



SAFETY DATA SHEET

This safety data sheet was created pursuant to the requirements of:
GB/T 16483-2008, GB/T 17519-2013

Product Name Flex 100
Revision date 15-Nov-2023
Issuing Date 28-Jan-2014

SDS Number 100000000102793
Version 3

1. Identification

Product identifier

Product Name Flex 100

Other means of identification

SDS Number 100000000102793
Catalogue Number 8101, 8115, 8115SS, 8155
Product Code(s) 8101, 8105, 8115, 8115SS, 8155
UN/ID no UN1987
Pure substance/mixture Mixture

Details of the supplier of the safety data sheet

Manufacturer

Richard-Allan Scientific
4481 Campus Drive
Kalamazoo, MI 49008
1-800-522-7270

E-mail address No information available

Emergency telephone number

Emergency telephone number Chemtrec China: 4001-204937

Emergency telephone number China

Recommended use of the chemical and restrictions on use

Recommended use In vitro diagnostics
Restrictions on use No information available

2. Hazard(s) identification

Emergency Overview

Toxic if swallowed
May be fatal if absorbed through skin
Irritating to eyes
HIGHLY FLAMMABLE: Will be easily ignited by heat, sparks or flames

Appearance clear, colorless **Physical state** Liquid **Odor** Alcohol-like

Classification of the substance or mixture

Flammable liquids	Category 2
Acute toxicity - Oral	Category 3
Acute toxicity - Dermal	Category 3
Acute toxicity - Inhalation (Vapors)	Category 5
Acute toxicity - Inhalation (Dusts/Mists)	Category 4
Serious eye damage/eye irritation	Category 2A
Specific target organ toxicity - Single exposure	Category 1
Hazardous to the Aquatic Environment - Acute Hazard	Category 3
Hazardous to the Aquatic Environment - Chronic Hazard	Category 3

Label elements



Signal word

Danger

Hazard statements

- Highly flammable liquid and vapor
- Toxic if swallowed
- Toxic in contact with skin
- Harmful if inhaled
- Causes serious eye irritation
- Causes damage to organs
- Harmful to aquatic life with long lasting effects

Precautionary statements

Prevention

- Wash face, hands and any exposed skin thoroughly after handling
- Do not eat, drink or smoke when using this product
- Wear protective gloves/protective clothing/eye protection/face protection
- Use only outdoors or in a well-ventilated area
- Do not breathe dust/fume/gas/mist/vapors/spray
- Avoid release to the environment
- Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking
- Keep container tightly closed
- Use explosion-proof electrical/ ventilating / lighting/ .? / equipment
- Ground/bond container and receiving equipment
- Use only non-sparking tools
- Take precautionary measures against static discharge

Response

- Specific treatment (see .? on this label)
- IF exposed or concerned: Call a POISON CENTER or doctor
- IF INHALED: Remove person to fresh air and keep comfortable for breathing
- Call a POISON CENTER or doctor if you feel unwell
- Call a POISON CENTER or doctor if you feel unwell
- IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/ shower
- IF IN EYES: 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

IF SWALLOWED: Immediately call a POISON CENTER or doctor
Rinse mouth
In case of fire: Use dry sand, dry chemical or alcohol-resistant foam to extinguish

Storage

Store locked up
Store in a well-ventilated place. Keep cool

Disposal

Dispose of contents/container to an approved waste disposal plant

Physical and chemical hazards

Highly flammable liquid and vapor. Will be easily ignited by heat, sparks or flames. Vapors may form explosive mixtures with air. Vapors can travel considerable distances to a source of ignition where they can ignite, flash back, or explode. Runoff to sewer may create fire or explosion hazard. Containers may explode when heated.

Health hazards

Immediate Health Effects: Can cause poisoning if inhaled, swallowed or absorbed by the skin. Symptoms of poisoning may appear even after several hours. Severe, even fatal poisoning if absorbed by the skin, inhaled or swallowed. Symptoms of poisoning may appear even after several hours. Medical examination necessary even merely on suspicion of intoxication. Harmful. Effects of exposure (inhalation, ingestion or skin contact) to substance may be delayed. If symptoms persist, call a physician. Causes severe irritation (tears, blurred vision and redness). Irritating, but will not permanently injure eye tissue.

Chronic effects: Target organ(s).

Environmental hazards

This material is a water pollutant. Keep out of drains, sewers, ditches and waterways. Minimize use of water to prevent environmental contamination

Other hazards which do not result in classification

Not applicable

3. Composition/information on ingredients

Substance

Not applicable.

Mixture

Chemical name	Weight-%	CAS No.
Isopropyl alcohol	57 - 63	67-63-0
Methyl alcohol	37 - 43	67-56-1

4. First-aid measures

Description of necessary first aid measures

General advice

Immediate medical attention is required. Show this safety data sheet to the doctor in attendance.

Inhalation

IF exposed or concerned: Get medical advice/attention. Remove to fresh air. If symptoms persist, call a physician. If breathing has stopped, give artificial respiration. Get medical attention immediately.

Eye contact

Get immediate medical advice/attention. Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Keep eye wide open while rinsing. Do not rub affected area.

Skin contact	Get immediate medical advice/attention. Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes.
Ingestion	Get immediate medical advice/attention. Do NOT induce vomiting. Clean mouth with water and drink afterwards plenty of water. Never give anything by mouth to an unconscious person.
<u>Most important symptoms/effects, acute and delayed</u>	Burning sensation. Coughing and/ or wheezing. Difficulty in breathing.
<u>For emergency responders</u>	Remove all sources of ignition. Avoid direct contact with skin. Use barrier to give mouth-to-mouth resuscitation. Avoid contact with skin, eyes or clothing. Ensure that medical personnel are aware of the material(s) involved, take precautions to protect themselves and prevent spread of contamination. Avoid breathing vapors or mists. Use personal protective equipment as required. See section 8 for more information.
<u>Note to physicians</u>	Treat symptomatically.

5. Fire-fighting measures

Extinguishing media

Suitable Extinguishing Media	Dry chemical. Carbon dioxide (CO ₂). Water spray. Alcohol resistant foam.
Unsuitable extinguishing media	CAUTION: Use of water spray when fighting fire may be inefficient.
<u>Specific hazards arising from the chemical</u>	Risk of ignition. Keep product and empty container away from heat and sources of ignition. In the event of fire, cool tanks with water spray. Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.
<u>Special protective actions for fire-fighters</u>	Firefighters should wear self-contained breathing apparatus and full firefighting turnout gear. Use personal protection equipment.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

Personal precautions	See section 8 for more information. Keep people away from and upwind of spill/leak. ELIMINATE all ignition sources (no smoking, flares, sparks or flames in immediate area). Pay attention to flashback. Take precautionary measures against static discharges. All equipment used when handling the product must be grounded. Do not touch or walk through spilled material. Evacuate personnel to safe areas. Avoid contact with skin, eyes or clothing. Ensure adequate ventilation. Avoid breathing vapors or mists. Use personal protective equipment as required.
Other information	Ventilate the area. Refer to protective measures listed in Sections 7 and 8.
For emergency responders	Use personal protection recommended in Section 8.
<u>Environmental precautions</u>	Refer to protective measures listed in Sections 7 and 8. Prevent product from entering drains. Prevent further leakage or spillage if safe to do so.
<u>Methods and material for containment and cleaning up</u>	Stop leak if you can do it without risk. Do not touch or walk through spilled material. A vapor suppressing foam may be used to reduce vapors. Dike far ahead of spill to collect runoff water. Keep out of drains, sewers, ditches and waterways. Absorb with earth, sand or other non-combustible material and transfer to containers for later disposal. Take precautionary

measures against static discharges. Dam up. Soak up with inert absorbent material. Pick up and transfer to properly labeled containers.

Precautions to prevent secondary hazards Clean contaminated objects and areas thoroughly observing environmental regulations.

7. Handling and storage

Precautions for safe handling

Use personal protection equipment. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Use grounding and bonding connection when transferring this material to prevent static discharge, fire or explosion. Use with local exhaust ventilation. Use spark-proof tools and explosion-proof equipment. Keep in an area equipped with sprinklers. Use according to package label instructions. Take off contaminated clothing and wash before reuse. Avoid contact with skin, eyes or clothing. Handle in accordance with good industrial hygiene and safety practice. Avoid breathing vapors or mists. In case of insufficient ventilation, wear suitable respiratory equipment. Do not eat, drink or smoke when using this product. Contaminated work clothing should not be allowed out of the workplace. Remove and wash contaminated clothing and gloves, including the inside, before re-use. Regular cleaning of equipment, work area and clothing is recommended. Wash hands before breaks and immediately after handling the product. Avoid contact with skin, eyes or clothing. Wear suitable gloves and eye/face protection. Do not eat, drink or smoke when using this product. See Section 8 for information on appropriate personal protective equipment.

Conditions for safe storage, including any incompatibilities

Keep away from heat, sparks, flame and other sources of ignition (i.e., pilot lights, electric motors and static electricity). Keep in properly labeled containers. Do not store near combustible materials. Keep in an area equipped with sprinklers. Store in accordance with the particular national regulations. Store in accordance with local regulations. Store locked up. Keep containers tightly closed in a dry, cool and well-ventilated place. Keep out of the reach of children.

Incompatible materials

None known based on information supplied.

8. Exposure controls/personal protection

Occupational exposure limits

Chemical name	China	ACGIH TLV
Isopropyl alcohol - 67-63-0	TWA: 350 mg/m ³ STEL: 700 mg/m ³	TWA: 200 ppm STEL: 400 ppm
Methyl alcohol - 67-56-1	TWA: 25 mg/m ³ STEL: 50 mg/m ³ Skin*	TWA: 200 ppm STEL: 250 ppm Sk*

Note See section 16 for terms and abbreviations

Biological occupational exposure limits

No data available

Chemical name	Biological standards	Monitoring and observation processes	ACGIH
Isopropyl alcohol - 67-63-0			40 mg/L - urine (Acetone) - end of shift at end of workweek
Methyl alcohol - 67-56-1			15 mg/L - urine (Methanol) - end

			of shift
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Monitoring and observation processes

No applicable information was found.

Engineering controls

Showers
 Eyewash stations
 Ventilation systems.

Individual protection measures, such as personal protective equipment

Eye/face protection

Tight sealing safety goggles.

Skin and body protection

Antistatic boots. Long sleeved clothing. Chemical resistant apron. Wear suitable protective clothing.

Hand protection

Impervious gloves. Wear suitable gloves.

Respiratory protection

No protective equipment is needed under normal use conditions. If exposure limits are exceeded or irritation is experienced, ventilation and evacuation may be required.

General hygiene considerations

Contaminated work clothing should not be allowed out of the workplace. Remove and wash contaminated clothing and gloves, including the inside, before re-use. Regular cleaning of equipment, work area and clothing is recommended. Wash hands before breaks and immediately after handling the product. Avoid contact with skin, eyes or clothing. Wear suitable gloves and eye/face protection. Do not eat, drink or smoke when using this product.

9. Physical and chemical properties

Information on basic physical and chemical properties

Appearance	clear colorless
Color	No information available
Physical state	Liquid
Odor	Alcohol-like
Odor threshold	No information available

<u>Property</u>	<u>Values</u>	<u>Remarks • Method</u>
pH	5	
Melting point / freezing point	No data available	None known
Boiling point / boiling range	71.7 °C	
Flash point	16.61 °C	
Evaporation rate	No data available	None known
Flammability (solid, gas)	No data available	None known
Flammability Limit in Air		None known
Upper flammability or explosive limits	36.0 vol %	
Lower flammability or explosive limits	2.0 vol %	
Vapor pressure	55 mmHg	
Vapor density	1.5	
Relative density	0.79	
Water solubility	No data available	None known
Solubility(ies)	Soluble in water	
Partition coefficient	No data available	None known
Autoignition temperature	399	None known
Hyphen	No data available	None known
Kinematic viscosity	No data available	None known
Dynamic viscosity	No data available	None known

Additional information

Explosive properties No information available
Oxidizing properties No information available

10. Stability and reactivity

Stability Stable under normal conditions.

Possibility of hazardous reactions None under normal processing.

Sensitivity to mechanical impact None.

Sensitivity to static discharge Yes.

Hazardous polymerization Hazardous polymerization does not occur.

Conditions to avoid Heat, flames and sparks. Excessive heat.

Incompatible materials None known based on information supplied.

Hazardous decomposition products Carbon monoxide (CO). Carbon dioxide (CO₂). Formaldehyde. Peroxides.

11. Toxicological information

Acute toxicity

Numerical measures of toxicity

The following values are calculated based on chapter 3.1 of the GHS document

ATEmix (oral) 231.40 mg/kg
ATEmix (dermal) 675.10 mg/kg
ATEmix (inhalation-dust/mist) 1.240 mg/l
ATEmix (inhalation-vapor) 41.6976 mg/l

Unknown acute toxicity

0 % of the mixture consists of ingredient(s) of unknown acute oral toxicity
0 % of the mixture consists of ingredient(s) of unknown acute dermal toxicity
100 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (gas)
60 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (vapor)
0 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (dust/mist)

Component Information

Chemical name	Oral LD50	Dermal LD50	Inhalation LC50
Isopropyl alcohol	= 1870 mg/kg (Rat)	= 4059 mg/kg (Rabbit)	> 10000 ppm (Rat) 6 h
Methyl alcohol	= 6200 mg/kg (Rat)	= 15840 mg/kg (Rabbit)	= 22500 ppm (Rat) 8 h

Skin corrosion/irritation May cause skin irritation.

Serious eye damage/eye irritation Classification based on data available for ingredients. Causes serious eye irritation.

Respiratory or skin sensitization No information available.

Germ cell mutagenicity No information available.

Carcinogenicity

The table below indicates whether each agency has listed any ingredient as a carcinogen.

Chemical name	China	IARC
Isopropyl alcohol	-	Group 3

Legend

IARC (International Agency for Research on Cancer)

Group 3 - Not Classifiable as to Carcinogenicity in Humans

Reproductive toxicity No information available.

Specific target organ toxicity (single exposure) Based on the classification criteria of the Globally Harmonized System as adopted in the country or region with which this safety data sheet complies, this product has been determined to cause systemic target organ toxicity from acute exposure. (STOT SE), Causes damage to organs if swallowed, Causes damage to organs in contact with skin.

Specific target organ toxicity (repeated exposure) No information available.

Target organ effects Respiratory system. Eyes. Skin. Central nervous system. Gastrointestinal tract (GI).

Aspiration hazard No information available.

12. Ecological information

Ecotoxicity Harmful to aquatic life with long lasting effects.

Unknown aquatic toxicity 0 % of the mixture consists of component(s) of unknown hazards to the aquatic environment

Chemical name	Algae/aquatic plants	Fish	Crustacea
Isopropyl alcohol	EC50: >1000mg/L (72h, <i>Desmodesmus subspicatus</i>) EC50: >1000mg/L (96h, <i>Desmodesmus subspicatus</i>)	LC50: =11130mg/L (96h, <i>Pimephales promelas</i>) LC50: =9640mg/L (96h, <i>Pimephales promelas</i>) LC50: >1400000µg/L (96h, <i>Lepomis macrochirus</i>)	EC50: =13299mg/L (48h, <i>Daphnia magna</i>)
Methyl alcohol	-	LC50: 13500 - 17600mg/L (96h, <i>Lepomis macrochirus</i>) LC50: 18 - 20mL/L (96h, <i>Oncorhynchus mykiss</i>) LC50: 19500 - 20700mg/L (96h, <i>Oncorhynchus mykiss</i>) LC50: =28200mg/L (96h, <i>Pimephales promelas</i>) LC50: >100mg/L (96h, <i>Pimephales promelas</i>)	-

Persistence and degradability No information available.

Bioaccumulative potential There is no data for this product.

Component Information

Chemical name	Partition coefficient
Isopropyl alcohol	0.05
Methyl alcohol	-0.77

Mobility in soil Disperses rapidly in air.

Will likely be mobile in the environment due to its volatility.

Other adverse effects No information available.

13. Disposal considerations

Waste chemicals Should not be released into the environment. Dispose of in accordance with local regulations. Dispose of waste in accordance with environmental legislation.

Contaminated packaging Empty containers pose a potential fire and explosion hazard. Do not cut, puncture or weld containers.

14. Transport information

IMDG

UN number or ID number	UN1987
UN proper shipping name	Alcohols, n.o.s.
Description	Alcohols, n.o.s., (Isopropanol, Methanol)
Transport hazard class(es)	3
Packing group	II
Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code	No information available

IATA

UN number or ID number	UN1987
UN proper shipping name	Alcohols, n.o.s.
Description	Alcohols, n.o.s., (Isopropanol, Methanol)
Transport hazard class(es)	3
Packing group	II

China Not regulated

Special precautions for user

Please refer to the applicable dangerous goods regulations for additional information

15. Regulatory information

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

National regulations

Law of the People's Republic of China on Prevention and Control of Occupational Diseases

Catalog of occupational hazard factors:	Not applicable.
Catalog of occupational diseases:	Not applicable.

Regulations on the Control over Safety of Hazardous Chemicals

<u>Inventory of hazardous chemicals</u>	Verify that license requirements are met.
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Flammable liquid - Category 2

GB 18218-2009 Identification of major hazard installations for dangerous chemicals

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Category
Flammable liquids

Threshold quantity (T)
1000

List of hazardous chemicals under priority management

Not applicable

Regulations on Labor Protection in Workplaces Where Toxic Substances Are Used

Inventory of highly toxic goods

Not applicable

Regulations for Environmental Management on the First Import of Chemicals and the Import and Export of Toxic Chemicals

List of toxic chemicals severely restricted for import and export in China

Not applicable

Measures for the Environmental Management of New Chemical Substances

IECSC - China Inventory of Existing Chemical Substances Contact supplier for inventory compliance status.

International Regulations

The Montreal Protocol on Substances that Deplete the Ozone Layer Not applicable

The Stockholm Convention on Persistent Organic Pollutants Not applicable

The Rotterdam Convention Not applicable

16. Other information

Issuing Date 28-Jan-2014

Revision date 15-Nov-2023

Revision Note The symbol (*) in the margin of this SDS indicates that this line has been revised.

Abbreviations and acronyms

Legend Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

TWA	TWA (time-weighted average)	STEL	STEL (Short Term Exposure Limit)
Ceiling	Maximum limit value	*	Skin designation
C	Carcinogen		

Key literature references and sources for data used to compile the SDS

Agency for Toxic Substances and Disease Registry (ATSDR)
U.S. Environmental Protection Agency ChemView Database
European Food Safety Authority (EFSA)
EPA (Environmental Protection Agency)
Acute Exposure Guideline Level(s) (AELG(s))
U.S. Environmental Protection Agency Federal Insecticide, Fungicide, and Rodenticide Act
U.S. Environmental Protection Agency High Production Volume Chemicals
Food Research Journal
Hazardous Substance Database
International Uniform Chemical Information Database (IUCLID)
Japan GHS Classification
Australia National Industrial Chemicals Notification and Assessment Scheme (NICNAS)
NIOSH (National Institute for Occupational Safety and Health)
National Library of Medicine's ChemID Plus (NLM CIP)
National Library of Medicine's PubMed database (NLM PUBMED)
National Toxicology Program (NTP)
New Zealand's Chemical Classification and Information Database (CCID)
Organization for Economic Co-operation and Development Environment, Health, and Safety Publications
Organization for Economic Co-operation and Development High Production Volume Chemicals Program
Organization for Economic Co-operation and Development Screening Information Data Set

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RTECS (Registry of Toxic Effects of Chemical Substances)
World Health Organization

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