



Material Safety Data Sheet

Printed 16.08.2015

1.IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

Name of product 1,1-Difluoroethane(Air Duster R152a)
Code-ST1001

Manufacturer/distributor SHANGHAI ZHANTU CHEMICAL CO., LTD
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Recommended intended purpose(s)
Technical Aerosols

2. HAZARDS IDENTIFICATION

POTENTIAL HEALTH EFFECTS

EYES: Avoid contact with eyes; may cause redness, irritation and conjunctivitis.

SKIN: Liquid contact could cause frostbite.

INHALATION: Headache, nausea, and possible coordination problems. High concentrations in immediate area can displace oxygen and can cause dizziness, unconsciousness, and possibly death with longer exposure. Keep people away from such vapors without self-contained breathing apparatus.

SIGNS AND SYMPTOMS OF OVEREXPOSURE

EYES: Symptoms of overexposure include: stinging, tearing, redness and pain.

SKIN: Exposure to rapidly expanding gas or vaporizing liquid may cause frostbite ("cold" burn).

INGESTION: Not a likely route of exposure.



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INHALATION: High concentrations may lead to central nervous system effects (drowsiness, dizziness, nausea, headaches, paralysis and loss of consciousness).

ACUTE TOXICITY: Overexposure may cause dizziness and loss of concentration. At higher levels, CNS depression and cardiac arrhythmia may result.

CHRONIC EFFECTS: Frequent or prolonged contact may irritate the skin and cause a skin rash (dermatitis).

MUTAGENICITY: Not Established

REPRODUCTIVE TOXICITY

REPRODUCTIVE EFFECTS: None Expected.

TERATOGENIC EFFECTS: Not considered a developmental toxicant.

CANCER STATEMENT: Did not cause cancer in long term animal studies.

3. COMPOSITION / INFORMATION ON INGREDIENTS

Chemical Name	Wt.%	CAS	EINECS
1,1-difluoroethane (HFC-152a)	> 99.9	75-37-6	
Ethanol	< 1	64-17-5	200-578-6
Denatonium benzoate	< 0.0001	37343-36-6	

4. FIRST AID MEASURES

EYES: Flush eye with water for 15 minutes. Get medical attention.

SKIN: Wash with soap and water. Get medical attention if irritation develops or persists.

INGESTION: Ingestion is unlikely because of the physical properties and is not expected to be hazardous. Do not induce vomiting unless instructed to do so by a physician.

INHALATION: Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

5. FIRE FIGHTING MEASURES

FLASHPOINT AND METHOD: < -50° C (-58° F)

FLAMMABLE LIMITS: 3.9 to 16.9

AUTOIGNITION TEMPERATURE: 154° C (849° F)



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GENERAL HAZARD: Aerosol cans may erupt with force at temperatures above 120F.

EXTINGUISHING MEDIA: Use alcohol foam, carbon dioxide, or water spray when fighting fires involving this material.

HAZARDOUS COMBUSTION PRODUCTS: Carbon dioxide, carbon monoxide, fluorine, hydrofluoric acid, carbonyl halides.

EXPLOSION HAZARDS: Vapors, when present in the flammable range (listed above), especially in a confined or poorly ventilated space, can be ignited with a flame or high intensity source of heat.

FIRE FIGHTING PROCEDURES: Use water spray to keep fire-exposed containers cool and to knock down vapors which may result from product decomposition.

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

6. ACCIDENTAL RELEASE MEASURES

SMALL SPILL: Vapor can be controlled using a water fog. Water streams should not be directed to the liquid as this will cause the liquid to boil and generate more vapor.

LARGE SPILL: -Implement cleanup procedures. -If in public area, keep public away and advise authorities. -Recover by pumping (use an explosion proof or hand pump) or with a suitable absorbent.

GENERAL PROCEDURES: Isolate hazard area. Keep unnecessary and unprotected personnel from entering.

RELEASE NOTES: Spills and releases may have to be reported to Federal and/or local authorities.

7. HANDLING AND STORAGE

GENERAL PROCEDURES: Contents may be under pressure. Exercise caution when opening container. If containers have been stored in direct sunlight or heated above the boiling point of the solvent, the container should be cooled to below the boiling point before opening.



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HANDLING: Use with sufficient ventilation to keep employee exposure below recommended limits.

Provide adequate ventilation for storage, handling and use, especially for enclosed or low spaces. Avoid contact of liquid with eyes and prolonged skin exposure. Do not allow product to contact open flame or electrical heating elements because dangerous decomposition products may form.

STORAGE: Keep away from sources of ignition.

STORAGE TEMPERATURE: Contents under pressure. Do not expose to heat or store above (120) F (49)C.

STORAGE PRESSURE: Store at local atmospheric pressure.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

EXPOSURE GUIDELINES

OSHA HAZARDOUS COMPONENTS (29 CFR1910.1200)							
		EXPOSURE LIMITS					
		OSHA PEL		ACGIH TLV		SupplierOEL	
Chemical Name		ppm	mg/m ³	ppm	mg/m ³	ppm	mg/m ³
Ethanol	TWA	1000 ppm	1900 mg/m ³	1000 ppm	1880 mg/m ³	NL	NL
	STEL	NL ppm	NL mg/m ³	NL ppm	NL mg/m ³	NL	NL
Denatonium benzoate	TWA	[1]	[1]	[1]	[1]		
OSHA TABLE COMMENTS: 1. NOT ESTABLISHED							

ENGINEERING CONTROLS: Use process enclosures, local exhaust ventilation, or other engineering controls to control airborne levels below recommended exposure limits.

PERSONAL PROTECTIVE EQUIPMENT

EYES AND FACE: For normal conditions, wear safety glasses. Where there is reasonable probability of liquid contact, wear splash-proof goggles.

SKIN: Skin contact with liquid may cause frostbite. General work clothing and gloves (leather) should provide adequate protection. If prolonged contact with the liquid or gas is anticipated, insulated gloves constructed of PVA, neoprene or butyl rubber should be used. Any contaminated clothing should be promptly removed and washed before reuse.

RESPIRATORY: NIOSH/MSHA approved air purifying respirator with an organic vapor



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cartridge or canister may be permissible under certain circumstances where airborne concentrations are expected to exceed exposure limits. Protection provided by air purifying respirators is limited. Use a positive pressure air supplied respirator if there is any potential for an uncontrolled release, exposure levels are not known, or any other circumstances where air purifying respirators may not provide adequate protection.

WORK HYGIENIC PRACTICES: Wash hands before eating and wash before reuse.

OTHER USE PRECAUTIONS: Emergency shower and eyewash facility should be in close proximity.

9. PHYSICAL AND CHEMICAL PROPERTIES

PHYSICAL STATE: Gas

ODOR: Low odor.

COLOR: Colorless

PERCENT VOLATILE: 99.9+

VAPOR PRESSURE: 87 psia at 25° C

VAPOR DENSITY: 2.4 (Air=1)

BOILING POINT: -25° C (-13° F)

FLASHPOINT AND METHOD: < -50° C (-58° F)

SOLUBILITY IN WATER: 0.28 wt% @ 25C

SPECIFIC GRAVITY: 0.910

(VOC): < 1.000 % by weight

10. STABILITY AND REACTIVITY

STABILITY: Stable under normal conditions.

POLYMERIZATION: Will not occur.

CONDITIONS TO AVOID: Heat, flames, ignition sources, and incompatibles.

HAZARDOUS DECOMPOSITION PRODUCTS: Carbon dioxide, carbon monoxide, fluorine, hydrofluoric acid, carbonyl halides.

INCOMPATIBLE MATERIALS: Incompatible with alkali or alkaline earth metals - powdered Al, Zn, Be, Etc.



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11. TOXICOLOGICAL INFORMATION

ACUTE

INHALATION LC50: 977 g/m³, 2-hour

EYE EFFECTS: May be mildly irritating to eyes.

CARCINOGENICITY

Chemical Name	NTP Status	IARC Status	OSHA Status
Ethanol	NOT LISTED	NOT LISTED	NOT LISTED

NEUROTOXICITY: Exposure to high concentrations may effect the nervous system.

REPRODUCTIVE EFFECTS: Not Established

TERATOGENIC EFFECTS: NOT listed

MUTAGENICITY: Not Established

12. E COLOGICAL INFORMATION

ENVIRONMENTAL DATA: There is limited information available on the environmental fate and effects of this material. The primary environmental concern for release is the impact on aquatic and terrestrial species. Due care should be taken to avoid the accidental release of this material into the environment.

ECOTOXICOLOGICAL INFORMATION: Not Established

13. DI SPOSAL CONSIDERATIONS

DISPOSAL METHOD: Federal, State, and Local laws governing disposal of materials can differ. Ensure compliance with proper authorities before disposal.

GENERAL COMMENTS: Dispose of in a manner consistent with federal, state, and local regulations.

14. T RANSPORT INFORMATION

DOT (DEPARTMENT OF TRANSPORTATION)

PROPER SHIPPING NAME: 1,1-difluoroethane

PRIMARY HAZARD CLASS/DIVISION: 2.1

UN/NA NUMBER: 1030

PACKING GROUP: II



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ROAD AND RAIL (ADR/RID)

KEMLER NUMBER: UN1030

HAZARD CLASS: 2.1

AIR (ICAO/IATA)

SHIPPING NAME: 1,1-difluoroethane

UN/NA NUMBER: 1030

PRIMARY HAZARD CLASS/DIVISION: 2.1

PACKING GROUP: II

NOTE: Cargo aircraft ONLY. Copy of DOT-E 11516 must be presented.

VESSEL (IMO/IMDG)

SHIPPING NAME: 1,1-difluoroethane

UN/NA NUMBER: UN1030

PRIMARY HAZARD CLASS/DIVISION: 2.1

15. OTHER INFORMATION

Recommend uses and restrictions

National and local regulations concerning chemicals shall be observed.

Further information

The information contained herein is based on the state of our knowledge. It characterizes the product with regard to the appropriate safety precautions. It does not represent a guarantee of the properties of the product.