		PROC25	Other hot work operations with metals
Product category	:	PC38	Welding and soldering products (with flux coatings or flux cores.), flux products

2.2. Conditions of use affecting exposure

2.2.1 Contributing scenario controlling environmental exposure for: ERC5 Industrial use resulting in inclusion into or onto a matrix

Product characteristics

Concentration of the Substance in Mixture/Article	:	Covers the percentage of the substance in the product up to 100 % (unless stated differently).
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Amount

Local daily emission to waste water	:	0 kg
Daily local emission to air	:	0.002 kg
Local daily emission to soil	:	0 kg

Environmental factors

Flow rate	:	18,000 m3/d
Dilution Factor (River)	:	10
Dilution Factor (Coastal Areas)	:	100

Other given operational conditions affecting environmental exposure

Continuous release.		
Number of emission days per year	:	240
Release fraction to air from process (initial release prior to RMM):	:	0.00001
Release fraction to wastewater from process (initial release prior to RMM):	:	0
Release fraction to soil from process (initial release prior to RMM):	:	0
Remarks	:	Indoor/Outdoor use.

Technical conditions and measures / Organizational measures

Air	:	No air emission controls required
Water	:	Wastewater emission controls are not applicable as there is no direct release to wastewater.
Soil	:	Soil emission controls are not applicable as there is no direct release to soil.
Remarks	:	Common practices vary across sites thus conservative process release estimates used.

Conditions and measures related to sewage treatment plant

Flow rate of sewage treatment plant	:	2,000 m3/d
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effluent
Remarks : Not applicable as there is no release to wastewater.

Conditions and measures related to external treatment of waste for disposal

Waste treatment : External treatment and disposal of waste should comply with applicable local and/or national regulations.

Conditions and measures related to external recovery of waste

Recovery Methods : External recovery and recycling of waste should comply with applicable local and/or national regulations.

2.2.2 Contributing scenario controlling worker exposure for: PROC7 Industrial spraying**Product characteristics**

Concentration of the Substance in Mixture/Article : Covers the percentage of the substance in the product up to 100 % (unless stated differently).
Physical Form (at time of use) : Solid, low dustiness

Frequency and duration of use

Remarks : Covers daily exposures up to 8 hours (unless stated differently).

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use
Temperature : ≤ 40 °C

Technical conditions and measures

Provide a basic standard of general ventilation (1 to 3 air changes per hour) . (Effectiveness (of a measure): 0 %)
with local exhaust ventilation (for inhalation) (Effectiveness (of a measure): 95 %)

Organisational measures to prevent /limit releases, dispersion and exposure

Assumes a good basic standard of occupational hygiene is implemented., Assumes activities are at ambient temperature (unless stated differently).

Conditions and measures related to personal protection, hygiene and health evaluation

Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training. (Effectiveness (of a measure): 90 %)
Use suitable eye protection.

2.2.3 Contributing scenario controlling worker exposure for: PROC10 Roller application or brushing**Product characteristics**

Concentration of the Substance in Mixture/Article : Covers the percentage of the substance in the product up to 100 % (unless stated differently).
Physical Form (at time of use) : Solid, low dustiness

Frequency and duration of use

Remarks : Covers daily exposures up to 8 hours (unless stated differently).

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use
Temperature : ≤ 40 °C

Technical conditions and measures

Provide a basic standard of general ventilation (1 to 3 air changes per hour) . (Effectiveness (of a measure): 0 %)
with local exhaust ventilation (for inhalation) (Effectiveness (of a measure): 90 %)

Organisational measures to prevent /limit releases, dispersion and exposure

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Assumes a good basic standard of occupational hygiene is implemented., Assumes activities are at ambient temperature (unless stated differently).

Conditions and measures related to personal protection, hygiene and health evaluation

Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training. (Effectiveness (of a measure): 90 %)
Use suitable eye protection.

2.2.4 Contributing scenario controlling worker exposure for: PROC13 Treatment of articles by dipping and pouring**Product characteristics**

Concentration of the Substance in Mixture/Article : Covers the percentage of the substance in the product up to 100 % (unless stated differently).
Physical Form (at time of use) : Solid, low dustiness

Frequency and duration of use

Remarks : Covers daily exposures up to 8 hours (unless stated differently).

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use
Temperature : ≤ 40 °C

Technical conditions and measures

Provide a basic standard of general ventilation (1 to 3 air changes per hour) . (Effectiveness (of a measure): 0 %)
with local exhaust ventilation (for inhalation) (Effectiveness (of a measure): 90 %)

Organisational measures to prevent /limit releases, dispersion and exposure

Assumes activities are at ambient temperature (unless stated differently).
Assumes a good basic standard of occupational hygiene is implemented.

Conditions and measures related to personal protection, hygiene and health evaluation

Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training. (Effectiveness (of a measure): 90 %)
Use suitable eye protection.

2.2.5 Contributing scenario controlling worker exposure for: PROC24 High (mechanical) energy work-up of substances bound in materials and/ or articles**Product characteristics**

Concentration of the Substance in Mixture/Article : Covers the percentage of the substance in the product up to 10%
Physical Form (at time of use) : Solid, medium dustiness

Frequency and duration of use

Remarks : Covers daily exposures up to 8 hours (unless stated differently).

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use
Temperature : ≤ 40 °C

Technical conditions and measures

Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour). (Effectiveness (of a measure): 30 %)
with local exhaust ventilation (for inhalation) (Effectiveness (of a measure): 80 %)

NOCOLOK® Cs FLUX (SM)

Revision Date 01.02.2023

Organisational measures to prevent /limit releases, dispersion and exposure

Assumes a good basic standard of occupational hygiene is implemented.

Conditions and measures related to personal protection, hygiene and health evaluation

Use suitable eye protection.

2.2.6 Contributing scenario controlling worker exposure for: PROC22 Manufacturing and processing of minerals and/or metals at substantially elevated temperature**Product characteristics**

Concentration of the Substance in Mixture/Article : Covers the percentage of the substance in the product up to 10%

Physical Form (at time of use) : Solid, medium dustiness

Frequency and duration of use

Remarks : Covers use up to 4h, Occasional exposure

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use

Temperature : <= 700 °C

Technical conditions and measures

Provide a good standard of controlled ventilation (5 to 10 air changes per hour) . (Effectiveness (of a measure): 70 %)

with local exhaust ventilation (for inhalation) (Effectiveness (of a measure): 90 %)

Organisational measures to prevent /limit releases, dispersion and exposure

Assumes a good basic standard of occupational hygiene is implemented.

Conditions and measures related to personal protection, hygiene and health evaluation

Use suitable eye protection.

Remarks : elevated temperature, This product may release the following:, Gaseous hydrogen fluoride (HF).

2.2.7 Contributing scenario controlling worker exposure for: PROC25 Other hot work operation with metals**Product characteristics**

Concentration of the Substance in Mixture/Article : Covers the percentage of the substance in the product up to 5 % (unless stated differently).

Physical Form (at time of use) : Solid, medium dustiness

Frequency and duration of use

Remarks : Covers use up to 4h, Occasional exposure

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use

Temperature : <= 700 °C

Technical conditions and measures

Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour). (Effectiveness (of a measure): 30 %)

with local exhaust ventilation (for inhalation) (Effectiveness (of a measure): 90 %)

Organisational measures to prevent /limit releases, dispersion and exposure

Assumes a good basic standard of occupational hygiene is implemented.

SAFETY DATA SHEET
Transition document following UK exit from the EU

NOCOLOK® Cs FLUX (SM)

Revision Date 01.02.2023

Conditions and measures related to personal protection, hygiene and health evaluation

Use suitable eye protection.

Remarks : elevated temperature, This product may release the following:, Gaseous hydrogen fluoride (HF).

NOCOLOK® Cs FLUX (SM)

Revision Date 01.02.2023

2.3. Exposure estimation and reference to its source

Environment

Release factor	Value type	Compartment	Environmental exposure	RCR
ERC4, ERC5	PEC	Fresh water	0.000472 mg/l	< 0.01
		Marine water	0.0000465 mg/l	< 0.01
		STP	0 mg/L	< 0.01
		Indirect exposure to humans via the environment		< 0.01

Human Health

Contributing Scenario	Specific conditions	Value type	Level of Exposure	RCR
PROC7	Spraying	Inhalation - Acute - systemic effects	0.2 mg/m ³	< 0.01
		Inhalation - Long-term – local effects	0.05 mg/m ³	0.357
		Inhalation - Acute - local effects	0.2 mg/m ³	< 0.01
		Dermal - Long-term - systemic effects	4.286 mg/kg bw/day	0.308
		Combined routes - Long term effects		0.308
		Combined routes - Acute effects		< 0.01
PROC10	Rolling, Brushing	Inhalation - Acute - systemic effects	0.2 mg/m ³	< 0.01
		Inhalation - Long-term – local effects	0.05 mg/m ³	0.357
		Inhalation - Acute - local effects	0.2 mg/m ³	< 0.01
		Dermal - Long-term - systemic effects	2.743 mg/kg bw/day	0.197
		Combined routes - Long term effects		0.197
		Combined routes - Acute effects		< 0.01
PROC13	Treatment by dipping and pouring	Inhalation - Acute - systemic effects	0.04 mg/m ³	< 0.01
		Inhalation - Long-term – local effects	0.01 mg/m ³	0.071
		Inhalation - Acute - local effects	0.04 mg/m ³	< 0.01
		Dermal - Long-term - systemic effects	1.371 mg/kg bw/day	0.099
		Combined routes - Long term effects		0.099
		Combined routes - Acute effects		< 0.01
PROC24	Rework of articles	Inhalation - Acute - systemic effects	0.336 mg/m ³	0.013
		Inhalation - Long-term – local effects	0.084 mg/m ³	0.6
		Inhalation - Acute - local effects	0.336 mg/m ³	0.013
		Dermal - Long-term - systemic effects	1.698 mg/kg bw/day	0.122
		Combined routes - Acute effects		0.122
		Combined routes - Long term effects		0.013
PROC22	elevated temperature	Inhalation - Acute - systemic effects	0.72 mg/m ³	0.028
		Inhalation - Long-term – local effects	0.108 mg/m ³	0.771
		Inhalation - Acute - local effects	0.72 mg/m ³	0.028
		Dermal - Long-term - systemic effects	1.698 mg/kg bw/day	0.122

NOCOLOK® Cs FLUX (SM)

Revision Date 01.02.2023

		Combined routes - Acute effects		0.122
		Combined routes - Long term effects		0.028
PROC25	elevated temperature	Inhalation - Acute - systemic effects	0.28 mg/m ³	0.011
		Inhalation - Long-term - local effects	0.042 mg/m ³	0.3
		Inhalation - Acute - local effects	0.28 mg/m ³	0.011
		Dermal - Long-term - systemic effects	0.056 mg/kg bw/day	< 0.01
		Combined routes - Acute effects		< 0.01
		Combined routes - Long term effects		0.011

RCR = Risk characterisation ratio

ERC4, ERC5	Exposure Assessment Method : Used EUSES model.
PROC7	Exposure Assessment Method : ECETOC TRA v3.0 worker
PROC10	Exposure Assessment Method : ECETOC TRA v3.0 worker
PROC13	Exposure Assessment Method : ECETOC TRA v3.0 worker
PROC24	Exposure Assessment Method : ECETOC TRA v3.0 worker
PROC22	Exposure Assessment Method : ECETOC TRA v3.0 worker
PROC25	Exposure Assessment Method : ECETOC TRA v3.0 worker

2.4. Guidance to Downstream User to evaluate whether he works inside the boundaries set by the Exposure Scenario

2.4.1 Environment

If a DU has OC/RMMs outside specifications in the ES, then the DU can evaluate whether he works inside the boundaries set by the ES through scaling in EUSES.

The main driving parameters are :

- local amount used (tonnage)
- release factor prior to on-site treatment
- on-site wastewater treatment presence and efficiency
- dilution factor, Required removal efficiency for wastewater can be achieved using onsite/offsite technologies, either alone or in combination., Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

2.4.2 Health

Predicted exposures are not expected to exceed the DN(M)EL when the risk management measures/operational conditions outlined in section 2 are implemented., Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

NOCOLOK® Cs FLUX (SM)

Revision Date 01.02.2023

3. ES3 : Professional use as soldering/brazing material

3.1. Scenario description

Main User Groups	: SU 22	Professional uses: Public domain (administration, education, entertainment, services, craftsmen)
Environmental release category	: ERC8a	Wide dispersive indoor use of processing aids in open systems
Process category	: PROC25	Other hot work operations with metals

3.2. Conditions of use affecting exposure

3.2.1 Contributing scenario controlling environmental exposure for: ERC8a Wide dispersive indoor use of processing aids in open systems

Product characteristics

Concentration of the Substance in Mixture/Article	: Covers the percentage of the substance in the product up to 100 % (unless stated differently).
---	--

Amount

Local daily emission to waste water	: 0.028 kg/day
Daily local emission to air	: 0.028 kg/day
Local daily emission to soil	: 0 kg/day

Technical conditions and measures / Organizational measures

Air	: Air emission controls are not applicable as there is no direct release to air.
Water	: Wastewater emission controls are not applicable as there is no direct release to wastewater.
Soil	: Soil emission controls are not applicable as there is no direct release to soil.
Remarks	: Common practices vary across sites thus conservative process release estimates used.

Conditions and measures related to sewage treatment plant

Type of Sewage Treatment Plant	: Municipal Sewage Treatment Plant
Effectiveness (of a measure)	: 0.154 %

Conditions and measures related to external treatment of waste for disposal

Waste treatment	: External treatment and disposal of waste should comply with applicable local and/or national regulations.
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Conditions and measures related to external recovery of waste

Recovery Methods	: External recovery and recycling of waste should comply with applicable local and/or national regulations.
------------------	---

3.2.3 Contributing scenario controlling worker exposure for: PROC25 Other hot work operations with metals

Product characteristics

Concentration of the Substance in Mixture/Article	Covers the percentage of the substance in the product up to 1 %
Physical Form (at time of use)	: Solid, medium dustiness

Frequency and duration of use

Remarks	: Covers daily exposures up to 4 hours (unless stated differently).
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Other operational conditions affecting workers exposure

Outdoor / Indoor	: Indoor use
Temperature	: <= 700 °C

NOCOLOK® Cs FLUX (SM)

Revision Date 01.02.2023

Technical conditions and measures

Provide a basic standard of general ventilation (1 to 3 air changes per hour) . (Effectiveness (of a measure): 0 %)
with local exhaust ventilation (for inhalation) (Effectiveness (of a measure): 80 %)

Organisational measures to prevent /limit releases, dispersion and exposure

Assumes a good basic standard of occupational hygiene is implemented.

Conditions and measures related to personal protection, hygiene and health evaluation

Use suitable eye protection.

Remarks : elevated temperature, This product may release the following:, Gaseous hydrogen fluoride (HF).

3.3. Exposure estimation and reference to its source**Environment**

Release factor	Value type	Compartment	Environmental exposure	RCR
ERC8a		Fresh water	0.00185 mg/l	0.018
		Marine water	0.000184 mg/l	0.018
		STP	0.014 mg/l	0.014
		Indirect exposure to humans via the environment		< 0.01

Human Health

Contributing Scenario	Specific conditions	Value type	Level of Exposure	RCR
PROC25	elevated temperature	Inhalation - Acute - systemic effects	0.8 mg/m ³	0.032
		Inhalation - Long-term – local effects	0.12 mg/m ³	0.857
		Inhalation - Acute - local effects	0.8 mg/m ³	0.032
		Dermal - Long-term - systemic effects	0.028 mg/kg bw/day	< 0.01
		Combined routes - Long term effects		< 0.01
		Combined routes - Acute effects		0.032

RCR = Risk characterisation ratio

ERC8a Exposure Assessment Method : Used EUSES model.
PROC25 Exposure Assessment Method : ECETOC TRA v3.0 worker

3.4. Guidance to Downstream User to evaluate whether he works inside the boundaries set by the Exposure Scenario

If a DU has OC/RMMs outside specifications in the ES, then the DU can evaluate whether he works inside the boundaries set by the ES through scaling in EUSES.

The main driving parameters are :

- local amount used (tonnage)
- release factor prior to on-site treatment
- on-site wastewater treatment presence and efficiency
- dilution factor, Required removal efficiency for wastewater can be achieved using onsite/offsite technologies, either alone or in combination., Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

NOCOLOK® Cs FLUX (SM)

Revision Date 01.02.2023

4. ES4 : Laboratory professional use**4.1. Scenario description**

Life Cycle Stage	:	PW	Widespread use by professional workers
Environmental release category	:	ERC8a	Widespread use of non-reactive processing aid (no inclusion into or onto article, indoor)
Process category	:	PROC15	Use as laboratory reagent

4.2. Conditions of use affecting exposure**4.2.1 Contributing scenario controlling environmental exposure for: ERC8a Widespread use of non-reactive processing aid (no inclusion into or onto article, indoor)****Product characteristics**

Concentration of the Substance in Mixture/Article	:	Covers the percentage of the substance in the product up to 100 % (unless stated differently).
---	---	--

Amount

Local daily emission to waste water	:	0.003 kg/day
Daily local emission to air	:	0.003 kg/day
Local daily emission to soil	:	0 kg/day

Technical conditions and measures / Organizational measures

Air	:	Air emission controls are not applicable as there is no direct release to air.
Water	:	Wastewater emission controls are not applicable as there is no direct release to wastewater.
Soil	:	Soil emission controls are not applicable as there is no direct release to soil.
Remarks	:	Common practices vary across sites thus conservative process release estimates used.

Conditions and measures related to sewage treatment plant

Type of Sewage Treatment Plant	:	Municipal Sewage Treatment Plant
Effectiveness (of a measure)	:	0.154 %

Conditions and measures related to external treatment of waste for disposal

Waste treatment	:	External treatment and disposal of waste should comply with applicable local and/or national regulations.
-----------------	---	---

Conditions and measures related to external recovery of waste

Recovery Methods	:	External recovery and recycling of waste should comply with applicable local and/or national regulations.
------------------	---	---

4.2.2 Contributing scenario controlling worker exposure for: PROC15 Use as laboratory reagent**Product characteristics**

Concentration of the Substance in Mixture/Article	:	Covers the percentage of the substance in the product up to 100 % (unless stated differently).
Physical Form (at time of use)	:	Solid, medium dustiness

Frequency and duration of use

Remarks	:	Covers daily exposures up to 8 hours (unless stated differently).
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Other operational conditions affecting workers exposure

Outdoor / Indoor	:	Indoor use
Temperature	:	<= 40 °C

NOCOLOK® Cs FLUX (SM)

Revision Date 01.02.2023

Technical conditions and measures

Provide a basic standard of general ventilation (1 to 3 air changes per hour) . (Effectiveness (of a measure): 0 %)
with local exhaust ventilation (for inhalation) (Effectiveness (of a measure): 80 %)

Organisational measures to prevent /limit releases, dispersion and exposure

Assumes a good basic standard of occupational hygiene is implemented., Assumes activities are at ambient temperature (unless stated differently).

Conditions and measures related to personal protection, hygiene and health evaluation

Use suitable eye protection.

4.3. Exposure estimation and reference to its source

Environment

Release factor	Value type	Compartment	Environmental exposure	RCR
ERC8a		Fresh water	0.000609 mg/l	< 0.01
		Marine water	0.0000602 mg/l	< 0.01
		STP	0.00173 mg/l	< 0.01
		Indirect exposure to humans via the environment		< 0.01

Human Health

Contributing Scenario	Specific conditions	Value type	Level of Exposure	RCR
PROC15		Inhalation - Acute - systemic effects	0.4 mg/m ³	0.016
		Inhalation - Long-term – local effects	0.1 mg/m ³	0.714
		Inhalation - Acute - local effects	0.4 mg/m ³	0.016
		Dermal - Long-term - systemic effects	0.34 mg/kg bw/day	0.024
		Combined routes - Long term effects		0.024
		Combined routes - Acute effects		0.016

RCR = Risk characterisation ratio

ERC8a Exposure Assessment Method : Used EUSES model.
PROC15 Exposure Assessment Method : ECETOC TRA v3.0 worker

4.4. Guidance to Downstream User to evaluate whether he works inside the boundaries set by the Exposure Scenario

4.4.1 Environment

If a DU has OC/RMMs outside specifications in the ES, then the DU can evaluate whether he works inside the boundaries set by the ES through scaling in EUSES.

The main driving parameters are :

- local amount used (tonnage)
- release factor prior to on-site treatment
- on-site wastewater treatment presence and efficiency
- dilution factor, Required removal efficiency for wastewater can be achieved using onsite/offsite technologies, either alone or in combination., Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

4.4.2 Health

P00000222060

Version : 3.01 / GB (EN)

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NOCOLOK® Cs FLUX (SM)

Revision Date 01.02.2023

Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels., Predicted exposures are not expected to exceed the DN(M)EL when the risk management measures/operational conditions outlined in section 2 are implemented.

Shipper
LEXZAU, SCHARBAU GMBH & CO. KG
KAP-HORN-STR. 18,
28237 BREMEN, GERMANY
TAX ID: DE 114624125

B/L No.
ALM249820 - A

FMC Organization No. 025875



SACO SHIPPING LINE LTD

General Agent
SACO Shipping GmbH
Wollkaemmereistrasse 1
21107 Hamburg - Germany

ALL COSTS, CHARGES,
LIABILITIES AND DELAYS
RESULTING FROM EMERGENCY
QUARANTINE FOR WOOD AND
WOODEN PACKAGING OR FROM
INSUFFICIENT OR IMPROPER
LABELLING OF NON WOODEN
PACKAGING ARE FOR
CUSTOMER'S ACCOUNT

Consigned to order of

LESCHACO MEXICANA,S.A. DE C.V.
BLVD. MANUEL AVILA CAMACHO
NO. 88-PISO 8
COL. LOMAS DE CHAPULTEPEC
11000 MEXICO, D.F., MEXICO
TEL.: +52(55)59550000
RFC: LME980116R15

Notify Party and address

LESCHACO MEXICANA,S.A. DE C.V.
BLVD. MANUEL AVILA CAMACHO
NO. 88-PISO 8
COL. LOMAS DE CHAPULTEPEC
11000 MEXICO, D.F., MEXICO
TEL.: +52(55)59550000
RFC: LME980116R15

Place of receipt

CFS BREMEN

Ocean vessel

DIMITRA C

Port of loading

HAMBURG

Port of discharge

ALTAMIRA

Place of delivery

CFS ALTAMIRA

Freight payable

BREMEN

Number of original Bills of Lading

0/ZERO

Marks and Nos.

Quantity of Goods

Description of Goods

Said to contain

Gross weight, kg.

Measurement, m³

CARGO DETAILS AS PER ATTACHED STATEMENT

Copy

FREIGHT PREPAID - SHIPPED ON BOARD - EXPRESS RELEASE

All particulars above declared by Merchant

For delivery of cargo please apply to:

INTERTEAM, S.A. DE C.V.
SERVIC. INTERNACION. DE COMERCIO
COLIMA 114 DESPACHO 201
COLONIA ROMA,C.P.06700, MEXICO DF
PH: 514-69 15 FX: 208-79-8
INT-961206-ES7

Declared Value of the Goods (see clause 12)

US\$

Ad valorem freight paid:

Note:

The Merchant's attention is called to the fact that according to Clauses 11 to 13 of this Bill of Lading, the liability of the Carrier is, in most cases, limited in respect of loss of or damage to the goods and delay

RECEIVED for shipment the above mentioned Goods in apparent good order and condition as far as could be ascertained by exercising reasonable means of checking or as stated above.

The Carrier in accordance with the provisions contained on this side and on the reverse side of this document;

- undertakes to perform or to procure the performance of the entire transport from the place at which the Goods are taken in charge to the place designated for delivery in this document, and
- assumes liability as prescribed in this document for such transport.

One of the Bills of Lading to be surrendered duly endorsed in exchange for the Goods or delivery order.

IN WITNESS whereof three (3) original Bills of Lading have been signed, if not otherwise stated above, one of which being accomplished the other(s) to be void.

Place and date of issue

BREMEN 14.07.2023

Signed for the Carrier



SACO Shipping GmbH

as agent of carrier SACO SHIPPING LINE LIMITED

Marks and Nos.	Quantity of Goods	Description of Goods	Said to contain	Gross weight, kg.	Measurement, m ³	
WEYLICHEM FRANKFURT GMBH AKRA POLYESTER, MEXICO GLICIDETER 100	2 COLLI	=1 CP3 PALLET 288,000 KG		1138,000	3,184	- A
WEYLICHEM FRANKFURT GMBH AKRA POLYESTER, MEXICO GLICIDETER 100 STOWED INTO CONTAINER NO.: TRHU7015737		1 STEEL DRUM GLICIDETER 100 HS CODE: 29109000				
		= 1 IBC COMPOSITE UN 31HA1 850,000 KG				
		GLICIDETER 100 HS CODE: 29109000				
				SEAL : WWA030053848		
SOLVAY FLOUR GMBH MEXICO ALTAMIRA PO 4514096201	6 PALLETS	54 STEEL DRUMS UN 1A1 NOCOLOK CS FLUX (SM) HS CODE: 38109099 UN 3077, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (CESIUM POTASSIUM FLUOROALUMINATE), 9, III, MARINE POLLUTANT		2442,960	7,428	- A
		UN 3077/Class 9/PG III Imo Gross Weight: 2442,960 KGS Imo Net Weight : 2160,000 KGS				
				SEAL : WWA030053848		
STOWED INTO CONTAINER NO.: TRHU7015737						
ETO MAGNETIC MEXICO INVOICE NO. 4032762 STOWED INTO CONTAINER NO.: TGCU5192013	2 PALLETS	64 CARTONS 70166 ANKER HS CODE: 85030099		480,720	0,749	
				SEAL : WWA030053847		
SOLVAY FLOUR GMBH MEXICO ALTAMIRA PO 4514119934	3 PALLETS	144 BUCKETS NOCOLOK FLUX PASTE S01-23 IN 10 KG EUROTAINER HS CODE: 38101000		1577,999	5,046	
				SEAL : WWA030053847		
STOWED INTO CONTAINER NO.: TGCU5192013						
ZWICKROELL S.A. DE C.V.AV. SANTA FE NO. 170 OF. 0-2-06 LOMAS DE SANTA FE 01210 MEXICO D.F. MEXICO PO: ZRMX-1055 STOWED INTO CONTAINER NO.: TRHU7015737	3 CASES	ZWICKROELL MATERIALS TESTING MACHINE Z400E HS CODE: 90241020		2813,000	9,075	- A
				SEAL : WWA030053848		
TOTAL		16 PACKAGES		8452,679 KGS	25,482 CBM	

Shipper
APC LOGISTICS GERMANY
HALSKESTR. 32
40880 RATINGEN
GERMANY
CTC: JENNI KOLAUCH
TAX-ID:DE324954295

Consigned to order of
EUROPARTNERS MEXICO, S.A. DE C.V.
TELS: (52)(81) 82202630
AV. REVOLUCION 649
COLONIA JARDIN ESPANOL MONTERREY
NUEVO LEON MEXICO, C.P. 64820
RFC: EME020824U4A

Notify Party and address
SAME AS CONSIGNEE

B/L No.
ALM249864

FMC Organization No. 025875



General Agent
SACO Shipping GmbH
Wollkaemmereistrasse 1
21107 Hamburg - Germany

ALL COSTS, CHARGES,
LIABILITIES AND DELAYS
RESULTING FROM EMERGENCY
QUARANTINE FOR WOOD AND
WOODEN PACKAGING OR FROM
INSUFFICIENT OR IMPROPER
LABELLING OF NON WOODEN
PACKAGING ARE FOR
CUSTOMER'S ACCOUNT

3/07/BRE/526905

Copy

		Place of receipt BREMEN CFS	
Ocean vessel DIMITRA C		Port of loading HAMBURG	
Port of discharge ALTAMIRA	Place of delivery ALTAMIRA CFS		Freight payable BREMEN
		Number of original Bills of Lading 0/ZERO	
Marks and Nos. VKI 10016517	Quantity of Goods 11 PALLETS	Description of Goods PUMP HOUSING AND PUMP COVER	Said to contain Gross weight, kg. 3768,240
		Measurement, m ³ 6,758	

HS CODE: 84139100

STOWED INTO CONTAINER NO.: TRHU7015737

SEAL : WWA030053848

TOTAL **11 PALLETS** **3768,240 KGS** **6,758 CBM**

FREIGHT PREPAID - SHIPPED ON BOARD - EXPRESS RELEASE

All particulars above declared by Merchant

For delivery of cargo please apply to:

INTERTEAM, S.A. DE C.V.
SERVIC. INTERNACION. DE COMERCIO
COLIMA 114 DESPACHO 201
COLONIA ROMA, C.P. 06700, MEXICO DF
PH: 514-69 15 FX: 208-79-8
INT-961206-ES7

Declared Value of the Goods (see clause 12)
US\$
Ad valorem freight paid:

Note:

The Merchant's attention is called to the fact that according to Clauses 11 to 13 of this Bill of Lading, the liability of the Carrier is, in most cases, limited in respect of loss of or damage to the goods and delay

RECEIVED for shipment the above mentioned Goods in apparent good order and condition as far as could be ascertained by exercising reasonable means of checking or as stated above.

The Carrier in accordance with the provisions contained on this side and on the reverse side of this document;

- undertakes to perform or to procure the performance of the entire transport from the place at which the Goods are taken in charge to the place designated for delivery in this document, and
- assumes liability as prescribed in this document for such transport.

One of the Bills of Lading to be surrendered duly endorsed in exchange for the Goods or delivery order.

IN WITNESS whereof three (3) original Bills of Lading have been signed, if not otherwise stated above, one of which being accomplished the other(s) to be void.

Place and date of issue
BREMEN 14.07.2023

Signed for the Carrier



SACO Shipping GmbH

as agent of carrier SACO SHIPPING LINE LIMITED

Shipper
C.H. MUELLER GMBH
GEWERBERING 1
08468 HEINSDORFERGRUND
GERMANY
VAT: DE141335912

Consigned to order of
FEHRER AUTOMOTIVE MEXICO S.A.
DE C.V. / RFC: FAM160721NTA
SERVIDUMBRE DE PASO 851 LOTE V1
PARQUE INDUSTRIAL SANTA MONICA
25300 DERRAMADERE-SALTILLO,
COAH. C.P.MEXIKO

Notify Party and address
FEHRER AUTOMOTIVE MEXICO S.A.
DE C.V. / RFC: FAM160721NTA
SERVIDUMBRE DE PASO 851 LOTE V1
PARQUE INDUSTRIAL SANTA MONICA
25300 DERRAMADERE-SALTILLO,
COAH. C.P.MEXIKO ++

	Place of receipt
	CFS BREMEN

Ocean vessel	Port of loading
DIMITRA C	HAMBURG

Port of discharge	Place of delivery	Freight payable	Number of original Bills of Lading
ALTAMIRA	DOOR SALTILLO	BREMEN	0/ZERO

Marks and Nos.	Quantity of Goods	Description of Goods	Said to contain	Gross weight, kg.	Measurement, m ³
CARGO DETAILS AS PER ATTACHED STATEMENT					

B/L No.
ALM249876

FMC Organization No. 025875



General Agent
SACO Shipping GmbH
Wollkaemmereistrasse 1
21107 Hamburg - Germany

ALL COSTS, CHARGES,
LIABILITIES AND DELAYS
RESULTING FROM EMERGENCY
QUARANTINE FOR WOOD AND
WOODEN PACKAGING OR FROM
INSUFFICIENT OR IMPROPER
LABELLING OF NON WOODEN
PACKAGING ARE FOR
CUSTOMER'S ACCOUNT

3/07/BRE/526906

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FREIGHT PREPAID UPTO DAP – SHIPPED ON BOARD – EXPRESS B/L

All particulars above declared by Merchant

For delivery of cargo please apply to:

INTERTEAM, S.A. DE C.V.
SERVIC. INTERNACION. DE COMERCIO
COLIMA 114 DESPACHO 201
COLONIA ROMA,C.P.06700, MEXICO DF
PH: 514-69 15 FX: 208-79-8
INT-961206-ES7

Declared Value of the Goods (see clause 12)
US\$
Ad valorem freight paid:

Note:

The Merchant's attention is called to the fact that according to Clauses 11 to 13 of this Bill of Lading, the liability of the Carrier is, in most cases, limited in respect of loss of or damage to the goods and delay

RECEIVED for shipment the above mentioned Goods in apparent good order and condition as far as could be ascertained by exercising reasonable means of checking or as stated above.

The Carrier in accordance with the provisions contained on this side and on the reverse side of this document;

- undertakes to perform or to procure the performance of the entire transport from the place at which the Goods are taken in charge to the place designated for delivery in this document, and
- assumes liability as prescribed in this document for such transport.

One of the Bills of Lading to be surrendered duly endorsed in exchange for the Goods or delivery order.

IN WITNESS whereof three (3) original Bills of Lading have been signed, if not otherwise stated above, one of which being accomplished the other(s) to be void.

Place and date of issue
BREMEN 14.07.2023

Signed for the Carrier



SACO Shipping GmbH

as agent of carrier SACO SHIPPING LINE LIMITED

Marks and Nos.	Quantity of Goods	Description of Goods	Said to contain	Gross weight, kg.	Measurement, m ³
FEHRER AUTOMOTIVE MEXICO S.A. DE C.V. DN 446291	56 CARTONS	STOWED ON 7 PALLETS 4327 PACKAGES PVC BLANKS AND CUTS FROM LEATHER FOR AUTOMOTIVE INTERIORS HS CODE: 39269097, 42050090 FREIGHT PREPAID DAP SALTILLO SHIPPER'S REF: ID73431 ++ CONTACT: PERLA IRAZEMA ALEMAN / MATERIALS PLANNER MOBILE: +52 844 2773623 / IRAZEMA.ALEMAN@FEHRER.MX JEANETTE CONSTANCIO GUERRERO / LOGISTICS M: +528442862052 / JEANETTE.CONSTANCIO@FEHRER.MX		890,000	11,893
STOWED INTO CONTAINER NO.: TRHU7015737				SEAL : WWA030053848	
TOTAL	56 CARTONS			890,000 KGS	11,893 CBM