



IRMCO ® 980-146

Safety Data Sheet

according to the REACH Regulation (EC) 1907/2006 amended by Regulation (EU) 2020/878
Issue date: 12/17/2015 Revision date: 6/20/2024 Supersedes version of: 12/20/2023 Version: 2.5

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

1.1. Product identifier

Product form : Mixture
Product name : IRMCO ® 980-146
UFI : U74N-JPD4-9U10-A9V1
Product code : F146-492
Type of product : Lubricants
Product group : Trade product

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

Relevant identified uses

Main use category : Industrial use
Industrial/Professional use spec : Industrial
Use of the substance/mixture : This product is a water-based metalworking lubricant containing additives for corrosion inhibition, metalworking performance, film strength, and fluid preservation. There is no petroleum oil content in this product.

1.3. Details of the supplier of the safety data sheet

IRMCO
2117 Greenleaf Street
60202 Evanston, IL
USA
T 847-864-0255, F 847-864-0012
SDS@irmco.com, www.IRMCO.com

US Distributor
Fuchs Lubricants Co.
17050 Lathrop Avenue
Harvey, IL 60426
(708) 333-8900
(800) 255-3924 24 hrs Emergency

1.4. Emergency telephone number

Emergency number : 847-864-0255
Monday-Friday 8:30 AM - 4:30 PM Central Standard Time (CST)

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

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

Skin corrosion/irritation Category 2 H315
Serious eye damage/eye irritation, Category 2 H319
Full text of H- and EUH-statements: see section 16

Adverse physicochemical, human health and environmental effects

No additional information available

2.2. Label elements

Labeling according to Regulation (EC) No. 1272/2008 [CLP]

Hazard pictograms (CLP)



GHS07

Signal word (CLP) : Warning
Hazard statements (CLP) : H315 - Causes skin irritation.
H319 - Causes serious eye irritation.
Precautionary statements (CLP) : P264 - Wash hands thoroughly after handling.
P280 - Wear protective gloves, protective clothing, eye protection, face protection.
P302+P352 - IF ON SKIN: Wash with plenty of soap and water.
P305+P351+P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove

IRMCO ® 980-146

Safety Data Sheet

according to the REACH Regulation (EC) 1907/2006 amended by Regulation (EU) 2020/878

EUH phrases	contact lenses, if present and easy to do. Continue rinsing.
	P332+P313 - If skin irritation occurs: Get medical advice/attention.
	: EUH208 - Contains 1,2-benzisothiazol-3(2H)-one(2634-33-5). May produce an allergic reaction.

2.3. Other hazards

Contains no PBT and/or vPvB substances $\geq 0.1\%$ assessed in accordance with REACH Annex XIII

Component	
Substance(s) not meeting the PBT criteria of REACH regulation, in accordance with Annex XIII	Triethanolamine (102-71-6), 2-aminoethanol, ethanolamine (141-43-5), 1,2-benzisothiazol-3(2H)-one, 1,2-benzisothiazolin-3-one (2634-33-5) ⁽¹⁾
Substance(s) not meeting the vPvB criteria of REACH regulation, in accordance with Annex XIII	Triethanolamine (102-71-6), 2-aminoethanol, ethanolamine (141-43-5), 1,2-benzisothiazol-3(2H)-one, 1,2-benzisothiazolin-3-one (2634-33-5) ⁽¹⁾

⁽¹⁾ Substance(s) in concentration below 0.1 % and displayed on a voluntary basis

The mixture does not contain substance(s) included in the list established in accordance with Article 59(1) of REACH for having endocrine disrupting properties, or substance(s) are not identified as having endocrine disrupting properties in accordance with the criteria set out in Commission Delegated Regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at a concentration equal to or greater than 0,1 %

Component	
Substance(s) not included in the list established in accordance with Article 59(1) of REACH for having endocrine disrupting properties, or is not identified as having endocrine disrupting properties in accordance with the criteria set out in Commission Delegated Regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605	Triethanolamine (102-71-6), 2-aminoethanol, ethanolamine (141-43-5), 1,2-benzisothiazol-3(2H)-one, 1,2-benzisothiazolin-3-one (2634-33-5) ⁽¹⁾

⁽¹⁾ Substance(s) in concentration below 0.1 % and displayed on a voluntary basis

SECTION 3: Composition/Information on ingredients

3.2. Mixtures

Name	Product identifier	%	Classification according to Regulation (EC) No. 1272/2008 [CLP]
Triethanolamine substance with national workplace exposure limit(s) (AT, BE, CZ, DE, DK, EE, ES, FI, IE, LT, PT, SE)	CAS-No.: 102-71-6 EC-No.: 203-049-8 REACH-no: 01-2119486482-31	≤ 21.3	Not classified
2-aminoethanol, ethanolamine substance with national workplace exposure limit(s) (AT, BE, BG, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GI, GR, HR, HU, IE, IT, LT, LU, LV, MT, NL, PL, PT, RO, SE, SI, SK); substance with a Community workplace exposure limit	CAS-No.: 141-43-5 EC-No.: 205-483-3 EC Index-No.: 603-030-00-8 REACH-no: 01-2119486455-28	≤ 1.5	Skin Corr. 1A, H314
1,2-benzisothiazol-3(2H)-one, 1,2-benzisothiazolin-3-one	CAS-No.: 2634-33-5 EC-No.: 220-120-9 EC Index-No.: 613-088-00-6 REACH-no: 01-2120761540-60	< 0.05	Acute Tox. 4 (Oral), H302 Skin Irrit. 2, H315 Eye Dam. 1, H318 Skin Sens. 1, H317 Aquatic Acute 1, H400

IRMCO ® 980-146

Safety Data Sheet

according to the REACH Regulation (EC) 1907/2006 amended by Regulation (EU) 2020/878

Specific concentration limits:		
Name	Product identifier	Specific concentration limits (%)
2-aminoethanol, ethanolamine	CAS-No.: 141-43-5 EC-No.: 205-483-3 EC Index-No.: 603-030-00-8 REACH-no: 01-2119486455-28	(5 ≤ C < 100) STOT SE 3; H335
1,2-benzisothiazol-3(2H)-one, 1,2-benzisothiazolin-3-one	CAS-No.: 2634-33-5 EC-No.: 220-120-9 EC Index-No.: 613-088-00-6 REACH-no: 01-2120761540-60	(0.05 ≤ C < 100) Skin Sens. 1; H317

Full text of H- and EUH-statements: see section 16

SECTION 4: First aid measures

4.1. Description of first aid measures

First-aid measures general	: Never give anything by mouth to an unconscious person. If you feel unwell, seek medical advice (show the label where possible).
First-aid measures after inhalation	: Allow affected person to breathe fresh air. Allow the victim to rest.
First-aid measures after skin contact	: Wash with plenty of soap and water. Wash contaminated clothing before reuse. If skin irritation or rash occurs: Get medical advice/attention.
First-aid measures after eye contact	: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention. Rinse immediately with plenty of water. Obtain medical attention if pain, blinking or redness persists.
First-aid measures after ingestion	: Rinse mouth. Do NOT induce vomiting. Obtain emergency medical attention.

4.2. Most important symptoms and effects, both acute and delayed

Symptoms/effects after inhalation	: May cause respiratory irritation.
Symptoms/effects after skin contact	: May cause an allergic skin reaction. Repeated exposure may cause skin dryness or cracking. May cause moderate irritation. Causes skin irritation.
Symptoms/effects after eye contact	: Causes serious eye irritation.
Symptoms/effects after ingestion	: Irritation of the gastric/intestinal mucosa. On ingestion, may affect the liver and kidneys.

4.3. Indication of any immediate medical attention and special treatment needed

No additional information available

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media	: Foam. Dry powder. Carbon dioxide. Water spray. Sand.
Unsuitable extinguishing media	: Do not use a heavy water stream.

5.2. Special hazards arising from the substance or mixture

No additional information available

5.3. Advice for firefighters

Firefighting instructions	: Use water spray or fog for cooling exposed containers. Exercise caution when fighting any chemical fire. Prevent fire-fighting water from entering environment.
Protection during firefighting	: Do not enter fire area without proper protective equipment, including respiratory protection.

IRMCO ® 980-146

Safety Data Sheet

according to the REACH Regulation (EC) 1907/2006 amended by Regulation (EU) 2020/878

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

For non-emergency personnel

Emergency procedures : Evacuate unnecessary personnel.

For emergency responders

Protective equipment : Equip cleanup crew with proper protection.

Emergency procedures : Ventilate area.

6.2. Environmental precautions

Prevent entry to sewers and public waters. Notify authorities if liquid enters sewers or public waters.

6.3. Methods and material for containment and cleaning up

Methods for cleaning up : Soak up spills with inert solids, such as clay or diatomaceous earth as soon as possible.
Collect spillage. Store away from other materials.

6.4. Reference to other sections

See Heading 8. Exposure controls and personal protection.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Precautions for safe handling : Ensure adequate ventilation. Avoid breathing mist, spray. Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work. Prolonged or repeated contact with the skin may cause dermatitis.

Hygiene measures : Contaminated work clothing should not be allowed out of the workplace. Wash contaminated clothing before reuse. Wash hands, forearms and face thoroughly after handling.

7.2. Conditions for safe storage, including any incompatibilities

Storage conditions : Do not freeze. The liquid may freeze if stored outside. Store in a well-ventilated place. Keep container closed when not in use. Keep cool. Store in a well-ventilated place. Keep cool.

Incompatible products : Do not add nitrites or other nitrosating agents. Strong bases. Strong acids. Oxidizing agent.

7.3. Specific end use(s)

No additional information available

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

National occupational exposure and biological limit values

Triethanolamine (102-71-6)

Germany - Occupational Exposure Limits (TRGS 900)

Local name	2,2',2''-Nitrilotriethanol
AGW (OEL TWA)	1 mg/m ³ (E)
Peak exposure limitation factor	1(I)
Remark	DFG - Senatskommission zur Prüfung gesundheitsschädlicher Arbeitsstoffe der DFG (MAK-Kommission); Y - Ein Risiko der Fruchtschädigung braucht bei Einhaltung des Arbeitsplatzgrenzwertes und des biologischen Grenzwertes (BGW) nicht befürchtet zu werden

IRMCO ® 980-146

Safety Data Sheet

according to the REACH Regulation (EC) 1907/2006 amended by Regulation (EU) 2020/878

Triethanolamine (102-71-6)	
Regulatory reference	TRGS900
Portugal - Occupational Exposure Limits	
Local name	Trietanolamina
OEL TWA	5 mg/m ³
Regulatory reference	Norma Portuguesa NP 1796:2014
Spain - Occupational Exposure Limits	
Local name	Trietanolamina
VLA-ED (OEL TWA)	5 mg/m ³
Regulatory reference	Límites de Exposición Profesional para Agentes Químicos en España 2024. INSHT
Sweden - Occupational Exposure Limits	
Local name	Trietanolamin
NGV (OEL TWA)	5 mg/m ³
	0.8 ppm
KGV (OEL STEL)	10 mg/m ³
	1.6 ppm
Remark	H (Ämnet kan lätt upptas genom huden. Det föreskrivna gränsvärdet bedöms ge tillräckligt skydd endast under förutsättning att huden är skyddad mot exponering för ämnet ifråga); V (Väglädande korttidsgränsvärde ska användas som ett rekommenderat högsta värde som inte bör överskridas)
Regulatory reference	Hygieniska gränsvärden (AFS 2018:1)
2-aminoethanol, ethanolamine (141-43-5)	
EU - Indicative Occupational Exposure Limit (IOEL)	
Local name	2-Aminoethanol
IOEL TWA	2.5 mg/m ³
	1 ppm
IOEL STEL	7.6 mg/m ³
	3 ppm
Remark	Skin
Regulatory reference	COMMISSION DIRECTIVE 2006/15/EC
France - Occupational Exposure Limits	
Local name	Ethanolamine (2-Aminoéthanol)
VME (OEL TWA)	2.5 mg/m ³
	1 ppm
VLE (OEL C/STEL)	7.6 mg/m ³
	3 ppm
Remark	Valeurs réglementaires contraignantes. Risque de pénétration percutanée
Regulatory reference	Article R4412-149 du Code du travail (réf.: INRS ED 6443, 2022; Outil65; Décret n° 2019-1487; Décret n° 2020-1546; Décret n° 2021-434; Décret n° 2021-1849)
Germany - Occupational Exposure Limits (TRGS 900)	
Local name	2-Amino-ethanol

IRMCO ® 980-146

Safety Data Sheet

according to the REACH Regulation (EC) 1907/2006 amended by Regulation (EU) 2020/878

2-aminoethanol, ethanolamine (141-43-5)	
AGW (OEL TWA)	0.5 mg/m ³
	0.2 ppm
Peak exposure limitation factor	1(I)
Remark	DFG - Senatskommission zur Prüfung gesundheitsschädlicher Arbeitsstoffe der DFG (MAK-Kommission); EU - Europäische Union (Von der EU wurde ein Luftgrenzwert festgelegt: Abweichungen bei Wert und Spitzenbegrenzung sind möglich); Y - Ein Risiko der Fruchtschädigung braucht bei Einhaltung des Arbeitsplatzgrenzwertes und des biologischen Grenzwertes (BGW) nicht befürchtet zu werden; Sh - Hautsensibilisierender Stoff; H - hautresorptiv; 11 - Summe aus Dampf und Aerosolen
Regulatory reference	TRGS900
Italy - Occupational Exposure Limits	
Local name	2-Amminoetanolo
OEL TWA	2.5 mg/m ³
	1 ppm
OEL STEL	7.6 mg/m ³
	3 ppm
Remark	Cute
Regulatory reference	Allegato XXXVIII del D.Lgs. 9 aprile 2008, n. 81 e s.m.i.
Poland - Occupational Exposure Limits	
Local name	2-Aminoetanol
NDS (OEL TWA)	2.5 mg/m ³
NDSCh (OEL STEL)	7.5 mg/m ³
Remark	Skóra (Oznakowanie substancji notacją „skóra” oznacza, że wchłanianie substancji przez skórę może być tak samo istotne jak przy narażeniu drogą oddechową).
Regulatory reference	Dz. U. 2018 poz. 1286 wraz z późn. zm.
Portugal - Indicative Occupational Exposure Limit (IOEL)	
Local name	2-Aminoetanol
IOEL TWA	2.5 mg/m ³
	1 ppm
IOEL STEL	7.6 mg/m ³
	3 ppm
Remark	Cutânea.
Regulatory reference	Decreto-Lei n.º 1/2021 de 6 de janeiro
Portugal - Occupational Exposure Limits	
Local name	Etanolamina (2-Aminoetanol)
OEL TWA	3 ppm
OEL STEL	6 ppm
Regulatory reference	Norma Portuguesa NP 1796:2014
Spain - Occupational Exposure Limits	
Local name	2-Aminoetanol (Etanolamina)
VLA-ED (OEL TWA)	2.5 mg/m ³

IRMCO ® 980-146

Safety Data Sheet

according to the REACH Regulation (EC) 1907/2006 amended by Regulation (EU) 2020/878

2-aminoethanol, ethanolamine (141-43-5)	
	1 ppm
VLA-EC (OEL STEL)	7.5 mg/m³
	3 ppm
Remark	Vía dérmica (Indica que, en las exposiciones a esta sustancia, la aportación por la vía cutánea puede resultar significativa para el contenido corporal total si no se adoptan medidas para prevenir la absorción. En estas situaciones, es aconsejable la utilización del control biológico para poder cuantificar la cantidad global absorbida del contaminante), VLI (Agente químico para el que la U.E. estableció en su día un valor límite indicativo).
Regulatory reference	Límites de Exposición Profesional para Agentes Químicos en España 2024. INSHT
Sweden - Occupational Exposure Limits	
Local name	Etanolamin
NGV (OEL TWA)	2.5 mg/m³
	1 ppm
KGV (OEL STEL)	7.5 mg/m³
	3 ppm
Remark	H (Ämnet kan lätt upptas genom huden. Det föreskrivna gränsvärdet bedöms ge tillräckligt skydd endast under förutsättning att huden är skyddad mot exponering för ämnet ifråga)
Regulatory reference	Hygieniska gränsvärden (AFS 2018:1)
United Kingdom - Occupational Exposure Limits	
Local name	2-Aminoethanol
WEL TWA (OEL TWA)	2.5 mg/m³
	1 ppm
WEL STEL (OEL STEL)	7.6 mg/m³
	3 ppm
Remark	Sk (Can be absorbed through the skin. The assigned substances are those for which there are concerns that dermal absorption will lead to systemic toxicity)
Regulatory reference	EH40/2005 (Fourth edition, 2020). HSE

8.2. Exposure controls

Appropriate engineering controls

Appropriate engineering controls:

Ensure good ventilation of the work station to maintain airborne concentrations below exposure limits identified in Section 8.1.

Personal protection equipment

Personal protective equipment:

Avoid all unnecessary exposure. Safety glasses. Gloves.

Personal protective equipment symbol(s):



Eye and face protection

Eye protection:

Chemical goggles or safety glasses

IRMCO ® 980-146

Safety Data Sheet

according to the REACH Regulation (EC) 1907/2006 amended by Regulation (EU) 2020/878

Skin protection

Skin and body protection:

Wear suitable protective clothing

Hand protection:

Wear protective gloves.

Respiratory protection

Respiratory protection:

In case of inadequate ventilation wear respiratory protection. Wear appropriate mask

Environmental exposure controls

Other information:

Do not eat, drink or smoke during use.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	: Liquid
Color	: amber. Colorless.
Appearance	: clear.
Odor	: Not available
Odor threshold	: Not available
Melting point	: 0 °C
Freezing point	: 0 °C
Boiling point	: 100 °C
Flammability	: Non flammable.
Lower explosion limit	: Not available
Upper explosion limit	: Not available
Flash point	: Not available
Auto-ignition temperature	: Not available
Decomposition temperature	: Not available
pH	: ≈ 8.47 (8 – 9)
Viscosity, kinematic	: ≈ 101 mm ² /s @ 40 °C
Solubility	: Soluble in water. Water: 100 %
Partition coefficient n-octanol/water (Log Kow)	: Not available
Vapor pressure	: Not available
Vapor pressure at 50°C	: Not available
Density	: ≈ 1113 kg/m ³
Relative density	: ≈ 1.11
Relative vapor density at 20°C	: Not available
Particle characteristics	: Not applicable

9.2. Other information

Other safety characteristics

Refractive index : ≈ 1.436

SECTION 10: Stability and reactivity

10.1. Reactivity

No additional information available

10.2. Chemical stability

Stable under normal conditions.

IRMCO® 980-146

Safety Data Sheet

according to the REACH Regulation (EC) 1907/2006 amended by Regulation (EU) 2020/878

10.3. Possibility of hazardous reactions

Do not add nitrites or other nitrosating agents. Addition of nitrites may lead to formation of nitrosamines, a substance known to be carcinogenic in laboratory animals.

10.4. Conditions to avoid

Extremely high or low temperatures.

10.5. Incompatible materials

Strong acids. Strong bases. Do not add nitrites or other nitrosating agents. Oxidizing agent.

10.6. Hazardous decomposition products

fume. Carbon monoxide. Carbon dioxide. Nitrogen oxides.

SECTION 11: Toxicological information

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

Acute toxicity (oral) : Not classified
Acute toxicity (dermal) : Not classified
Acute toxicity (inhalation) : Not classified

Triethanolamine (102-71-6)

LD50 oral rat	6400 mg/kg body weight (Equivalent or similar to OECD 401, Rat, Male / female, Experimental value, Oral, 7 day(s))
LD50 dermal rabbit	> 2000 mg/kg body weight (Equivalent or similar to OECD 402, Rabbit, Experimental value, Dermal, 14 day(s))

2-aminoethanol, ethanolamine (141-43-5)

LD50 oral rat	> 1720 mg/kg (Rat, Oral)
LD50 dermal rabbit	2504 mg/kg (Equivalent or similar to OECD 402, 24 week(s), Rabbit, Male, Experimental value)
LC50 Inhalation - Rat	> 1.3 mg/l air (6 h, Rat, Male / female, Experimental value, (maximum achievable concentration), Inhalation (vapours))
LC50 Inhalation - Rat (Vapours)	> 1487 mg/l Source: ECHA

1,2-benzisothiazol-3(2H)-one, 1,2-benzisothiazolin-3-one (2634-33-5)

LD50 oral rat	490 mg/kg body weight (Equivalent or similar to OECD 401, Rat, Male / female, Experimental value, Oral, 14 day(s))
LD50 dermal rat	> 2000 mg/kg body weight (OECD 402: Acute Dermal Toxicity, 24 h, Rat, Male / female, Experimental value, Dermal, 14 day(s))

Skin corrosion/irritation : Causes skin irritation.
pH: ≈ 8.47 (8 – 9)

Triethanolamine (102-71-6)

pH	11 (25 %)
----	-----------

2-aminoethanol, ethanolamine (141-43-5)

pH	12 (25 %)
----	-----------

1,2-benzisothiazol-3(2H)-one, 1,2-benzisothiazolin-3-one (2634-33-5)

pH	No data available in the literature
----	-------------------------------------

Serious eye damage/irritation : Causes serious eye irritation.
pH: ≈ 8.47 (8 – 9)

Additional information : Based on available data, the classification criteria are not met

IRMCO ® 980-146

Safety Data Sheet

according to the REACH Regulation (EC) 1907/2006 amended by Regulation (EU) 2020/878

Triethanolamine (102-71-6)	
pH	11 (25 %)
2-aminoethanol, ethanolamine (141-43-5)	
pH	12 (25 %)
1,2-benzisothiazol-3(2H)-one, 1,2-benzisothiazolin-3-one (2634-33-5)	
pH	No data available in the literature
Respiratory or skin sensitization	: Not classified
Additional information	: Based on available data, the classification criteria are not met
Germ cell mutagenicity	: Not classified
Additional information	: Based on available data, the classification criteria are not met
Carcinogenicity	: Not classified
Additional information	: Based on available data, the classification criteria are not met
Triethanolamine (102-71-6)	
IARC group	3 - Not classifiable
Triethanolamine (102-71-6)	
NOAEL (chronic,oral,animal/male,2 years)	63 mg/kg body weight Animal: rat, Animal sex: male, Guideline: OECD Guideline 451 (Carcinogenicity Studies)
Reproductive toxicity	: Not classified
Additional information	: Based on available data, the classification criteria are not met
Triethanolamine (102-71-6)	
NOAEL (animal/male, F0/P)	1000 mg/kg body weight Animal: rat, Animal sex: male, Guideline: OECD Guideline 416 (Two-Generation Reproduction Toxicity Study), Guideline: other.: Guideline: EPA OPPTS 870.3800 (Reproduction and Fertility Effects)
NOAEL (animal/female, F0/P)	300 mg/kg body weight Animal: rat, Animal sex: female, Guideline: OECD Guideline 416 (Two-Generation Reproduction Toxicity Study), Guideline: other.: Guideline: EPA OPPTS 870.3800 (Reproduction and Fertility Effects)
2-aminoethanol, ethanolamine (141-43-5)	
NOAEL (animal/male, F0/P)	1000 mg/kg body weight Animal: rat, Animal sex: male, Guideline: OECD Guideline 416 (Two-Generation Reproduction Toxicity Study), Guideline: other.: Guideline: EPA OPPTS 870.3800 (Reproduction and Fertility Effects)
NOAEL (animal/female, F0/P)	300 mg/kg body weight Animal: rat, Animal sex: female, Guideline: OECD Guideline 416 (Two-Generation Reproduction Toxicity Study), Guideline: other.: Guideline: EPA OPPTS 870.3800 (Reproduction and Fertility Effects)
1,2-benzisothiazol-3(2H)-one, 1,2-benzisothiazolin-3-one (2634-33-5)	
NOAEL (animal/female, F0/P)	112 mg/kg body weight Animal: rat, Animal sex: female, Guideline: EPA OPPTS 870.3800 (Reproduction and Fertility Effects)
NOAEL (animal/female, F1)	56.6 mg/kg body weight Animal: rat, Animal sex: female, Guideline: EPA OPPTS 870.3800 (Reproduction and Fertility Effects)
STOT-single exposure	: Not classified
Additional information	: Based on available data, the classification criteria are not met
STOT-repeated exposure	: Not classified
Additional information	: Based on available data, the classification criteria are not met
Triethanolamine (102-71-6)	
NOAEL (oral,rat,90 days)	1000 mg/kg body weight Animal: rat, Guideline: OECD Guideline 408 (Repeated Dose 90-Day Oral Toxicity Study in Rodents)

IRMCO ® 980-146

Safety Data Sheet

according to the REACH Regulation (EC) 1907/2006 amended by Regulation (EU) 2020/878

2-aminoethanol, ethanolamine (141-43-5)	
NOAEL (oral, rat, 90 days)	300 mg/kg body weight Animal: rat, Guideline: other., Guideline: other., Guideline: other.
NOAEC (inhalation, rat, dust/mist/fume, 90 days)	0.01 mg/l air Animal: rat, Guideline: OECD Guideline 412 (Subacute Inhalation Toxicity: 28-Day Study), Guideline: EU Method B.8 (Subacute Inhalation Toxicity: 28-Day Study)

Aspiration hazard : Not classified
Additional information : Based on available data, the classification criteria are not met

IRMCO ® 980-146	
Viscosity, kinematic	≈ 101 mm ² /s @ 40 °C

Triethanolamine (102-71-6)	
Viscosity, kinematic	830.2 mm ² /s (20 °C, Equivalent or similar to OECD 114)

2-aminoethanol, ethanolamine (141-43-5)	
Viscosity, kinematic	23.5 mm ² /s (20 °C, EN ISO 3104: Capillary viscometer)

1,2-benzisothiazol-3(2H)-one, 1,2-benzisothiazolin-3-one (2634-33-5)	
Viscosity, kinematic	Not applicable (solid)

11.2. Information on other hazards

No additional information available

SECTION 12: Ecological information

12.1. Toxicity

Hazardous to the aquatic environment, short-term (acute) : Not classified
Hazardous to the aquatic environment, long-term (chronic) : Not classified

Triethanolamine (102-71-6)	
LC50 - Fish [1]	11800 mg/l (APHA, 96 h, Pimephales promelas, Flow-through system, Fresh water, Experimental value, Nominal concentration)
EC50 - Crustacea [1]	609.88 mg/l (ASTM E1192, 48 h, Ceriodaphnia dubia, Static system, Fresh water, Experimental value, Lethal)
EC50 72h - Algae [1]	512 mg/l Test organisms (species): Desmodesmus subspicatus (previous name: Scenedesmus subspicatus)
EC50 72h - Algae [2]	216 mg/l Test organisms (species): Desmodesmus subspicatus (previous name: Scenedesmus subspicatus)
ErC50 algae	216 mg/l (DIN 38412-9, 72 h, Scenedesmus subspicatus, Static system, Fresh water, Experimental value, Nominal concentration)
NOEC chronic fish	> 1 mg/l Test organisms (species): other:

2-aminoethanol, ethanolamine (141-43-5)	
LC50 - Fish [1]	150 mg/l (96 h, Salmo gairdneri, Pure substance)
EC50 - Crustacea [1]	27 mg/l (OECD 202: Daphnia sp. Acute Immobilisation Test, 48 h, Daphnia magna, Static system, Fresh water, Experimental value, Nominal concentration)
EC50 72h - Algae [1]	2.8 mg/l Test organisms (species): Raphidocelis subcapitata (previous names: Pseudokirchneriella subcapitata, Selenastrum capricornutum)
EC50 72h - Algae [2]	2.1 mg/l Test organisms (species): Raphidocelis subcapitata (previous names: Pseudokirchneriella subcapitata, Selenastrum capricornutum)

IRMCO® 980-146

Safety Data Sheet

according to the REACH Regulation (EC) 1907/2006 amended by Regulation (EU) 2020/878

2-aminoethanol, ethanolamine (141-43-5)	
ErC50 algae	2.8 mg/l (OECD 201: Alga, Growth Inhibition Test, 72 h, Pseudokirchneriella subcapitata, Static system, Fresh water, Experimental value, GLP)
NOEC (chronic)	0.85 mg/l Test organisms (species): Daphnia magna Duration: '21 d'
NOEC chronic fish	1.24 mg/l Test organisms (species): Oryzias latipes Duration: '41 d'
1,2-benzisothiazol-3(2H)-one, 1,2-benzisothiazolin-3-one (2634-33-5)	
LC50 - Fish [1]	2.2 mg/l (OECD 203: Fish, Acute Toxicity Test, 96 h, Oncorhynchus mykiss, Static system, Experimental value, Nominal concentration)
LC50 - Fish [2]	2.15 mg/l Test organisms (species): Oncorhynchus mykiss (previous name: Salmo gairdneri)
EC50 - Crustacea [1]	2.9 mg/l (OECD 202: Daphnia sp. Acute Immobilisation Test, 48 h, Daphnia magna, Static system, Experimental value, Lethal)
EC50 - Crustacea [2]	2.9 mg/l Test organisms (species): Daphnia magna
ErC50 algae	150 µg/l (OECD 201: Alga, Growth Inhibition Test, 72 h, Pseudokirchneriella subcapitata, Experimental value, GLP)

12.2. Persistence and degradability

IRMCO® 980-146	
Persistence and degradability	Not established.
Triethanolamine (102-71-6)	
Persistence and degradability	Biodegradable in the soil, No inhibition of nitrification, Readily biodegradable in water.
Biochemical oxygen demand (BOD)	0.02 g O ₂ /g substance
Chemical oxygen demand (COD)	1.5 g O ₂ /g substance
ThOD	2.04 g O ₂ /g substance
2-aminoethanol, ethanolamine (141-43-5)	
Persistence and degradability	Biodegradable in the soil, Readily biodegradable in water.
Biochemical oxygen demand (BOD)	0.8 g O ₂ /g substance
Chemical oxygen demand (COD)	1.34 g O ₂ /g substance
ThOD	2.49 g O ₂ /g substance
1,2-benzisothiazol-3(2H)-one, 1,2-benzisothiazolin-3-one (2634-33-5)	
Persistence and degradability	Not readily biodegradable in water.

12.3. Bioaccumulative potential

IRMCO® 980-146	
Bioaccumulative potential	Not established.
Triethanolamine (102-71-6)	
BCF - Fish [1]	0.4 – 3.9 l/kg (Equivalent or similar to OECD 305, 6 week(s), Cyprinus carpio, Flow-through system, Fresh water, Experimental value)
Partition coefficient n-octanol/water (Log Pow)	-1.9 (Weight of evidence approach, OECD 107: Partition Coefficient (n-octanol/water): Shake Flask Method, 25 °C)
Bioaccumulative potential	Low potential for bioaccumulation (BCF < 500).

IRMCO ® 980-146

Safety Data Sheet

according to the REACH Regulation (EC) 1907/2006 amended by Regulation (EU) 2020/878

2-aminoethanol, ethanolamine (141-43-5)	
Partition coefficient n-octanol/water (Log Pow)	-1.91
Bioaccumulative potential	Not bioaccumulative.
1,2-benzisothiazol-3(2H)-one, 1,2-benzisothiazolin-3-one (2634-33-5)	
BCF - Fish [1]	6.6 (Equivalent or similar to OECD 305, 56 day(s), Lepomis macrochirus, Experimental value, Fresh weight)
Partition coefficient n-octanol/water (Log Pow)	-0.9 – 0.99 (Experimental value, EU Method A.8: Partition Coefficient, 20 °C)
Bioaccumulative potential	Low potential for bioaccumulation (BCF < 500).

12.4. Mobility in soil

Triethanolamine (102-71-6)	
Organic Carbon Normalized Adsorption Coefficient (Log Koc)	1.06 – 1.27 (log Koc, SRC PCKOCWIN v1.66, Calculated value)
Ecology - soil	Highly mobile in soil.
2-aminoethanol, ethanolamine (141-43-5)	
Surface tension	No data available in the literature
Organic Carbon Normalized Adsorption Coefficient (Log Koc)	1.16 (log Koc, Calculated value)
Ecology - soil	No (test)data on mobility of the component(s) available.
1,2-benzisothiazol-3(2H)-one, 1,2-benzisothiazolin-3-one (2634-33-5)	
Surface tension	72.6 mN/m (20 °C, 0.1 %, EU Method A.5: Surface tension)
Organic Carbon Normalized Adsorption Coefficient (Log Koc)	0.97 (log Koc, OECD 121: Estimation of the Adsorption Coefficient (Koc) on Soil and on Sewage Sludge using High Performance Liquid Chromatography (HPLC), Experimental value, GLP)
Ecology - soil	Highly mobile in soil.

12.5. Results of PBT and vPvB assessment

Component	
Substance(s) not meeting the PBT criteria of REACH regulation, in accordance with Annex XIII	Triethanolamine (102-71-6), 2-aminoethanol, ethanolamine (141-43-5), 1,2-benzisothiazol-3(2H)-one, 1,2-benzisothiazolin-3-one (2634-33-5)(¹)
Substance(s) not meeting the vPvB criteria of REACH regulation, in accordance with Annex XIII	Triethanolamine (102-71-6), 2-aminoethanol, ethanolamine (141-43-5), 1,2-benzisothiazol-3(2H)-one, 1,2-benzisothiazolin-3-one (2634-33-5)(¹)

(¹) Substance(s) in concentration below 0.1 % and displayed on a voluntary basis

12.6. Endocrine disrupting properties

No additional information available

12.7. Other adverse effects

Additional information : Avoid release to the environment.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Product/Packaging disposal recommendations : Do not re-use empty containers without proper cleaning or reconditioning. Dispose in a safe manner in accordance with local/national regulations.

Ecological waste information : Avoid release to the environment.

IRMCO ® 980-146

Safety Data Sheet

according to the REACH Regulation (EC) 1907/2006 amended by Regulation (EU) 2020/878

SECTION 14: Transport information

In accordance with ADR / IMDG / IATA / ADN / RID

14.1. UN number or ID number

Not regulated for transport

14.2. UN proper shipping name

Proper Shipping Name (ADR)	: Not regulated
Proper Shipping Name (IMDG)	: Not regulated
Proper Shipping Name (IATA)	: Not regulated
Proper Shipping Name (ADN)	: Not regulated
Proper Shipping Name (RID)	: Not regulated

14.3. Transport hazard class(es)

ADR
Transport hazard class(es) (ADR) : Not regulated

IMDG
Transport hazard class(es) (IMDG) : Not regulated

IATA
Transport hazard class(es) (IATA) : Not regulated

ADN
Transport hazard class(es) (ADN) : Not regulated

RID
Transport hazard class(es) (RID) : Not regulated

14.4. Packing group

Packing group (ADR)	: Not regulated
Packing group (IMDG)	: Not regulated
Packing group (IATA)	: Not regulated
Packing group (ADN)	: Not regulated
Packing group (RID)	: Not regulated

14.5. Environmental hazards

Other information : No supplementary information available

14.6. Special precautions for user

Overland transport
Not regulated

Transport by sea
Not regulated

Air transport
Not regulated

Inland waterway transport
Not regulated

Rail transport
Not regulated

14.7. Maritime transport in bulk according to IMO instruments

Not applicable

IRMCO ® 980-146

Safety Data Sheet

according to the REACH Regulation (EC) 1907/2006 amended by Regulation (EU) 2020/878

SECTION 15: Regulatory information

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

EU-Regulations

REACH Annex XVII (Restriction List)

Contains no REACH substances with Annex XVII restrictions

REACH Annex XIV (Authorisation List)

Contains no REACH Annex XIV substances.

REACH Candidate List (SVHC)

Contains no REACH candidate substance

PIC Regulation (Prior Informed Consent)

Contains no substance subject to Regulation (EU) No 649/2012 of the European Parliament and of the Council of 4 July 2012 concerning the export and import of hazardous chemicals.

POP Regulation (Persistent Organic Pollutants)

Contains no substance(s) subject to Regulation (EU) No 2019/1021 of the European Parliament and of the Council of 20 June 2019 on persistent organic pollutants

Ozone Regulation (1005/2009)

Contains no substance subject to REGULATION (EU) No 1005/2009 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 16 September 2009 on substances that deplete the ozone layer.

Dual-Use Regulation (428/2009)

Contains substance(s) listed on the COUNCIL REGULATION (EC) No 428/2009 of 5 May 2009 setting up a Community regime for the control of exports, transfer, brokering and transit of dual-use items: Triethanolamine (102-71-6)

Explosives Precursors Regulation (2019/1148)

Contains no substance subject to Regulation (EU) 2019/1148 of the European Parliament and of the Council of 20 June 2019 on the marketing and use of explosives precursors.

Drug Precursors Regulation (273/2004)

Contains no substance(s) listed on the Drug Precursors list (Regulation EC 273/2004 on drug precursors)

National regulations

France

Professional diseases	
Code	Description
RG 49	Skin disorders caused by aliphatic, alicyclic amines or ethanolamines
RG 49 BIS	Respiratory disorders caused by aliphatic amines, ethanolamines or isophoronediamine
RG 65	Eczematiform lesions of allergic mechanism
RG 66	Occupational rhinitis and asthma

Germany

Water hazard class (WGK) : WGK 1, slightly hazardous to water (Classification according to AwSV, Annex 1).
List of sensitizing substances (TRGS 907) : Contains sensitizing substances according TRGS 907.
Hazardous Incident Ordinance (12. BImSchV) : Is not subject to the Hazardous Incident Ordinance (12. BImSchV)

IRMCO ® 980-146

Safety Data Sheet

according to the REACH Regulation (EC) 1907/2006 amended by Regulation (EU) 2020/878

Poland

Polish National Regulations

: Act of 25 February 2011 on chemical substances and their mixtures (J. o L. No. 63, item 322 as amended; consolidated text J. o L. 2019, item 1225).
Act of 14 December 2012 on waste (J. o L. 2013, item 322 as amended; consolidated text J. o L. 2020, item 797).
The announcement of Marshal of the Sejm of the Republic of Poland dated 19 October 2016 concerning the consolidated text announcement of the decree on the management of packaging and packaging waste (J. o L. 2016, item 1863 as amended).
Decree of the Minister of Environment of 14 December 2014 on the catalogue of waste (J. o L. 2014, item 1923).
Act of 19 August 2011 on the Carriage of Dangerous Goods (J. o L. 2011 No. 227, item 1367 as amended; consolidated text J. o L. 2020, item 154).
The ADR Agreement - Annex to the J. o L. of 26 April 2019 Government Statement of 18 February 2019 on the entry into force of the amendments to Annex A and B to the European Agreement concerning the International Carriage of Dangerous Goods by Road (ADR), signed in Geneva on 30 September 1957 (J. o L. 2019, item 769)
Regulation of the Minister of Family, Labour and Social Policy of 12 June 2018 on the highest permissible concentration and intensity of noxious agents for health at work environment (J. o L. item 1286 as amended).
The announcement of Minister of Health dated 9 September 2016 concerning the consolidated text announcement of the decree of the Minister of Health of 30 December 2004 on health and safety at work related to exposure to chemical agents at work (J. o L. of 16 September 2016, item 1488)
Regulation of the Minister of Health of 2 February 2011 on tests and measurements of the noxious agents for health at work environment (J. o L. No. 33, item 166 as amended).
Regulation of the Minister of Environment of 9 December 2003 on particularly hazardous substances to the environment (J. o L. No. 217, item 2141).

15.2. Chemical safety assessment

No chemical safety assessment has been carried out

SECTION 16: Other information

Data sources

: REGULATION (EC) No 1272/2008 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 16 December 2008 on classification, labeling and packaging of substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No 1907/2006.

Other information

: None.

Full text of H- and EUH-phrases:

Acute Tox. 4 (Oral)	Acute toxicity (oral) Category 4
Aquatic Acute 1	Hazardous to the aquatic environment – Acute Hazard Category 1
EUH208	Contains 1,2-benzisothiazol-3(2H)-one(2634-33-5). May produce an allergic reaction.
Eye Dam. 1	Serious eye damage/eye irritation Category 1
H302	Harmful if swallowed.
H314	Causes severe skin burns and eye damage.
H315	Causes skin irritation.
H317	May cause an allergic skin reaction.
H318	Causes serious eye damage.
H319	Causes serious eye irritation.
H335	May cause respiratory irritation.
H400	Very toxic to aquatic life.
Skin Corr. 1A	Skin corrosion/irritation, Category 1, Sub-Category 1A

IRMCO ® 980-146

Safety Data Sheet

according to the REACH Regulation (EC) 1907/2006 amended by Regulation (EU) 2020/878

Full text of H- and EUH-phrases:	
Skin Irrit. 2	Skin corrosion/irritation Category 2
Skin Sens. 1	Skin sensitization, Category 1
STOT SE 3	Specific target organ toxicity – Single exposure, Category 3, Respiratory tract irritation

Classification and procedure used to derive the classification for mixtures according to Regulation (EC) 1272/2008 [CLP]:		
Skin Irrit. 2	H315	Expert judgment
Eye Irrit. 2	H319	Expert judgment

Safety Data Sheet (SDS), EU

We believe all the information contained in this document to be reliable, though the accuracy or completeness is not guaranteed. IRMCO FLUIDS®, IRMCO GEL® and IRMCO EXTREME® products have been used extensively throughout the world in a variety of manufacturing and production applications. It is the responsibility of users of IRMCO products to meet the component surface quality, process compatibility or cleanliness requirements of their customers. Given the complexity and variety of users applications and processes, IRMCO cannot predict all user conditions and results. If surface quality, process compatibility or cleanliness is a user concern, then IRMCO recommends removing/cleaning off the IRMCO product film from the components before final assembly and distribution of such components. User assumes all risk and liabilities associated with the products used.