

SECTION 1 - PRODUCT AND COMPANY IDENTIFICATION

1.1 Product identifier

Product name: TKS Blend
 SDS number: AVL-TKS
 Synonym(s): Glycol/alcohol/water blend, Anti-icing fluid

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

General Use: Anti-icing/de-icing fluid
 Uses advised against: None known

1.3 Details of the supplier and of the safety data sheet

Manufacturer/Distributor
 Aviation Laboratories, Inc (AVLAB)
 5401 Mitchelldale St., B6
 Houston, TX 77092 USA
 1-713-864-6677; 1-800-424-9300 (USA)

1.4 Emergency telephone number

CHEMTREC: 1-800-424-9300 (USA)
 Outside the USA: 1-202-483-7616

SECTION 2 - HAZARDS IDENTIFICATION

2.1 Classification of substance or mixture

Product definition: Mixture
 Classification in accordance with 29 CFR 1910 (OSHA HCS) and Regulation EC No. 1272/2008
 Acute Toxicity, Oral - Category 4 [H302]
 Eye Irritation - Category 2A [H319]
 Single Target Organ Toxicity, Repeated Exposure - Category 2; STOT RE 2 [H373]

2.2 Label elements

Hazard symbol(s):



Signal word:

Warning

Hazard statement(s):

H302 - Harmful if swallowed
 H319 - Causes serious eye irritation
 H373 - May cause damage to the kidneys through prolonged and repeated exposure by swallowing

Precautionary statements:

[Prevention]

P260 - Do not breathe fumes, mist and vapor.
 P264 - Wash hands and other exposed skin areas thoroughly after handling.
 P270 - Do not eat, drink or smoke when using this product.

[Response]

P280 - Wear protective gloves, protective clothing and eye protection.
 P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
 P312 - Call a POISON CENTER or a doctor if you feel unwell.
 P337 + P313 - If eye irritation persists: Get medical attention.

[Disposal]

P501 - Dispose of contents and containers in accordance with national and local regulations.

2.3 Hazards not otherwise classified (HNOC) or not covered by GHS

None known

SECTION 3 - COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances

Not applicable

3.2 Mixtures

% by Weight	Ingredient	CAS Number	EC Number	Index Number	GHS Classification
70 - 95	Ethylene Glycol	107-21-1	203-473-1	603-027-00-1	H302, H373
1 - 15	Isopropanol	67-63-0	200-661-7	603-117-00-0	H225, H319, H336

As per paragraph (i) of 29 CFR 1910.1200, formulation is considered a trade secret and specific chemical identity and exact percentage (concentration) of composition may have been withheld. Specific chemical identity and exact percentage composition will be provided to health professionals, employees, or designated representatives in accordance with the applicable provisions of paragraph (i).

There are no additional ingredients present in this product which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

SECTION 4 – FIRST AID MEASURES

4.1 Description of first aid measures

Inhalation: If product mist or vapor causes respiratory irritation or distress, move the exposed person to fresh air immediately. If breathing is difficult or irregular, administer oxygen; if respiratory arrest occurs, start artificial respiration by trained personnel. If unconscious, maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband. If symptoms persist or if the victim feels unwell, seek medical attention.

Eyes: Immediately flush eyes with large amounts of water or saline solution for at least 15 minutes, occasionally lifting the upper and lower lids. Remove contact lenses, if present and easy to do, after first 2 minutes and continue rinsing. If irritation persists seek medical attention, preferably from an ophthalmologist.

Skin: Flush skin with large amounts of water while removing contaminated clothing. Wash the affected area with soap and water followed by thorough rinsing. Wash contaminated clothing and shoes before reuse. If irritation persists, seek medical attention.

Ingestion: Rinse mouth with water if the victim is conscious. Remove dentures if present. DO NOT induce vomiting unless directed to do so by medical personnel. Vomiting may occur spontaneously. To prevent aspiration of material into the lungs, lay the victim on one side with the head lower than the waist. Never give anything by mouth to an unconscious or convulsing person. Do not leave the victim unattended. Seek immediate medical attention.

4.2 Most important symptoms and effects, both acute and delayed

Potential health symptoms and effects

Eyes: Causes serious eye irritation. Symptoms may include inflammation, swelling, pain, tearing and blurred vision. Vapor or mist may cause eye irritation.

Skin: May cause skin irritation with localized redness, itching and discomfort. Prolonged contact with unprotected skin may cause drying and cracking of the skin and dermatitis. exposure of unprotected skin to large quantities may result in the absorption of harmful quantities of ethylene glycol.

Inhalation: May cause irritation of the respiratory system. Symptoms may include nausea, headache, drowsiness, dizziness, unconsciousness and coma. Prolonged and repeated inhalation of vapor or mist may cause liver and kidney damage.

Ingestion: Harmful if swallowed. Causes irritation of the digestive system. When ingested early symptoms mimic alcohol inebriation and are followed by nausea, vomiting, abdominal pain, weakness, muscle tenderness, respiratory failure, convulsions, cardiovascular collapse, pulmonary edema, hypocalcemic tetany and severe metabolic acidosis. Without treatment, death may occur in 8 to 24 hours. Victims who survive the initial toxicity period usually develop renal failure along with brain, liver and kidney damage.

Chronic: Individuals with pre-existing skin disorders or respiratory impairment may be more susceptible to the effects of this product. Impaired kidney and liver functions from pre-existing disorders may be aggravated by exposure to this product. Prolonged or repeated skin contact may cause drying and cracking of the skin, dermatitis or aggravate existing skin conditions. Chronic inhalation can damage the central nervous system. Chronic exposure may cause damage to the liver and kidneys. Isopropanol may be carcinogenic to humans. Refer to Section 11.2.

4.3 Indication of any immediate medical attention and special treatment needed

Advice to doctor and hospital personnel

Treat symptomatically and supportively. Following ingestion admission to hospital should be the priority.

SECTION 5 – FIRE FIGHTING MEASURES

5.1 Extinguishing media

Suitable methods of extinction: Use extinguishing media such as water spray or fog, carbon dioxide, foam and dry chemical.

Unsuitable methods of extinction: Water jets or streams may spread the fire.

5.2 Special hazards arising from the substance or mixture

Combustible material at high temperatures. Closed containers may explode due to the buildup of pressure when exposed to extreme heat. During emergency conditions overexposure to decomposition products may cause a health hazard. Symptoms may not be immediately apparent or may be delayed. Obtain medical attention.

Explosion hazards: Avoid sources of ignition.

5.3 Advice to firefighters

Full protective equipment including self-contained breathing apparatus should be used. Water may be used to cool closed containers to prevent pressure buildup and possible autoignition or explosion when exposed to extreme heat. If possible, firefighters should control runoff water to prevent environmental contamination.

SECTION 6 – ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

Evacuate non-essential personnel. Wear appropriate protective clothing and equipment designated in Section 8.2. Ventilate the area. Remove all sources of ignition. NO SMOKING. Clean up spills immediately. Spills create a slip hazard.

6.2 Environmental precautions

Avoid dispersal of spilled material or runoff and prevent contact with soil and entry into drains, sewers or waterways. Use water sparingly to minimize environmental contamination and reduce disposal requirements.

6.3 Methods and materials for containment and cleaning up

Approach spill from upwind direction. DO NOT flush spill down the drain. Cover drains and contain spill. Cover spill with a large quantity of inert absorbent. Do not use combustible material such as sawdust. Collect material and place into an approved container for proper disposal. Observe possible material restrictions (Sections 7.2 and 10.5). Do not allow material or runoff from rinsing contaminated areas to enter floor drains or storm drains and ditches that lead to waterways. Dispose of in accordance with national, state and local regulations.

6.4 Reference to other sections

For indications about waste treatment, see Section 13.

SECTION 7 – STORAGE AND HANDLING

7.1 Precautions for safe handling

Wear all appropriate personal protective equipment specified in Section 8.2. Do not get in eyes or on skin or clothing. Do not inhale mist or vapor. NO SMOKING. If normal use of material presents a respiratory hazard, use only adequate ventilation or wear an appropriate respirator. Wash contaminated clothing and shoes before reuse. Wash hands and exposed skin areas thoroughly after use.

Advice on protection against fire and explosion

Avoid sources of ignition and hot surfaces.

7.2 Conditions for safe storage, including any incompatibilities

Store in dry, cool, well-ventilated areas away from incompatible materials (see Section 10.5), food and drink. Transfer only to approved containers having correct labeling. Keep containers tightly closed when not in use. Protect containers against physical damage. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Containers are hazardous when empty as they contain product residue. Use appropriate containment to avoid environmental contamination. Ventilate closed areas. Keep out of reach of children.

7.3 Specific end uses

Apart from the uses mentioned in Section 1.2, no other specific uses are stipulated.

SECTION 8 – EXPOSURE CONTROLS / PERSONAL PROTECTION

8.1 Control parameters

Occupational exposure limit values

CAS Number	Ingredient	OSHA PEL	ACGIH TLV	NIOSH
107-21-1	Ethylene Glycol	-----	100 mg/m ³ TWA, ceiling (aerosol)	250 ppm; 125 mg/m ³ TWA
67-63-0	Isopropanol	400 ppm; 980 mg/m ³ TWA	200 ppm; 941 mg/m ³ TWA 400 ppm; 984 mg/m ³ STEL	400 ppm; 980 mg/m ³ TWA 500 ppm; 1,225 mg/m ³ STEL 2,000 ppm IDLH

8.2 Exposure controls

Engineering measures: Technical measures and appropriate working operations should be given priority over the use of personal protective equipment. Use adequate ventilation. Local exhaust is preferable. Refer to Section 7.1.

Individual protection measures: Wear protective clothing to prevent repeated or prolonged contact with product. Protective clothing needs to be selected specifically for the workplace, depending on concentrations and quantities of hazardous substances handled. The chemical resistance of the protective equipment should be enquired at the representative supplier.

Engineering measures: Technical measures and appropriate working operations should be given priority over the use of personal protective equipment. Use adequate ventilation. Local exhaust is preferable. Refer to Section 7.1.

Individual protection measures: Wear protective clothing to prevent repeated or prolonged contact with product. Protective clothing needs to be selected specifically for the workplace, depending on concentrations and quantities of hazardous substances handled. The chemical resistance of the protective equipment should be enquired at the representative supplier.

Hygiene measures: Facilities storing or using this material should be equipped with an eyewash station and safety shower. Change contaminated clothing. Preventive skin protection is recommended. Wash hands thoroughly after use, before eating, drinking, smoking or using the lavatory.

Eye/face protection: Wear safety glasses with unperforated side shields or protective splash goggles during use.

Hand protection: Wear gloves made of butyl rubber, natural rubber (latex), polyethylene or those recommended by glove suppliers for protection against materials in Section 3. Gloves should be impermeable to chemicals and oil. Breakthrough time of selected gloves must be greater than the intended use period.

Skin protection: Wear protective clothing. Wear protective boots if the situation requires.

Respiratory protection: Always use an approved respirator when vapor/aerosols exceed permissible exposure limits. Where risk assessment shows air-purifying respirators are appropriate use a half-mask respirator with multi-purpose combination (US) or type ABEK (EN 14387) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU). Follow OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149.

Environmental exposure controls: Do not empty into drains.

PPE must not be considered a long-term solution to exposure control. PPE usage must be accompanied by employer programs to properly select, maintain, clean fit and use. Consult a competent industrial hygiene resource to determine hazard potential and/or the PPE manufacturers to

ensure adequate protection



Safety Glasses



Gloves



Protective Apron

SECTION 9 – PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

Appearance	Clear, colorless liquid
Odor	Faint, alcoholic
Odor Threshold	No data available
Molecular Weight	Not applicable
Chemical Formula	Not applicable
pH	6.0 - 8.5 [estimated]
Freezing/Melting Point	> - 11.2 °C (> 11.8 °F) [estimated]
Boiling Point Range	82 - 197.4 °C (180 - 387.3 °F)
Evaporation Rate	No data available
Flammability (solid, gas)	Not applicable
Flash Point	> 65 °C (>150 °F) [estimated]
Autoignition Temperature	No data available
Decomposition Temperature	No data available
Lower Explosive Limit (LEL)	No data available
Upper Explosive Limit (UEL)	No data available
Vapor Pressure	No data available
Vapor Density	No data available
Specific Gravity	1.0871
Density	1.08 - 1.09 g/cc (9.03 - 9.11 lb/gal)
Viscosity	No data available
Solubility in Water	Miscible
Partition Coefficient (n-octanol/water)	log Pow = - 1.36 - 0.05
Oxidizing Properties	Not applicable
Explosive Properties	Not applicable
Volatiles by Weight @ 21 °C	100%

9.2 Other Data

None known

SECTION 10 – STABILITY AND REACTIVITY

10.1 Reactivity

This material is stable under normal handling conditions and use.

10.2 Chemical Stability

This material is stable under recommended storage conditions.

10.3 Possibility of hazardous reactions

Hazardous polymerization will not occur.

10.4 Conditions to avoid

High temperatures, sources of ignition, hot surfaces, contact with incompatible materials

10.5 Incompatible materials

Strong oxidizing agents, strong acids, strong bases, acid anhydrides, aluminum, halogenated compounds

10.6 Hazardous decomposition products

Thermal decomposition products include oxides of carbon and hydrocarbons.

SECTION 11 – TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute oral toxicity

LD₅₀, rat: > 8,264 mg/kg [calculated]

Acute inhalation toxicity

No data available

Acute dermal toxicity

LD₅₀, rabbit: > 11,739 mg/kg [calculated]

Skin irritation

May cause skin irritation.

Eye irritation

Causes serious eye irritation.

Sensitization

No data available

Genotoxicity in vitro

No data available

Mutagenicity

No data available

Specific organ toxicity - single exposure

May cause respiratory irritation.

Specific organ toxicity - repeated exposure

Causes damage to the liver through prolonged and repeated use.

Aspiration hazard

No data available

11.2 Further information

Oral toxicity is expected to be moderate in humans due to ethylene glycol even though tests with animals show a lower degree of toxicity. Ingestion of quantities (approximately 100 ml (3 oz.) for ethylene glycol) has caused death in humans.

Ethylene glycol affects the central nervous system, kidneys and metabolic processes. The central nervous system is affected early in the course of poisoning with symptoms that resemble those of alcohol intoxication. Later symptoms include nausea, vomiting, weakness, abdominal and muscle pain, difficulty in breathing and decreased urine output.

Based on animal studies, ingestion of very large amounts of ethylene glycol appears to be the major and possibly only route of exposure to produce birth defects. Exposures by inhalation or skin contact, the primary routes of occupational exposure, had minimal effect on the fetus, in animal studies. Ingestion of large amounts of ethylene glycol has been shown to interfere with reproduction in animals.

An increase in fetal deaths and birth defects was noted when ethylene glycol was administered orally to pregnant rats and mice. Some of these effects occurred at doses that had no toxic effects on the mothers. There is no definitive evidence that ethylene glycol causes reproductive toxicity in humans.

Isopropanol (CAS #67-63-0): IARC, Group 3 carcinogen - *Not classifiable as to its carcinogenicity to humans*. Not listed as a carcinogen by ACGIH, NTP or OSHA.

Handle in accordance with good industrial hygiene and safety practice.

SECTION 12 - ECOLOGICAL INFORMATION

12.1 Toxicity

Large spills or discharges of this material may be harmful to aquatic life and to the environment

12.2 Persistence and degradability

This product is expected to be readily biodegradable.

12.3 Bioaccumulation potential

The bioaccumulation potential for this product is low.

12.4 Mobility in soil

Mobility in soil is very high and may cause contamination of ground water.

12.5 Results of PBT and vPvB assessment

No data available

12.6 Other effects**Additional ecological information**

Do not allow material to run into surface waters, wastewater or soil.

An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.

SECTION 13 - DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Methods of disposal: The generation of waste should be avoided or minimized whenever possible. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe way. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers.

RCRA F-Series: No listings above the reportable threshold (de minimis)

RCRA U-Series: No listings above the reportable threshold (de minimis)

SECTION 14 – TRANSPORTATION INFORMATION

Note: Transportation information provided is for reference only. Customer is urged to consult 49 CFR 100 - 177, IMDG, IATA, EC, United Nations TDG and WHMIS (Canada) TDG information manuals for detailed regulations and exceptions covering specific container sizes, packaging materials and methods of shipping.

USA DOT - Non-Bulk: Not regulated for transport in quantities under 10,638.3 lbs or 1,191.4 gallons in any one inner package under 49 CFR. Bulk shipments containing a reportable quantity (RQ, 5000 pounds or more) of ethylene glycol in a single packaging are transported as hazardous material.

USA DOT (Ground Transportation) - Bulk

Proper Shipping Name Environmentally hazardous substance, liquid, n.o.s. (Ethylene glycol)
Hazard Class 9
UN/NA UN3082
Packing Group III
NEAREG Guide #171
Packaging Authorization Non-Bulk: 49 CFR 173.203; Bulk: 173.241
Packaging Exceptions 49 CFR 173.155

Drum Label(s)



IMO/IMDG (Water Transportation)

Proper Shipping Name Environmentally hazardous substance, liquid, n.o.s. (Ethylene glycol)
Hazard Class 9
UN/NA UN3082
Packing Group III
Marine Pollutant No
EMS Number F-A, S-F

ICAO/IATA (Air Transportation)

Proper Shipping Name Environmentally hazardous substance, liquid, n.o.s. (Ethylene glycol)
Hazard Class 9
UN/NA UN3082
Packing Group III
Quantity Limitations 49 CFR 175.27 and 175.75 - Cargo Aircraft Only: No limit; Passenger Aircraft: No limit

RID/ADR (Rail Transportation)

Proper Shipping Name Environmentally hazardous substance, liquid, n.o.s. (Ethylene glycol)
Hazard Class 9
UN/NA UN3082
Packing Group III

SECTION 15 - REGULATORY INFORMATION

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

U. S. Federal Regulations

OSHA Hazard Communication Standard: This material is classified as hazardous in accordance with OSHA 29 CFR 1910-1200.

OSHA Process Safety Management Standard: This product is not regulated under OSHA PSM Standard 29 CFR 1910.119.

EPA Risk Management Planning Standard: This product is not regulated under EPA RMP Standard (RMP) 40 CFR Part 68.

EPA Federal Insecticide, Fungicide and Rodenticide Act: This product is not a registered Pesticide under the FIFRA, 40 CFR Part 150.

Toxic Substance Control Act (TSCA) Inventory: All substances in this product are listed on the TSCA Inventory. This product is not subject to TSCA 12(b) Export Notification.

Drug Enforcement Administration (DEA) List 2, Essential Chemicals (21 CFR 1310.02(b)) and 1310.4(f)(2)) and Chemical Code Number
No listings

Drug Enforcement Administration (DEA) Lists 1 & 2, Exempt Chemical Mixtures (21 CFR 1310.12(c)) and Code Number: No listings

Department of Homeland Security (DHS) Chemical Facility Anti-Terrorism Standards (CFATS) Chemicals: No listings

Superfund Amendments and Reauthorization Act (SARA)

SARA Section 311/312 Hazard Categories: Fire Hazard, Acute Health Hazard, Chronic Health Hazard

SARA 313 Information: Ethylene Glycol and Isopropanol are subject to the reporting requirements of Section 313 of the Emergency Planning and Community Right-to Know Act of 1986.

SARA 302/304 Extremely Hazardous Substance: None of the components of the product exceed the threshold (de minimis) reporting levels of established by these sections of Title III of SARA.

SARA 302/304 Emergency Planning & Notification: None of the components of the product exceed the threshold (de minimis) reporting levels established by of these sections of Title III of SARA.

Comprehensive Response Compensation and Liability Act (CERCLA): This product contains no CERCLA reportable substances:
Ethylene Glycol (CAS #107-21-1): RQ - 2,268 kg (5,000 lbs)

This product has a Reportable Quantity (RQ) of 5,882.4 lbs. (648.4 gal) based on the RQ for Ethylene Glycol of 5,000 lbs. Releases above the RQ must be reported to the National Response Center. Many states have more stringent release reporting requirements. Report spills required

under federal, state and local regulations.

Clean Air Act (CAA)

Ethylene Glycol (CAS #107-21-1) is a Hazardous Air Pollutant (HAP) designated in CAA Section 112 (b).
 This product does not contain Class 1 Ozone depleters.
 This product does not contain Class 2 Ozone depleters.

Clean Water Act (CWA)

Ethylene Glycol (CAS #107-21-1) is a Hazardous Substance under the CWA.
 This product does not contain Priority Pollutants.
 This product does not contain Toxic Pollutants.

U.S. State Regulations

California Prop 65, Safe Drinking Water and Toxic Enforcement Act of 1986

⚠️ WARNING: This product may expose you to Ethylene Glycol, which is known to the state of California to cause reproductive (developmental) harm. For more information go to www.P65Warnings.ca.gov.

Other U.S. State Inventories

Ethylene Glycol (CAS #107-21-1) is listed on the following State Hazardous Substance Inventories, Right-to-Know lists and/or Air Quality/Air Pollutants lists: CA, DE, ID, IL, ME, MA, NJ, NY, PA, RI, WA, WI.

Isopropanol (CAS #67-63-0) is listed on the following State Hazardous Substance Inventories, Right-to-Know lists and/or Air Quality/Air Pollutants lists: CA, DE, ID, ME, MA, MN, NJ, NY, PA, RI, WA, WI.

Canada

WHMIS Hazard Classification

Harmful if swallowed Causes serious eye irritation May cause respiratory irritation

Canadian National Pollutant Release Inventory (NPRI): Ethylene Glycol and Isopropanol is listed on the NPRI.

European Economic Community

WGK, Germany (Water danger/protection): 1 (low hazard to waters)

Global Chemical Inventory Lists

Country	Inventory Name	Listed
Canada	Domestic Substance List (DSL)	Yes
Canada	Non-Domestic Substance List (NDSL)	No
Europe	Inventory of New and Existing Chemicals (EINECS)	Yes
United States	Toxic Substance Control Act (TSCA)	Yes
Australia	Australian Inventory of Chemical Substances (AICS)	Yes
New Zealand	New Zealand Inventory of Chemicals (NZIoC)	Yes
China	Inventory of Existing Chemical Substances in China	Yes
Japan	Inventory of Existing and New Chemical Substances	Yes
Korea	Existing Chemicals List (KECI)	Yes
Philippines	Philippines Inventory of Chemicals and Chemical	Yes

*Yes - All components of this product are in compliance with the inventory requirements administered by the governing country.
 No - One or more components of this product are not on the inventory or are exempt from listing.

15.2 Chemical safety assessment

For this product a chemical safety assessment was not carried out.

SECTION 16 - OTHER INFORMATION

Hazardous Material Information System (HMIS)

HEALTH	1
FLAMMABILITY	1
PHYSICAL HAZARD	0
PERSONAL PROTECTION	C

C = safety glasses, gloves and an apron

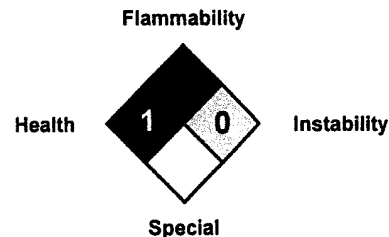
HMIS Hazard Rating Legend

0 = Minimal 1 = Slight 2 = Moderate
 3 = Serious 4 = Severe
 * = Chronic Health Hazard

NFPA Hazard Rating Legend

0 = Insignificant 1 = Slight 2 = Moderate
 3 = High 4 = Extreme

National Fire Protection Association (NFPA)



Abbreviation Key

ACGIH	American Conference of Governmental Industrial Hygienists	LD₅₀	Lowest Lethal Dose
ADR	Accord Dangereux Routier (European regulations concerning the international transport of dangerous goods by road)	mppcf	Millions of Particles Per Cubic Foot
CAS	Chemical Abstract Services	NA	North America
CFR	Code of Federal Regulations	NAERG	North American Emergency Response Guide Book
COC	Cleveland Open Cup	NIOSH	National Institute for Occupational Safety & Health

DOT	Department of Transportation	NTP	National Toxicology Program
EC₅₀	Half maximal effective concentration	OSHA	Occupational Safety and Health Administration
EMS	Emergency Response Procedures for Ships Carrying	PBT	Persistent, Bioaccumulating and Toxic
EPA	Environmental Protection Agency	PEL	Permissible exposure limit
ErC₅₀	Reduction of Growth Rate	PMCC	Pensky-Martens Closed Cup
ERG	Emergency Response Guide Book	ppm	Parts Per Million
FDA	Food and Drug Administration	RCRA	Resource Conservation and Recovery Act
GHS	Globally Harmonized System of Classification and Labelling of Chemicals (GHS)	RID	Dangerous Goods by Rail
HCS	Hazard Communication Standard	RQ	Reportable Quantity
IARC	International Agency for Research on Cancer	TCC/Tag	Tagliabue Closed Cup
IATA	International Air Transport Association	TLV	Threshold Limit Value
IC₅₀	Half Maximal Inhibitory Concentration	TSCA	Toxic Substance Control Act
ICAO	International Civil Aviation Organization	TWA	Time-weighted Average
IDLH	Immediately Dangerous to Life and Health	UN	United Nations
IMDG	International Maritime Dangerous Goods	VOC	Volatile Organic Compounds
IMO	International Maritime Organization	vPvB	Very Persistent and Very Bioaccumulating
LC₅₀	50% Lethal Concentration	WHMIS	Workplace Hazardous Materials Information System
LD₅₀	50% Lethal Dose		

Full Text of GHS Hazard Phrases Referenced in Section 3 (not covered in Section 2)

H225 - Highly flammable liquid and vapor H336 - May cause respiratory irritation

DISCLAIMER OF RESPONSIBILITY

The information on this SDS was obtained from sources which we believe are reliable. However, the information is provided without any warranty, expressed or implied, regarding its correctness. Some information presented, and conclusions drawn herein are from sources other than direct test data on the substance itself. The conditions or methods of handling, storage, use and disposal of the product are beyond our control and may be beyond our knowledge. For this and other reasons, we do not assume damage or expense arising out of or in any way responsibility and expressly disclaim liability for loss, connected with handling, storage, use, or disposal of this product. If the product is used as a component in another product, this SDS information may not be applicable.

Preparation date: 10 December 2018, Version 1

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AVL "TKS" TECHNICAL DATA SHEET

Product part number: AVL-TKS

Description: De-icing, defrosting fluid: Aircraft surfaces, in flight

Specification: DTD 406B

Composition:	Product, Ethylene Glycol,	percent volume	85
	Product, IPA,	percent volume	5
	De-ionized water,	percent volume	10

Characteristics:	Viscosity at 20 C	11 – 13 mm ² /s(cSt)
	Specific gravity at 15.6 / 15.6 C	1.092-1.097
	pH value...	6.0-7.5

The specification includes tests for miscibility with water, conductivity and a cold test at minus 40 C.

This product is a clear colorless liquid.

Uses: De-icing or defrosting propellers, wing and tail systems equipped with porous distributors.