

MASS AIR FLOW SENSOR CLEANER

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Report No. : GDQY20DS345451ME
Creation Date : 2023/09/26
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*Prepared according to American OSHA HCS-2012 (29 CFR 1910.1200)

1 Identification

Product identifier

Product Name	MASS AIR FLOW SENSOR CLEANER
Cat No.	GDQY20DS345
CAS No.	Not applicable
EC No.	Not applicable
Molecular Formula	Not applicable

Recommended use of the product and restrictions on use

Relevant identified uses	Please consult manufacturer.
Uses advised against	Please consult manufacturer.

Emergency phone number

Emergency phone number	1-800-424-9300 (CHEMTREC)
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2 Hazard(s) identification

Hazard classification according to 29 CFR 1910.1200

Aerosols	Category 1
Aspiration Hazard	Category 1
Skin Corrosion/Irritation	Category 2
Eye Damage/Irritation	Category 2A
Specific Target Organ Toxicity (Single Exposure)	Category 3(drowsiness or dizziness)

Label elements

Hazard pictograms	
Signal word	Danger

Hazard statements

H222	Extremely flammable aerosol
H304	May be fatal if swallowed and enters airways
H315	Causes skin irritation
H319	Causes serious eye irritation
H336	May cause drowsiness or dizziness

Precautionary statements

◆ Prevention

P210	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P211	Do not spray on an open flame or other ignition source.
P251	Do not pierce or burn, even after use.
P261	Avoid breathing gas.
P264	Wash hands and other parts of the body (if related) thoroughly after handling.
P272	Contaminated work clothing should not be allowed out of the workplace.
P280	Wear protective gloves/protective clothing/eye protection/face protection/hearing protection.

◆ Response

P321	Specific treatment (see related instructions on the label).
P331	Do NOT induce vomiting.
P302+P352	IF ON SKIN: Wash with plenty of water.
P304+P340	IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P362+P364	Take off contaminated clothing and wash it before reuse.
P305+P351+P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

◆ Storage

P405	Store locked up.
P403+P233	Store in a well-ventilated place. Keep container tightly closed.
P410+P412	Protect from sunlight. Do not expose to temperatures exceeding 50 °C/ 122 °F.

◆ Disposal

P501	Dispose of contents/container in accordance with local/regional/national/international regulations.
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Other hazards

	Not applicable.
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Hazard description

◆ Physical and chemical hazards

	Extremely flammable, risk of explosion.
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◆ Health hazards

Inhaled	Inhalation of the product may cause drowsiness and dizziness. This may be accompanied by sleepiness, reduced alertness, loss of reflexes, lack of co-ordination, and vertigo. May be fatal if swallowed and enters airways during the course of normal handling.
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Ingestion	Due to physical form of this product, considered an unlikely route of entry in commercial/industrial environments.
Skin Contact	The product can cause skin irritation following direct contact with the skin.
Eye	This product may cause serious eye irritation. Severe inflammation may be expected with pain following direct contact with the eye.

◆ Environmental hazards

	Please refer to 12th chapter of SDS.
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3 Composition/information on ingredients

Substance/mixture

	Mixture
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Component	CAS No.	EC No.	Concentration (wt, %)
2-methylpentane	107-83-5	203-523-4	45~65
Propan-2-ol	67-63-0	200-661-7	10~30
Acetone	67-64-1	200-662-2	10~30
Carbon dioxide	124-38-9	204-696-9	2~10

4 First-aid measures

Description of first aid measures

General advice	Immediate medical attention is required. Show this safety data sheet (SDS) to the doctor in attendance.
Eye contact	First rinse with plenty of water for several minutes (remove contact lenses if easily possible), then take to a doctor.
Skin contact	Remove contaminated clothes. Rinse and then wash skin with water and soap.
Ingestion	Rinse mouth.
Inhalation	Fresh air , rest.
Protecting of first-aiders	Ensure that medical personnel are aware of the substance involved. Take precautions to protect themselves and prevent spread of contamination.

Most important symptoms/effects, acute and delayed

1	Substance accumulation, in the human body, may occur and may cause some concern following repeated or long-term occupational exposure.
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Indication of any immediate medical attention and special treatment needed

1	Treat symptomatically.
2	Symptoms may be delayed.

5 Fire-fighting measures

Extinguishing media

Suitable extinguishing media	Small Fire : Dry chemical or CO ₂ ; Large Fire : Water spray or fog.
Unsuitable extinguishing media	Don't use water spray directly in the leak or safety equipment, otherwise may cause icing.

Specific hazards arising from the substance or mixture

1	Flammable: will be easily ignited by heat, sparks or flames.
2	Will form explosive mixtures with air.
3	Fire exposed containers may vent contents through pressure relief valves thereby increasing fire intensity and/or vapour concentration.
4	Vapours may travel to source of ignition and flash back.
5	Development of hazardous combustion gases or vapor possible in the event of fire.
6	May expansion or decompose explosively when heated or involved in fire.

| Special protective equipment and precautions for fire-fighters

1	As in any fire, wear self-contained breathing apparatus (MSHA/NIOSH approved or equivalent) and full protective gear.
2	Fight fire from a safe distance, with adequate cover.
3	Prevent fire extinguishing water from contaminating surface water or the ground water system.

6 Accidental release measures

| Personal precautions, protective equipment and emergency procedures

1	Avoid breathing vapours and contacting with skin and eye.
2	Beware of vapours accumulating to form explosive concentrations.
3	Vapours can accumulate in low areas.
4	Emergency personnel wear positive pressure self-contained breathing apparatus. Wear protective and anti-static clothing. Wear chemical impermeable gloves.
5	Use personal protective equipment,do not breathe gas.
6	Ensure adequate ventilation. Remove all sources of ignition. Take precautionary measures against static discharges.
7	Evacuate personnel to safe areas. Keep people away from and upwind of spill/leak.

| Environmental precautions

1	Prevent further leakage or spillage if safe to do so.
2	Discharge into the environment must be avoided.

| Methods and materials for containment and cleaning up

1	All equipment used in the work should be grounded.
2	Remove all sources of ignition. Use spark-proof tools and explosion-proof equipment.
3	Spray water inhibits vapor or changes the direction of vapor cloud flow.
4	Do not allow spills to come into contact with combustible materials such as wood, paper, oil, etc.
5	Do not touch or cross spills.
6	Isolate the leak area until the gas is exhausted.
7	Cut off the source of the leak as much as possible.
8	Keep leaks in a ventilated place.
9	Do not use water directly to impact spills or sources of leakage.
10	Wear a cold suit when the liquefied gas leaks.
11	It is recommended that emergency personnel wear a positive pressure self-contained breathing apparatus and wear general work clothes.
12	A large number of leaks: The warning zone is delineated according to the area affected by the gas, and the unrelated personnel are evacuated from the crosswind and the upwind to the safe zone.
13	Adhered or collected material should be promptly disposed of, in accordance with appropriate laws and regulations.

- 14 Prevent gas from diffusing through sewers, ventilation systems, and confined spaces.

7 Handling and storage

Precautions for safe handling

1	Avoid inhalation of vapors.
2	Use only non-sparking tools.
3	To prevent fire caused by electrostatic discharge steam, equipment on all metal parts should be grounded.
4	Use explosion proof equipment.
5	Handling is performed in a well ventilated place.
6	Wear suitable protective equipment.
7	Avoid contact with skin and eyes.
8	Keep away from heat/sparks/open flames/ hot surfaces.

Conditions for safe storage, including any incompatibilities

1	Keep containers tightly closed.
2	Keep containers in a dry, cool and well-ventilated place.
3	Keep away from heat/sparks/open flames/hot surfaces.
4	Store away from incompatible materials and foodstuff containers.

8 Exposure controls/personal protection

Control parameters

Component	Country/Region	Limit value - Eight hours		Limit value - Short term	
		ppm	mg/m ³	ppm	mg/m ³
2-methylpentane	USA - NIOSH	100	350	510	1800
	South Korea	500	1800	1000	3600
	Ireland	500	1800	1000	3600
	Germany (AGS)	500	1800	1000	3600
	Denmark	200	700	400	1400
	Australia	500	1760	1000	3500
	USA-ACGIH	500		1000	
Propan-2-ol	USA - OSHA	400	980	-	-
	South Korea	200	480	400	980
	Ireland	200	-	400	-
	Germany (AGS)	200	500	400	1000
	Denmark	200	490	400	980
	Australia	400	983	500	1230
	USA-ACGIH	200	-	400	-
Acetone	USA - OSHA	1000	2400	-	-
	South Korea	500	1188	750	1782
	Ireland	500	1210	-	-

	Germany (AGS)	500	1200	1000	240
	Denmark	250	600	500	1200
	Australia	500	1185	1000	2375
	USA-ACGIH	250	-	500	-
Carbon dioxide	USA - OSHA	5000	9000	-	-
	South Korea	5000	9000	30000	54000
	Ireland	5000	9000	15000	27000
	Germany (AGS)	5000	9100	10000	18200
	Denmark	5000	9000	10000	18000
	Australia	5000	9000	30000	54000
	USA-ACGIH	5000	-	30000	-

Engineering controls

1	Ensure adequate ventilation, especially in confined areas.
2	Ensure that eyewash stations and safety showers are close to the workstation location.
3	Use explosion-proof electrical/ventilating/lighting/equipment.
4	Set up emergency exit and necessary risk-elimination area.

Personal protection equipment

General requirement	    
Eye protection	Must wear appropriate safety goggles.
Hand protection	Must wear anti static chemical protective gloves.
Respiratory protection	Appropriate respiratory protective equipment must be worn. When the oxygen concentration is unknown, a self-contained atmosphere-supplying respiratory protective apparatus must be worn.
Skin and body protection	Must wear anti static chemical protective clothing and anti static shoes.

9 Physical and chemical properties and safety characteristics

Physical and chemical properties

Appearance (physical state, color, etc.)	Transparent liquid
Odor	Pungent odor
Odor threshold	No information available
pH	Not applicable
Melting point/freezing point(°C)	No information available
Initial boiling point and boiling range(°C)	No information available
Flash point(Closed cup, °C)	Not applicable
Evaporation rate	Not applicable
Flammability	Extremely flammable
Upper/lower explosive	Upper limit : No information available ; Lower limit : No information available

limits[%(v/v)]	
Vapor pressure	Not applicable
Vapor density(Air = 1)	Not applicable
Relative density(Water=1)	0.6936±0.1
Solubility	No information available
n-octanol/water partition coefficient	Not applicable
Auto-ignition temperature(°C)	No information available
Decomposition temperature(°C)	No information available
Kinematic viscosity	Not applicable

10 Stability and reactivity

| Stability and reactivity

Reactivity	Contact with incompatible substances can cause decomposition or other chemical reactions.
Chemical stability	Stable under proper operation and storage conditions.
Possibility of hazardous reactions	In contact with oxidants causes severe reactions, and may cause a fire or explosion. In contact with oxidants may cause a fire or an explosion. Reacts with active metals and poses an explosive potential or fire.
Conditions to avoid	Incompatible materials, heat, flame and spark.
Incompatible materials	Oxidants, alkali metals, alkaline earth metals and aluminum. Oxidants, chloroform, bromoform and other organic solvents. Active metal, alcohols, aldehydes, carbon disulfide, carbon, sulfur, phosphorus, boron, reducing agents, metallic acetylenes and metallic carbonates.
Hazardous decomposition products	Under normal conditions of storage and use, hazardous decomposition products should not be produced.

11 Toxicological information

| Acute toxicity

Component	LD ₅₀ (oral)	LD ₅₀ (dermal)	LC ₅₀ (inhalation,4h)
Propan-2-ol	5045mg/kg(Rat)	12800mg/kg(Rabbit)	No information available
Acetone	5800mg/kg(Rat)	> 15800mg/kg(Rabbit)	76mg/L(Rat)

| Carcinogenicity

Component	List of carcinogens by the IARC Monographs	Report on Carcinogens by NTP	OSHA Carcinogen List
2-methylpentane	Not Listed	Not Listed	Not Listed
Propan-2-ol	Category 3	Not Listed	Not Listed
Acetone	Not Listed	Not Listed	Not Listed
Carbon dioxide	Not Listed	Not Listed	Not Listed

| Others

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Skin corrosion/irritation	Causes skin irritation(Category 2)

Serious eye damage/irritation	Causes serious eye irritation(Category 2A)
Skin sensitization	Based on available data, the classification criteria are not met
Respiratory sensitization	Based on available data, the classification criteria are not met
Reproductive toxicity	Based on available data, the classification criteria are not met
STOT-single exposure	May cause drowsiness or dizziness(Category 3(drowsiness or dizziness))
STOT-repeated exposure	Based on available data, the classification criteria are not met
Aspiration hazard	May be fatal if swallowed and enters airways(Category 1)
Germ cell mutagenicity	Based on available data, the classification criteria are not met
Reproductive toxicity(additional)	Based on available data, the classification criteria are not met

12 Ecological information

| Acute aquatic toxicity

Component	Fish	Crustaceans	Algae
Propan-2-ol	LC ₅₀ : 9640mg/L (96h)(Fish)	EC ₅₀ : >1000mg/L (48h)(Crustaceans)	ErC ₅₀ : >1000mg/L (72h)(Algae)
Acetone	LC ₅₀ : 5540mg/L (96h)(Fish)	EC ₅₀ : 18500mg/L (48h)(Crustaceans)	ErC ₅₀ : 7200mg/L (96h)(Algae)

| Chronic aquatic toxicity

Component	Fish	Crustaceans	Algae
Propan-2-ol	No information available	NOEC :>100mg/L(Crustaceans)	NOEC : 1000mg/L(Algae)

| Persistence and degradability

Component	Persistence (water/soil)	Persistence (air)
2-methylpentane	Low	Low

| Bioaccumulative potential

Component	Bioaccumulative potential	Comments
2-methylpentane	Low	Log Kow=3.2145

| Mobility in soil

Component	Mobility in soil	Soil Organic Carbon-Water Partitioning Coefficient (Koc)
2-methylpentane	Low	124.9

| Results of PBT and vPvB assessment

Component	Results of PBT and vPvB assessment [according to (EC) No 1907/2006]
2-methylpentane	Insufficient information, temporarily unable to evaluate
Propan-2-ol	Not PBT/vPvB
Acetone	Not PBT/vPvB
Carbon dioxide	Insufficient information, temporarily unable to evaluate

13 Disposal considerations

Disposal considerations

Waste chemicals	Before disposal should refer to the relevant national and local laws and regulation. Recommend the use of incineration disposal.
Contaminated packaging	Containers may still present chemical hazard when empty. Keep away from hot and ignition source of fire. Return to supplier for recycling if possible.
Disposal recommendations	Refer to section waste chemicals and contaminated packaging.

14 Transport information

Label and Mark

Transporting Label	
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US DOT (49CFR)

UN number	1950
UN proper shipping name	AEROSOLS
Transport hazard class	2.1
Transport subsidiary hazard class	None
Packing group	Not applicable
Special provisions	
DOT Reportable Quantity (RQ)/lbs	5000(Acetone)
Environmental hazards	—

IMDG-CODE

UN number	1950
UN proper shipping name	AEROSOLS
Transport hazard class	2.1
Transport subsidiary hazard class	None
Packing group	Not applicable
Marine pollutant (Yes or no)	No

IATA-DGR

UN number	1950
UN proper shipping name	AEROSOLS
Transport hazard class	2.1
Transport subsidiary hazard class	None
Packing group	Not applicable

UN-ADR

UN number	1950
UN proper shipping name	AEROSOLS
Transport hazard class	2.1
Transport subsidiary hazard class	None
Packing group	Not applicable

15 Regulatory information

International chemical inventory

Component	EC inventory	TSCA	DSL	IECSC	NZIoC	PICCS	KECI	AIIC	ENCS
2-methylpentane	✓	✓	✓	✓	✓	✓	✓	✓	✓
Propan-2-ol	✓	✓	✓	✓	✓	✓	✓	✓	✓
Acetone	✓	✓	✓	✓	✓	✓	✓	✓	✓
Carbon dioxide	✓	✓	✓	✓	✓	✓	✓	✓	✓

[EC inventory]	European Inventory of Existing Commercial Chemical Substances
[TSCA]	United States Toxic Substances Control Act Inventory
[DSL]	Canadian Domestic Substances List
[IECSC]	China Inventory of Existing Chemical Substances
[NZIoC]	New Zealand Inventory of Chemicals
[PICCS]	Philippines Inventory of Chemicals and Chemical Substances
[KECI]	Korea Existing Chemicals Inventory
[AIIC]	Australian. Inventory of Industrial Chemical (AIIC)
[ENCS]	Japan Inventory of Existing & New Chemical Substances

US chemical inventory

Component	A	B	C	D	E	F	G	H
2-methylpentane	×	×	×	✓	✓	✓	×	×
Propan-2-ol	×	×	×	✓	✓	✓	✓	×
Acetone	×	×	✓	✓	✓	✓	✓	×
Carbon dioxide	×	×	×	✓	✓	✓	✓	×

[A]	US Clean Air Act (CAA)- Section 112, Hazardous Air Pollutants
[B]	US SARA 302- Extremely Hazardous Substance List
[C]	US CERCLA- Hazardous Substances List
[D]	US Massachusetts Right-to-Know Substance List
[E]	US New Jersey Right to Know Hazardous Substance List
[F]	US Pennsylvania Right to Know Hazardous Substance List
[G]	US New York City Right-to-Know Hazardous Substance List
[H]	US California Proposition 65 List

Note:

- “✓” Indicates that the substance included in the regulations.
 “×” No data or not included in the regulations.

16 Other information

Information on revision

Creation Date	2023/09/26
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Revision Date	2023/09/26
Reason for revision	-

Reference

- [1] IPCS: The International Chemical Safety Cards (ICSC), website: <http://www.ilo.org/dyn/icsc/showcard.home>.
- [2] IARC, website: <http://www.iarc.fr/>.
- [3] OECD: The Global Portal to Information on Chemical Substances, website: <https://www.echemportal.org/echemportal/substancesearch/index.action>.
- [4] CAMEO Chemicals, website: <http://cameochemicals.noaa.gov/search/simple>.
- [5] NLM: ChemIDplus, website: <http://chem.sis.nlm.nih.gov/chemidplus/chemidlite.jsp>.
- [6] EPA: Integrated Risk Information System, website: <http://cfpub.epa.gov/iris/>.
- [7] U.S. Department of Transportation: ERG, website: <http://www.phmsa.dot.gov/hazmat/library/erg>.
- [8] Germany GESTIS-database on hazard substance, website: <http://gestis-en.itrust.de/>.

Abbreviations and acronyms

CAS	Chemical Abstracts Service	UN	The United Nations
PC-STEL	Short term exposure limit	OECD	Organization for Economic Co-operation and Development
PC-TWA	Time Weighted Average	IMDG-CODE	International Maritime Dangerous Goods CODE
MAC	Maximum Allowable Concentration	IARC	International Agency for Research on Cancer
DNEL	Derived No Effect Level	ICAO	International Civil Aviation Organization
PNEC	Predicted No Effect Concentration	IATA	International Air Transportation Association
NOEC	No Observed Effect Concentration	ACGIH	American Conference of Governmental Industrial Hygienists
LC ₅₀	Lethal Concentration 50%	NFPA	National Fire Protection Association
LD ₅₀	Lethal Dose 50%	NTP	National Toxicology Program
EC ₅₀	Effective Concentration 50%	PBT	Persistent, Bioaccumulative, Toxic
EC _x	Effective Concentration X%	vPvB	very Persistent, very Bioaccumulative
P _{OW}	Partition coefficient Octanol: Water	CMR	Carcinogens, mutagens or substances toxic to reproduction
BCF	Bioconcentration factor	RPE	Respiratory Protective Equipment
ED	Endocrine disruptor	HCS	Hazard Communication Standard

Disclaimer

This Safety Data Sheet (SDS) was prepared according to OSHA HCS-2012. The data included was derived from international authoritative database and provided by the enterprise. Other information was based on the present state of our knowledge. We try to ensure the correctness of all information. However, due to the diversity of information sources and the limitations of our knowledge, this document is only for user's reference. Users should make their independent judgment of suitability of this information for their particular purposes. We do not assume responsibility for loss, damage or expense arising out of or in any way connected with the handling, storage, use or disposal of the product.