Safety Data Sheet
acc. to OSHA HCS

Printing date 05/27/2025 Reviewed on 05/27/2025

* 1 Identification

Product identifier

Trade name: Cleaning spray type 1003
Application of the substance / the mixture
Special cleaning agent for highly insulating parts such as plug connections and electronic components

Details of the supplier of the safety data sheet
Manufacturer/Supplier:
Kistler Instrument Corp.
75 John Glenn Drive, NY 14228-2171 Amherst, United States

Information department:
+1 716 691 5100
Monday to Friday 7 am – 5 pm (EST)
Emergency telephone number: Emergency CONTACT (24-Hour-Number):GBK GmbH +49 (0)6132-84463

* 2 Hazard(s) identification

Classification of the substance or mixture


GHS02 Flame

Aerosols 1	H222 Extremely flammable aerosol.


GHS08 Health hazard

Aspiration Hazard 1	H304 May be fatal if swallowed and enters airways.


GHS09 Environment

Aquatic Chronic 2	H411 Toxic to aquatic life with long lasting effects.


GHS07

Skin Irritation 2	H315 Causes skin irritation.
Specific Target Organ Toxicity - Single Exposure 3	H336 May cause drowsiness or dizziness.
Aquatic Acute 2	H401 Toxic to aquatic life.

Label elements
GHS label elements The product is classified and labeled according to the Globally Harmonized System (GHS).
Hazard pictograms GHS02, GHS07, GHS08, GHS09
Signal word Danger

Hazard-determining components of labeling:
pentane
cyclohexane

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Hazard statements
Extremely flammable aerosol.
Causes skin irritation.
May cause drowsiness or dizziness.
May be fatal if swallowed and enters airways.
Toxic to aquatic life with long lasting effects.
Precautionary statements
Keep away from heat/sparks/open flames/hot surfaces. - No smoking.
Do not spray on an open flame or other ignition source.
Pressurized container: Do not pierce or burn, even after use.
Avoid breathing dust/fume/gas/mist/vapors/spray
Wash thoroughly after handling.
Use only outdoors or in a well-ventilated area.
Avoid release to the environment.
Wear protective gloves.
If swallowed: Immediately call a poison center/doctor.
Specific treatment (see on this label).
Do NOT induce vomiting.
If on skin: Wash with plenty of water.
IF INHALED: Remove person to fresh air and keep comfortable for breathing.
Call a poison center/doctor if you feel unwell.
Take off contaminated clothing and wash it before reuse.
If skin irritation occurs: Get medical advice/attention.
Collect spillage.
Store in a well-ventilated place. Keep container tightly closed.
Store locked up.
Protect from sunlight. Do not expose to temperatures exceeding 50°C/122°F.
Classification system:
NFPA ratings (scale 0 - 4)

Health = 1
Fire = 0
Reactivity = 0

HMIS-ratings (scale 0 - 4)

Health = 1
Fire = 0
Reactivity = 3

Other hazards
Results of PBT and vPvB assessment
PBT: Not applicable.
vPvB: Not applicable.

* 3 Composition/information on ingredients

Chemical characterization: Mixtures
Description: Mixture of the substances listed below with nonhazardous additions.

Dangerous components:		
CAS: 109-66-0	pentane	50-100%
CAS: 110-82-7	cyclohexane	15-20%
CAS: 106-97-8	butane, pure	10-15%
CAS: 74-98-6	propane	5-10%

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CAS: 75-28-5	isobutane	1-5%

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4 First-aid measures

Description of first aid measures
General information: Immediately remove any clothing soiled by the product.
After inhalation:
In case of unconsciousness place patient stably in side position for transportation.
Supply fresh air. If required, provide artificial respiration. Keep patient warm. Consult doctor if symptoms persist.
After skin contact:
Irritation. Repeated contact can lead to brittle or cracked skin.
If skin irritation continues, consult a doctor.
Immediately wash with water and soap and rinse thoroughly.
After eye contact: Rinse opened eye for several minutes under running water. If symptoms persist, consult a doctor.
After swallowing:
If symptoms persist consult doctor.
Do not induce vomiting! Rinse mouth and drink plenty of water.
Information for doctor:
Most important symptoms and effects, both acute and delayed May cause drowsiness and dizziness
Indication of any immediate medical attention and special treatment needed
No further relevant information available.

5 Fire-fighting measures

Extinguishing media
Suitable extinguishing agents:
CO2, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
Special hazards arising from the substance or mixture Extremely flammable aerosol
Advice for firefighters
Protective equipment:
Use self-contained breathing apparatus. Wear protective clothing to prevent eye or skin contact.

6 Accidental release measures

Personal precautions, protective equipment and emergency procedures
Wear protective equipment. Keep unprotected persons away.
Environmental precautions:
Do not allow product to reach sewage system or any water course.
Inform respective authorities in case of seepage into water course or sewage system.
Do not allow to enter sewers/ surface or ground water.
Methods and material for containment and cleaning up:
Dispose contaminated material as waste according to section 13.
Ensure adequate ventilation.
Reference to other sections
See Section 7 for information on safe handling.
See Section 8 for information on personal protection equipment.
See Section 13 for disposal information.
Protective Action Criteria for Chemicals

PAC-1:		
CAS: 109-66-0	pentane	3000* ppm
CAS: 110-82-7	cyclohexane	300 ppm
CAS: 106-97-8	butane, pure	5500* ppm

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CAS: 74-98-6	propane	5500* ppm
CAS: 75-28-5	isobutane	5500* ppm

PAC-2:		
CAS: 109-66-0	pentane	33000*** ppm
CAS: 110-82-7	cyclohexane	1700* ppm
CAS: 106-97-8	butane, pure	17000** ppm
CAS: 74-98-6	propane	17000** ppm
CAS: 75-28-5	isobutane	17000** ppm

PAC-3:		
CAS: 109-66-0	pentane	200000 ppm
CAS: 110-82-7	cyclohexane	10000** ppm
CAS: 106-97-8	butane, pure	53000*** ppm
CAS: 74-98-6	propane	33000*** ppm
CAS: 75-28-5	isobutane	53000*** ppm

7 Handling and storage

Handling:
Precautions for safe handling Ensure good ventilation/exhaustion at the workplace.
Information about protection against explosions and fires: Keep ignition sources away - Do not smoke.

Conditions for safe storage, including any incompatibilities
Storage:
Requirements to be met by storerooms and receptacles:
Store in a cool and well-ventilated place. Keep away from sources of ignition. Keep away from direct sunlight. Ensure that lighting and electrical equipment are not sources of ignition.
Observe official regulations on storing packagings with pressurized containers.
Information about storage in one common storage facility: Not required.
Further information about storage conditions: Keep receptacle tightly sealed.
Specific end use(s) No further relevant information available.

* 8 Exposure controls/personal protection

Additional information about design of technical systems: No further data; see section 7.

Control parameters

Components with limit values that require monitoring at the workplace:	
CAS: 109-66-0 pentane	
PEL	Long-term value: 2950 mg/m³, 1000 ppm
REL	Long-term value: 350 mg/m³, 120 ppm Ceiling limit value: 1800* mg/m³, 610* ppm *15-min
TLV	Long-term value: 1000 ppm
CAS: 110-82-7 cyclohexane	
PEL	Long-term value: 1050 mg/m³, 300 ppm
REL	Long-term value: 1050 mg/m³, 300 ppm
TLV	Long-term value: 100 ppm BEI

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CAS: 106-97-8 butane, pure	
REL	Long-term value: 1900 mg/m³, 800 ppm
TLV	Short-term value: 1000 ppm (EX)
CAS: 74-98-6 propane	
PEL	Long-term value: 1800 mg/m³, 1000 ppm
REL	Long-term value: 1800 mg/m³, 1000 ppm
TLV	see Appendix F Minimal oxygen content (D, EX)
CAS: 75-28-5 isobutane	
TLV	Short-term value: 1000 ppm (EX)

Ingredients with biological limit values:	
CAS: 110-82-7 cyclohexane	
BEI	NIC-50 mg/g creatinine Medium: - Time: end of shift at end of workweek Parameter: NIC-1.2-Cyclohexanediol (nonspecific)

Additional information: The lists that were valid during the creation were used as basis.

Exposure controls
Personal protective equipment:
General protective and hygienic measures:
Keep away from foodstuffs, beverages and feed.
Immediately remove all soiled and contaminated clothing.
Wash hands before breaks and at the end of work.
Avoid contact with the eyes and skin.
Breathing equipment:
Respiratory protection recommended when the TLV limit is exceeded .
If ventilation is inadequate, wear a respirator.Suitable respiratory protection: Filter type A for organic gases and vapors.
Protection of hands:

Protective gloves

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.
Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation
Material of gloves
The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. As the product is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.
Penetration time of glove material
The exact break trough time has to be found out by the manufacturer of the protective gloves and has to be observed.
For the permanent contact in work areas without heightened risk of injury (e.g. Laboratory) gloves made of the following material are suitable:
Butyl rubber, BR
For the permanent contact gloves made of the following materials are suitable:
Fluorocarbon rubber (Viton)
Butyl rubber, BR
Nitrile rubber, NBR
Not suitable are gloves made of the following materials: PVC gloves
Eye protection: Not required.

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Body protection: Protective work clothing

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9 Physical and chemical properties

Information on basic physical and chemical properties	
General Information	
Appearance:	
Form:	Aerosol
Color:	Opaque
Odor:	Solvent-like
pH-value:	Mixture is a gas.
Change in condition	
Boiling point/Boiling range:	Not applicable, as aerosol.
Flash point:	Not applicable, as aerosol.
Flammability:	Not applicable.
Ignition temperature:	Product is not selfigniting.
Danger of explosion:	Pressurized container: May burst when heated.
Explosion limits:	
Lower:	1.2 Vol %
Upper:	9.5 Vol %
Vapor pressure at 20 °C (68 °F):	8300 hPa (6225.5 mm Hg)
Density:	Not determined.
Relative density	Not determined.
Vapor density	Not determined.
Evaporation rate	Not applicable.
Solubility in / Miscibility with	
Water:	Not miscible or difficult to mix.
Solvent content:	
VOC content:	100.00 % 1010.0 g/l / 8.43 lb/gal
Other information	No further relevant information available.

10 Stability and reactivity

Reactivity Extremely flammable aerosol. Pressurized container: May burst if heated.
Chemical stability The product is stable under normal conditions.
Thermal decomposition / conditions to be avoided: No decomposition if used according to specifications.
Possibility of hazardous reactions No dangerous reactions known.
Conditions to avoid
Avoid contact with hot surfaces. Heat. No naked flames, no sparks. Remove all sources of ignition.
Incompatible materials: No further relevant information available.
Hazardous decomposition products: No dangerous decomposition products known.

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11 Toxicological information

Information on toxicological effects
Acute toxicity:

LD/LC50 values that are relevant for classification:		
CAS: 110-82-7 cyclohexane		
Oral	LD50	12705 mg/kg (rat)
CAS: 106-97-8 butane, pure		
Inhalative	LC50/4 h	658 mg/l (rat)

Primary irritant effect:
on the skin: Irritant to skin and mucous membranes.
on the eye: No irritating effect.
Sensitization: No sensitizing effects known.
Additional toxicological information:
The product shows the following dangers according to internally approved calculation methods for preparations:
Irritant

Carcinogenic categories

IARC (International Agency for Research on Cancer)
None of the ingredients is listed.

NTP (National Toxicology Program)
None of the ingredients is listed.

OSHA-Ca (Occupational Safety & Health Administration)
None of the ingredients is listed.

12 Ecological information

Toxicity
Aquatic toxicity: No further relevant information available.
Persistence and degradability No further relevant information available.
Behavior in environmental systems:
Bioaccumulative potential No further relevant information available.
Mobility in soil No further relevant information available.
Ecotoxical effects:
Remark: Toxic for fish
Other information: Do not discharge into drains, surface waters or groundwater.
Additional ecological information:
General notes:
Do not allow product to reach ground water, water course or sewage system.
Danger to drinking water if even small quantities leak into the ground.
Also poisonous for fish and plankton in water bodies.
Water hazard class 2 (Self-assessment): hazardous for water
Toxic for aquatic organisms
Results of PBT and vPvB assessment
PBT: Not applicable.
vPvB: Not applicable.
Other adverse effects No further relevant information available.

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13 Disposal considerations

Waste treatment methods
Recommendation:
Must be specially treated adhering to official regulations.
Must not be disposed of together with household garbage. Do not allow product to reach sewage system.
Waste disposal key: 16 05 04 - Gases in pressure containers (including halons) containing dangerous substances

Uncleaned packagings:
Recommendation: Disposal must be made according to official regulations.

* 14 Transport information

UN-Number	
DOT, ADR, IMDG, IATA	UN1950
UN proper shipping name	
DOT	Aerosols, non-flammable
ADR	1950 AEROSOLS, ENVIRONMENTALLY HAZARDOUS
IMDG	AEROSOLS
IATA	AEROSOLS, flammable
Transport hazard class(es)	
DOT	
	
Class	2.1
Label	2.1
ADR	
	
Class	2 5F
Label	2.1
IMDG, IATA	
	
Class	2.1
Label	2.1
Packing group	
DOT, ADR, IMDG, IATA	Void
Environmental hazards:	Product contains environmentally hazardous substances: cyclohexane
Marine pollutant:	No
Special precautions for user	Warning: Gases
Hazard identification number (Kemler code):	-

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EMS Number:	F-D,S-U
Stowage Code	SW1 Protected from sources of heat. SW22 For AEROSOLS with a maximum capacity of 1 litre: Category A. For AEROSOLS with a capacity above 1 litre: Category B. For WASTE AEROSOLS: Category C, Clear of living quarters.
Segregation Code	SG69 For AEROSOLS with a maximum capacity of 1 litre: Segregation as for class 9. Stow "separated from" class 1 except for division 1.4. For AEROSOLS with a capacity above 1 litre: Segregation as for the appropriate subdivision of class 2. For WASTE AEROSOLS: Segregation as for the appropriate subdivision of class 2.
Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code	Not applicable.
Transport/Additional information:	
ADR	
Excepted quantities (EQ)	Code: E0 Not permitted as Excepted Quantity
IMDG	
Limited quantities (LQ)	1L
Excepted quantities (EQ)	Code: E0 Not permitted as Excepted Quantity
UN "Model Regulation":	UN 1950 AEROSOLS, 2.2, ENVIRONMENTALLY HAZARDOUS

* 15 Regulatory information

Safety, health and environmental regulations/legislation specific for the substance or mixture
No further relevant information available.
Sara

Section 355 (extremely hazardous substances):
None of the ingredient is listed.

Section 313 (Specific toxic chemical listings):

CAS: 110-82-7	cyclohexane

TSCA (Toxic Substances Control Act):

pentane	ACTIVE
cyclohexane	ACTIVE
butane, pure	ACTIVE
propane	ACTIVE
isobutane	ACTIVE

Hazardous Air Pollutants
None of the ingredients is listed.

Proposition 65

Chemicals known to cause cancer:
None of the ingredients is listed.

Chemicals known to cause reproductive toxicity for females:
None of the ingredients is listed.

Chemicals known to cause reproductive toxicity for males:
None of the ingredients is listed.

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Chemicals known to cause developmental toxicity:
None of the ingredients is listed.

Cancerogenity categories

EPA (Environmental Protection Agency)		
CAS: 110-82-7	cyclohexane	I

TLV (Threshold Limit Value)
None of the ingredients is listed.

NIOSH-Ca (National Institute for Occupational Safety and Health)
None of the ingredients is listed.

GHS label elements The product is classified and labeled according to the Globally Harmonized System (GHS).
Hazard pictograms GHS02, GHS07, GHS08, GHS09
Signal word Danger

Hazard-determining components of labeling:
pentane
cyclohexane
Hazard statements
Extremely flammable aerosol.
Causes skin irritation.
May cause drowsiness or dizziness.
May be fatal if swallowed and enters airways.
Toxic to aquatic life with long lasting effects.
Precautionary statements
Keep away from heat/sparks/open flames/hot surfaces. - No smoking.
Do not spray on an open flame or other ignition source.
Pressurized container: Do not pierce or burn, even after use.
Avoid breathing dust/fume/gas/mist/vapors/spray
Wash thoroughly after handling.
Use only outdoors or in a well-ventilated area.
Avoid release to the environment.
Wear protective gloves.
If swallowed: Immediately call a poison center/doctor.
Specific treatment (see on this label).
Do NOT induce vomiting.
If on skin: Wash with plenty of water.
IF INHALED: Remove person to fresh air and keep comfortable for breathing.
Call a poison center/doctor if you feel unwell.
Take off contaminated clothing and wash it before reuse.
If skin irritation occurs: Get medical advice/attention.
Collect spillage.
Store in a well-ventilated place. Keep container tightly closed.
Store locked up.
Protect from sunlight. Do not expose to temperatures exceeding 50°C/122°F.
Chemical safety assessment: A Chemical Safety Assessment has not been carried out.

16 Other information

The information corresponds to the current state of knowledge. Kistler reserves the right to make technical changes. Liability for consequential damage resulting from the use of Kistler products is excluded.

Phone +41 52 224 11 11, Fax +41 52 224 14 14, info@kistler.com, www.kistler.com

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

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Contact:

Date of preparation / last revision 05/27/2025 / 2

Abbreviations and acronyms:

ADR: Accord relatif au transport international des marchandises dangereuses par route (European Agreement Concerning the International Carriage of Dangerous Goods by Road)
IMDG: International Maritime Code for Dangerous Goods
DOT: US Department of Transportation
IATA: International Air Transport Association
EINECS: European Inventory of Existing Commercial Chemical Substances
ELINCS: European List of Notified Chemical Substances
CAS: Chemical Abstracts Service (division of the American Chemical Society)
NFPA: National Fire Protection Association (USA)
HMIS: Hazardous Materials Identification System (USA)
VOC: Volatile Organic Compounds (USA, EU)
LC50: Lethal concentration, 50 percent
LD50: Lethal dose, 50 percent
PBT: Persistent, Bioaccumulative and Toxic
vPvB: very Persistent and very Bioaccumulative
NIOSH: National Institute for Occupational Safety
OSHA: Occupational Safety & Health
TLV: Threshold Limit Value
PEL: Permissible Exposure Limit
REL: Recommended Exposure Limit
BEI: Biological Exposure Limit
Aerosols 1: Aerosols – Category 1
Skin Irritation 2: Skin corrosion/irritation – Category 2
Specific Target Organ Toxicity - Single Exposure 3: Specific target organ toxicity (single exposure) – Category 3
Aspiration Hazard 1: Aspiration hazard – Category 1
Aquatic Acute 2: Hazardous to the aquatic environment - acute aquatic hazard – Category 2
Aquatic Chronic 2: Hazardous to the aquatic environment - long-term aquatic hazard – Category 2

*** Data compared to the previous version altered.**