SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

Product Identifier

Perihalan Produk: **SAF / Cary-Blair / with or without an Empty Vial**
Product Description: **SAF / Cary-Blair / with or without an Empty Vial**
Cat No. : R21615, R21735, R21943, R21962, R31615, R31735, R31943, R31962

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

Recommended Use Laboratory chemicals.
Uses advised against No Information available

Details of the supplier of the safety data sheet

Company
Thermo Scientific Microbiology Sdn Bhd
No.6, Jalan TTC 6, Taman Teknologi Cheng,
Cheng, 75250 Melaka, Malaysia
+606 334 0975 .

Supplier
.
Remel
12076 Santa Fe Drive Lenexa,
KS 66215 United States
Telephone: 1-800-255-6730
Fax:1-800-621-8251

E-mail address mbd-sds@thermofisher.com

Emergency Telephone Number

(603) 5122 8888
CHEMTREC Malaysia **1-800-815-308** (Malay)
CHEMTREC Malaysia (Kuala Lumpur) **+(60)-327884561** (Malay)

SECTION 2: HAZARDS IDENTIFICATION

Classification of the substance or mixture

Skin Corrosion/Irritation	Category 2 (H315)
Serious Eye Damage/Eye Irritation	Category 1 (H318)
Skin Sensitization	Category 1 (H317)
Germ Cell Mutagenicity	Category 2 (H341)
Carcinogenicity	Category 1B (H350)

Label Elements

Signal Word **Danger**

Hazard Statements

H315 - Causes skin irritation
H317 - May cause an allergic skin reaction
H341 - Suspected of causing genetic defects
H350 - May cause cancer
H318 - Causes serious eye damage

Precautionary Statements

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 contact lenses, if present and easy to do. Continue rinsing
P280 - Wear protective gloves/protective clothing/eye protection/face protection
P310 - Immediately call a POISON CENTER or doctor/physician

Other Hazards

This product does not contain any known or suspected endocrine disruptors

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

Component	CAS No	Weight %
Calcium chloride, dihydrate	10035-04-8	0.01
Acetic acid	64-19-7	2
Formaldehyde	50-00-0	4
Sodium acetate trihydrate	6131-90-4	1.5
Agar	9002-18-0	0.14
Soybean lecithin	8002-43-5	0.12
Sodium phosphate dibasic	7558-79-4	0.1
Sodium thioglycolate	367-51-1	0.13
Phenol, 4,4'-(3H-2,1-benzoxathiol-3-ylidene)bis-, S,S-dioxide, monosodium salt	34487-61-1	0.003
Sodium chloride	7647-14-5	0.01
Sodium carbonate	497-19-8	0.01
Water	7732-18-5	191.55

SECTION 4: FIRST AID MEASURES

Description of first aid measures

Eye Contact Rinse thoroughly with plenty of water for at least 15 minutes, lifting lower and upper eyelids. Consult a physician.

Skin Contact Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes.

Ingestion Clean mouth with water and drink afterwards plenty of water.

Inhalation Remove to fresh air.

Self-Protection of the First Aider Ensure that medical personnel are aware of the material(s) involved, take precautions to protect themselves and prevent spread of contamination.

Most important symptoms and effects, both acute and delayed

May cause allergic skin reaction. Causes eye burns. . Symptoms of allergic reaction may include rash, itching, swelling, trouble breathing, tingling of the hands and feet, dizziness, lightheadedness, chest pain, muscle pain or flushing.

Indication of any immediate medical attention and special treatment needed

Notes to Physician Treat symptomatically.

SECTION 5: FIREFIGHTING MEASURES

Extinguishing media

Suitable Extinguishing Media

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

Extinguishing media which must not be used for safety reasons

No information available.

Special hazards arising from the substance or mixture

Thermal decomposition can lead to release of irritating gases and vapors.

Hazardous Combustion Products

None under normal use conditions.

Advice for fire-fighters

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

SECTION 6: ACCIDENTAL RELEASE MEASURES

Personal Precautions, Protective Equipment and Emergency Procedures

Ensure adequate ventilation.

Environmental precautions

See Section 12 for additional Ecological Information. Do not flush into surface water or sanitary sewer system.

Methods and Material for Containment and Cleaning Up

Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust).

Reference to Other Sections

Refer to protective measures listed in Sections 8 and 13.

SECTION 7: HANDLING AND STORAGE

Precautions for Safe Handling

Ensure adequate ventilation.

Conditions for Safe Storage, Including any Incompatibilities

Keep container tightly closed in a dry and well-ventilated place.

Specific End Uses

Use in laboratories.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

Control Parameters

Component	Malaysia	ACGIH TLV	OSHA PEL
Acetic acid		TWA: 10 ppm STEL: 15 ppm	(Vacated) TWA: 10 ppm (Vacated) TWA: 25 mg/m³ TWA: 10 ppm TWA: 25 mg/m³
Formaldehyde		TWA: 0.1 ppm STEL: 0.3 ppm	(Vacated) TWA: 3 ppm (Vacated) STEL: 10 ppm (Vacated) Ceiling: 5 ppm TWA: 0.75 ppm STEL: 2 ppm
Sodium thioglycolate		TWA: 1 ppm Skin	

Component	European Union	The United Kingdom	Germany
Acetic acid	TWA: 25 mg/m³ (15min) TWA: 10 ppm (15min) STEL: 50 mg/m³ (8h) STEL: 20 ppm (8h)	STEL: 37 mg/m³ STEL: 15 ppm TWA: 10 ppm TWA: 25 mg/m³	TWA: 10 ppm (8 Stunden). AGW - exposure factor 2 TWA: 25 mg/m³ (8 Stunden). AGW - exposure factor 2 TWA: 10 ppm (8 Stunden). MAK TWA: 25 mg/m³ (8 Stunden). MAK Höhepunkt: 20 ppm Höhepunkt: 50 mg/m³
Formaldehyde	TWA: 0.37 mg/m³ (8h) TWA: 0.3 ppm (8h) Skin STEL: 0.74 mg/m³ (8h) STEL: 0.6 ppm (8h)	STEL: 2 ppm 15 min STEL: 2.5 mg/m³ 15 min TWA: 2 ppm 8 hr TWA: 2.5 mg/m³ 8 hr Carc.	TWA: 0.3 ppm (8 Stunden). AGW - exposure factor 2 TWA: 0.37 mg/m³ (8 Stunden). AGW - exposure factor 2 TWA: 0.3 ppm (8 Stunden). MAK no irritation should occur during mixed exposure TWA: 0.37 mg/m³ (8 Stunden). MAK no irritation should occur during mixed exposure Höhepunkt: 0.6 ppm Höhepunkt: 0.74 mg/m³

Exposure Controls

Engineering Measures

Ensure that eyewash stations and safety showers are close to the workstation location.
Wherever possible, engineering control measures such as the isolation or enclosure of the process, the introduction of process or equipment changes to minimise release or contact, and the use of properly designed ventilation systems, should be adopted to control hazardous materials at source

Personal protective equipment

Eye Protection	Goggles
Hand Protection	Protective gloves
Skin and body protection	Long sleeved clothing

Inspect gloves before use.
Please observe the instructions regarding permeability and breakthrough time which are provided by the supplier of the gloves. (Refer to manufacturer/supplier for information)
Ensure gloves are suitable for the task: Chemical compatability, Dexterity, Operational conditions, User susceptibility, e.g. sensitisation effects, also take into consideration the specific local conditions under which the product is used, such as the danger of cuts, abrasion.
Remove gloves with care avoiding skin contamination.

Respiratory Protection	When workers are facing concentrations above the exposure limit they must use appropriate certified respirators To protect the wearer, respiratory protective equipment must be the correct fit and be used and maintained properly When RPE is used a face piece Fit Test should be conducted
Hygiene Measures	Handle in accordance with good industrial hygiene and safety practice
Environmental exposure controls	Prevent product from entering drains Do not allow material to contaminate ground water system

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Appearance		
Physical State	Liquid	
Odor	No information available	
Odor Threshold	No data available	
pH	No information available	
Melting Point/Range	- °C / - °F	
Softening Point	No data available	
Boiling Point/Range	No information available	
Flash Point	No information available	**Method -** No information available
Evaporation Rate	No data available	
Flammability (solid,gas)	Not applicable	Liquid
Explosion Limits	No data available	
Vapor Pressure	No data available	
Vapor Density	No data available	(Air = 1.0)
Specific Gravity / Density	No data available	
Bulk Density	Not applicable	Liquid
Water Solubility	No information available	
Solubility in other solvents	No information available	

Partition Coefficient (n-octanol/water)

Component	**log Pow**
Calcium chloride, dihydrate	0.05
Acetic acid	-0.2
Formaldehyde	-0.35
Sodium thioglycolate	-3.78

Autoignition Temperature	No data available
Decomposition Temperature	No data available
Viscosity	No data available
Explosive Properties	No information available
Oxidizing Properties	No information available
VOC Content(%)	6

SECTION 10: STABILITY AND REACTIVITY

Reactivity

None known, based on information available.

Chemical Stability

Stable under normal conditions.

Possibility of Hazardous Reactions

Hazardous Polymerization No information available.
Hazardous Reactions No information available.

Conditions to Avoid

None known.

Incompatible Materials

None known.

Hazardous Decomposition Products

None under normal use conditions.

SECTION 11: TOXICOLOGICAL INFORMATION

Information on Toxicological Effects

Acute Toxicity

Toxicology data for the components

Component	LD50 Oral	LD50 Dermal	LC50 Inhalation
Acetic acid	3310 mg/kg (Rat)	-	> 40 mg/L (Rat) 4 h
Formaldehyde	500 mg/kg (Rat)	LD50 = 270 mg/kg (Rabbit)	0.578 mg/L (Rat) 4 h
Agar	LD50 = 11 g/kg (Rat)		
Soybean lecithin	>8 g/kg (Rat)		
Sodium phosphate dibasic	LD50 = 17 g/kg (Rat)		
Sodium thioglycolate	504 mg/kg (Mouse) 50-200 mg/kg (Rat)	293 mg/kg (Mouse) 1000-2000 mg/kg (female Rat)	
Sodium chloride	LD50 = 3 g/kg (Rat)	LD50 > 10000 mg/kg (Rabbit)	LC50 > 42 mg/L (Rat) 1 h
Sodium carbonate	2800 mg/kg (Rat)	> 2000 mg/kg (rabbit)	2.3 mg/l 2h (Rat)
Water	-	-	-

Chronic Toxicity

Carcinogenicity This product contains one or more substances which are classified by IARC as carcinogenic to humans (Group I), probably carcinogenic to humans (Group 2A) or possibly carcinogenic to humans (Group 2B) The table below indicates whether each agency has listed any ingredient as a carcinogen

Component	IARC	UK
Formaldehyde	Group 1	Cat 3

Legend:
X - Listed '-' - Not Listed XU - Indicates a substance exempt from reporting under the Inventory Update Rule, i.e. Partial Updating of the TSCA Inventory Data Base Production and Site Reports (40 CFR 710(B)

Sensitization No information available
Mutagenic Effects No information available
Reproductive Effects No information available
Developmental Effects No information available
Target Organs No information available.

Symptoms Symptoms of allergic reaction may include rash, itching, swelling, trouble breathing, tingling of the hands and feet, dizziness, lightheadedness, chest pain, muscle pain or flushing.

SECTION 12: ECOLOGICAL INFORMATION

Ecotoxicity effects Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment. The product contains following substances which are hazardous for the environment. Contains a substance which is:. Toxic to aquatic organisms.

Component	Freshwater Fish	Water Flea	Freshwater Algae	Microtox
Calcium chloride, dihydrate	Lepomis macrochirus: LC50: 10650 mg/L/96h	EC50: 3005 mg/L/48h	-	-
Acetic acid	Pimephales promelas: LC50 = 88 mg/L/96h Lepomis macrochirus: LC50 = 75 mg/L/96h	EC50 = 95 mg/L/24h	-	Photobacterium phosphoreum: EC50 = 8.8 mg/L/15 min Photobacterium phosphoreum: EC50 = 8.8 mg/L/25 min Photobacterium phosphoreum: EC50 = 8.8 mg/L/5 min
Formaldehyde	Leuciscus idus: LC50 = 15 mg/L 96h	EC50 = 20 mg/L 96h EC50 = 2 mg/L 48h		
Sodium thioglycolate		EC50: 38 mg/L/48h		
Sodium chloride	Pimephals prome: LC50: 7650 mg/L/96h	EC50: 1000 mg/L/48h		
Sodium carbonate	Lepomis macrochirus: LC50: 300 mg/L/96h Gambusia affinis: LC50: 740 mg/L/96h	EC50: = 265 mg/L, 48h (Daphnia magna)		-

Persistence and degradability No information available
Degradation in sewage treatment plant Contains substances known to be hazardous to the environment or not degradable in waste water treatment plants.

Bioaccumulative potential No information available

Component	log Pow	Bioconcentration factor (BCF)
Calcium chloride, dihydrate	0.05	No data available
Acetic acid	-0.2	No data available
Formaldehyde	-0.35	No data available

Sodium thioglycolate	-3.78	No data available

Mobility in soil No information available.

Other adverse effects No information available

SECTION 13: DISPOSAL CONSIDERATIONS

Waste treatment methods

Waste from Residues/Unused Products Waste is classified as hazardous Dispose of in accordance with the European Directives on waste and hazardous waste Dispose of in accordance with local regulations

Contaminated Packaging Dispose of this container to hazardous or special waste collection point.

Other Information Do not flush to sewer Waste codes should be assigned by the user based on the application for which the product was used Do not empty into drains

SECTION 14: TRANSPORT INFORMATION

IMDG/IMO Not regulated

Road and Rail Transport Not regulated

IATA Not regulated

Special Precautions for User No special precautions required

SECTION 15: REGULATORY INFORMATION

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

International Inventories X = listed

Component	EINECS	TSCA	DSL	PICCS	ENCS	ISHL	IECSC	AICS	KECL
Calcium chloride, dihydrate	-	-	-	X	X	X	X	X	-
Acetic acid	-	X	X	X	X	X	X	X	X
Formaldehyde	-	X	X	X	X	X	X	X	KE-17074
Sodium acetate trihydrate	-	-	-	X	X	X	X	X	-
Agar	-	X	X	X	-		X	X	KE-00275
Soybean lecithin	-	X	X	X	-		X	X	KE-21956
Sodium phosphate dibasic	-	X	X	X	X	X	X	X	KE-12344
Sodium thioglycolate	206-696-4	X	X	X	X	X	X	X	KE-33787
Phenol, 4,4'-(3H-2,1-benzoxathiol-3-ylidene)bis-, S,S-dioxide, monosodium salt	252-057-8	X	X	X	-		X	-	KE-02749
Sodium chloride	-	X	X	X	X	X	X	X	KE-31387
Sodium carbonate	-	X	X	X	X	X	X	X	KE-31380
Water	231-791-2	X	X	X	X		X	X	KE-35400

Component	Seveso III Directive	Seveso III Directive	Rotterdam Convention	Basel Convention

	(2012/18/EC) - Qualifying Quantities for Major Accident Notification	(2012/18/EC) - Qualifying Quantities for Safety Report Requirements	(PIC)	(Hazardous Waste)
Acetic acid				Annex I - Y34
Formaldehyde	5 tonne	50 tonne		

National Regulations

Persistent Organic Pollutant This product does not contain any known or suspected substance
Ozone Depletion Potential This product does not contain any known or suspected substance

SECTION 16: OTHER INFORMATION

Legend

CAS - Chemical Abstracts Service

EINECS/ELINCS - European Inventory of Existing Commercial Chemical Substances/EU List of Notified Chemical Substances
PICCS - Philippines Inventory of Chemicals and Chemical Substances
IECSC - Chinese Inventory of Existing Chemical Substances
KECL - Korean Existing and Evaluated Chemical Substances

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory
DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List
ENCS - Japanese Existing and New Chemical Substances
AICS - Australian Inventory of Chemical Substances
NZIoC - New Zealand Inventory of Chemicals

WEL - Workplace Exposure Limit
ACGIH - American Conference of Governmental Industrial Hygienists
RPE - Respiratory Protective Equipment
LC50 - Lethal Concentration 50%
POW - Partition coefficient Octanol:Water

TWA - Time Weighted Average
IARC - International Agency for Research on Cancer
LD50 - Lethal Dose 50%
EC50 - Effective Concentration 50%

ADR - European Agreement Concerning the International Carriage of Dangerous Goods by Road
IMO/IMDG - International Maritime Organization/International Maritime Dangerous Goods Code
OECD - Organisation for Economic Co-operation and Development
BCF - Bioconcentration factor

ICAO/IATA - International Civil Aviation Organization/International Air Transport Association
MARPOL - International Convention for the Prevention of Pollution from Ships
ATE - Acute Toxicity Estimate
VOC - (Volatile Organic Compound)

Key literature references and sources for data
https://echa.europa.eu/information-on-chemicals
Suppliers safety data sheet, Chemadvisor - LOLI, Merck index, RTECS

Revision Date 29-Mar-2023
Revision Summary Not applicable.

In accordance with local and national regulations: Occupational Safety and Health (Classification, Labelling and Safety Data Sheet of Hazardous Chemicals) Regulations 2013

Disclaimer

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. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text

End of Safety Data Sheet