SAFETY DATA SHEET

SECTION 1 : PRODUCT AND COMPANY IDENTIFICATION

Product Name :	Hand Sanitizer – Alcoholic
Company Name :	JVD Technologies (Asia) Pte Ltd
Address :	56 Loyang Way #06-04 Loyang Enterprise Building Singapore 508775
Telephone :	+65 6214 8550
Fax :	+65 6542 8533
Email :	jvdasia@singnet.com.sg

SECTION 2 : HAZARD IDENTIFICATION

Flammable liquids (Category 2)
Eye irritation (Category 2A)
Specific target organ toxicity – (inhalation, oral) single exposure (Category 3 Narcotic effects)

Signal word	Warning / Danger
Hazard statement(s)	
H225	highly flammable liquid and vapour
H319	Causes serious eye irritation
H332	Acute Toxicity
H336	May cause drowsiness or dizziness

Environmental Hazards
Not classified as an environmental hazard under GHS criteria

Precautionary statement(s)	
P210	Keep away from heat/sparks/open flames/hot surfaces - No smoking
P240	Ground/bond container and receiving equipment
P241	Use explosion-proof electrical/ventilating/lighting equipment
P242	Use only non-sparking tools
P243	Take precautionary measures against static discharge
P261	Avoid breathing dust/fume/gas/mist/vapours/spray
P264	Wash hands thoroughly after handling
P271	Use only outdoors or in a well-ventilated area
P280	Wear protective eye/face gloves/protective clothing
Response	
P303+P361+P353	If on Skin (or hair): Remove/take off immediately all contaminated clothing. Rinse skin with water/shower
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 doctor/physician if you feel unwell
P370+P378	In case of fire, use appropriate media to extinguish
P337+P340	If inhaled, remove person to fresh air and keep comfortable for breathing
Storage	
P235	Keep cool
P403+P233	Store in a well-ventilated place. Keep container tightly closed
P405	Store locked up

Disposal

P501	Dispose of contents and container to appropriate waste site or reclaimer in accordance with local and national regulations

Other Hazards Which Do Not Result in Classification
Vapours are heavier than air and may travel across the ground and reach remote ignition sources causing a flashback fire danger. Even with proper grounding and bonding, this material can still accumulate an electrostatic charge. If sufficient charge is allowed to accumulate, electrostatic discharge and ignition of flammable air-vapour mixtures can occur. Slightly irritating to respiratory system.

SECTION 3 : COMPOSITION OF INGREDIENT

Isopropyl alcohol	CAS 67-63-0 (minimum 70%)
Myo-inositol	CAS 87-89-8 (2% to 4%)
Polyacrylate crosspolymer-6 + 2-methylpropan-2-ol	EC 200-887-7 (approx. 0.5%)
Water (deionized and/or distilled)	Not required (balance)

Classification :
Flammable liquid 2 (H225)
Eye Irritation 2A (H319)
STOT SE3 (H336)

SECTION 4 : FIRST AID MEASURES

General advice
Not expected to be a health hazard when used under normal conditions.

If inhaled
If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

In case of skin contact
Remove contaminated clothing. Wash off with soap and plenty of water. Consult a physician.

In case of eye contact
Rinse thoroughly with plenty of water for at least 15 minutes. Remove contact lenses (if present) when it is easy to do so. Consult a physician.

If swallowed
Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water. If vomiting occurs spontaneously, keep head below hips to prevent aspiration.
Consult a physician.

Most important symptoms and effects, both acute and delayed
If material enters lungs, signs and symptoms may include coughing, choking, wheezing, difficulty in breathing, chest congestion, shortness of breath, and/or fever.
Eye irritation signs and symptoms may include a burning sensation, redness, swelling, and/or blurred vision.

When administering first aid, ensure that you are wearing the appropriate personal protective equipment according to the incident, injury and surroundings.
Potential for chemical pneumonitis. Call a doctor or poison control center for guidance.

SECTION 5 : FIRE FIGHTING MEASURES

Extinguishing media
Suitable extinguishing media
Use alcohol-resistant foam, water spray or fog. Dry chemical, carbon dioxide sand or earth may be used for small fires only.

Unsuitable extinguishing media
None

Specific extinguishing methods
Standard procedure for chemical fires
Clear fire area of all non-emergency personnel
Keep adjacent containers cool by spraying with water

Advice for firefighters
Proper protective equipment including chemical resistant gloves are to be worn; chemical resistant suit is indicated if large contact with spilled product is expected. Self-Contained Breathing Apparatus must be worn when approaching a fire in a confined space. Select fire fighter's clothing approved to relevant Standards (e.g. Europe: EN469).

SECTION 6 : ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures
Observe the relevant local and international regulations
Notify authorities if any exposure to the general public or the environment occurs or is likely to occur.
Local authorities should be advised if significant spillages cannot be contained.
The vapour is heavier than air, spreads along the ground and distant ignition is possible.
Vapour may form an explosive mixture with air.

Avoid contact with skin, eyes and clothing.
Isolate hazard area and deny entry to unnecessary or unprotected personnel.
Stay upwind and keep out of low areas.

Environmental precautions
Shut off leaks, if possible without personal risks. Remove all possible sources of ignition in the surrounding area. Use appropriate containment to avoid environmental contamination. Prevent from spreading or entering drains, ditches or rivers by using sand, earth, or other appropriate barriers.
Attempt to disperse the vapour or to direct its flow to safe location for example by using fog sprays.
Take precautionary measures against static discharge. Ensure electrical continuity by bonding and grounding (earthing) all equipment.
Ventilate contaminated area thoroughly.
Monitor area with combustible gas indicator

Methods and materials for containment and cleaning up
For large liquid spills (> 1 drum), transfer by mechanical means such as vacuum truck to a salvage tank for recovery or safe disposal. Do not flush away residues with water. Retain as contaminated waste. Allow residues to evaporate or soak up with an appropriate absorbent material and dispose of safely. Remove contaminated soil and dispose of safely.
For small liquid spills (< 1 drum), transfer by mechanical means to a labeled, sealable container for product recovery or safe disposal. Allow residues to evaporate or soak up with an appropriate absorbent material and dispose of safely. Remove contaminated soil and dispose of safely

SECTION 7 : HANDLING AND STORAGE

General Precautions
Avoid breathing of or direct contact with material. Only use in well ventilated areas. Wash thoroughly after handling.

Use the information in this data sheet as input to a risk assessment of local circumstances to help determine appropriate controls for safe handling, storage and disposal of this material.
Ensure that all local regulations regarding handling and storage facilities are followed.

Precautions for safe handling
Avoid contact with skin, eyes and clothing.
Use local exhaust ventilation if there is risk of inhalation of vapours, mists or aerosols.
Bulk storage tanks should be diked (bunded).
Extinguish any naked flames. Do not smoke. Remove ignition sources. Avoid sparks.
Electrostatic discharge may cause fire. Ensure electrical continuity by bonding and grounding (earthing) all equipment to reduce the risk.
The vapours in the head space of the storage vessel may lie in the flammable/explosive range and hence may be flammable.
Properly dispose of any contaminated rags or cleaning materials in order to prevent fires.
Do NOT use compressed air for filling, discharging, or handling operations.

Avoidance of contact
Strong oxidising agents.

Conditions for safe storage
The vapour is heavier than air. Beware of accumulation in pits and confined spaces.

Container Advice
Containers, even those that have been emptied, can contain explosive vapours. Do not cut, drill, grind, weld or perform similar operations on or near containers

SECTION 8 : EXPOSURE CONTROLS/PERSONAL PROTECTION/ ENGINEERING CONTROLS

Components	CAS-No.	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis
Isopropyl alcohol	67-63-0	PEL (long term)	400 ppm 983 mg/m3	SG PEL
		PEL (short term)	500 ppm 1,230 mg/m3	
		TWA	200 ppm	ACGIH
		STEL	400 ppm	ACGIH
		TWA	400 ppm, 980 mg/m3	OSHA Z-1

2-methylpropan-2-ol
STEL: 462 mg/m³ 15 minutes.
STEL: 150 ppm 15 minutes.
TWA: 308 mg/m³ 8 hours.
TWA: 100 ppm 8 hours.

DNEL Long term Inhalation 2,7 mg/m³ Workers Systemic
DNEL Short term Inhalation 214 mg/m³ Workers Systemic

Fresh water 6,64 mg/l Assessment Factors

Marine water 0,664 mg/l Assessment Factors

Sediment 5,8 mg/kg dwt Assessment Factors
Sewage Treatment Plant 690 mg/l Assessment Factors

Biological occupational exposure limits
No biological limit allocated.

Monitoring Methods
Monitoring of the concentration of substances in the breathing zone of workers or in the general workplace may be required to confirm compliance with an OEL and adequacy of exposure controls. For some substances biological monitoring may also be appropriate.
Validated exposure measurement methods should be applied by a competent person and samples analyzed by an accredited laboratory.

Examples of sources of recommended exposure measurement methods are given below or contact the supplier.
Further national methods may be available.
National Institute of Occupational Safety and Health (NIOSH), USA: Manual of Analytical Methods http://www.cdc.gov/niosh/
Occupational Safety and Health Administration (OSHA), USA: Sampling and Analytical Methods http://www.osha.gov/
Health and Safety Executive (HSE), UK: Methods for the Determination of Hazardous Substances http://www.hse.gov.uk/
Institut für Arbeitsschutz Deutschen Gesetzlichen Unfallversicherung (IFA), Germany http://www.dguv.de/inhalt/index.jsp
L'Institut National de Recherche et de Securité, (INRS), France http://www.inrs.fr/accueil

Engineering Measures
The level of protection and types of controls necessary will vary depending upon potential exposure conditions.

Select controls based on a risk assessment of local circumstances. Appropriate measures include:
Use sealed systems as far as possible.
Adequate explosion-proof ventilation to control airborne concentrations below the exposure guidelines/limits.
Local exhaust ventilation is recommended.
Firewater monitors and deluge systems are recommended.
Eye washes and showers for emergency use.
Where material is heated, sprayed or mist formed, there is greater potential for airborne concentrations to be generated.

General Information:
Always observe good personal hygiene measures, such as washing hands after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants. Discard contaminated clothing and footwear that cannot be cleaned. Practice good housekeeping.
Define procedures for safe handling and maintenance of controls.
Educate and train workers in the hazards and control measures relevant to normal activities associated with this product.
Ensure appropriate selection, testing and maintenance of equipment used to control exposure, e.g. personal protective equipment, local exhaust ventilation.
Drain down system prior to equipment break-in or maintenance.
Retain drain downs in sealed storage pending disposal or subsequent recycle.

Protective Measures
Personal protective equipment (PPE) should meet recommended national standards. Check with PPE suppliers.

Respiratory protection
If engineering controls do not maintain airborne concentrations to a level which is adequate to protect worker health, select respiratory protection equipment suitable for the specific conditions of use and meeting relevant legislation.
Check with respiratory protective equipment suppliers.
Where air-filtering respirators are unsuitable (e.g. airborne concentrations are high, risk of oxygen deficiency, confined space) use appropriate positive pressure breathing apparatus.
Where air-filtering respirators are suitable, select an appropriate combination of mask and filter.
If air-filtering respirators are suitable for conditions of use:
Select a filter suitable for organic gases and vapours [Type A boiling point >65°C (149°F)].

Hand Protection
Where hand contact with the product may occur the use of gloves approved to relevant standards (e.g. Europe: EN374, US: F739) made from the following materials may provide suitable chemical protection. Longer term protection: Butyl rubber. Nitrile rubber. Incidental contact/Splash protection: PVC or neoprene rubber gloves. For continuous contact we recommend gloves with breakthrough time of more than 240 minutes with preference for > 480 minutes where suitable gloves can be identified. For short-term/splash protection we recommend the same, but recognize that suitable gloves offering this level of protection may not be available and in this case a lower breakthrough time maybe acceptable so long as appropriate maintenance and replacement regimes are followed. Glove thickness is not a good predictor of glove resistance to a chemical as it is dependent on the exact composition of the glove material. Glove thickness should be typically greater than 0.35 mm depending on the glove make and model. Suitability and durability of a glove is dependent on usage, e.g. frequency and duration of contact, chemical resistance of glove material, dexterity. Always seek advice from glove suppliers. Contaminated gloves should be replaced. Personal hygiene is a key element of effective hand care. Gloves must only be worn on clean hands. After using gloves, hands should be washed and dried thoroughly. Application of a non-perfumed moisturizer is recommended

Eye Protection
Wear goggles for use against liquids and gas.
Wear full face shield if splashes are likely to occur.

Skin and body protection
Wear antistatic and flame retardant clothing if a local risk assessment deems it so.
Skin protection is not required under normal conditions of use.
For prolonged or repeated exposures use impervious clothing over parts of the body subject to exposure.
If repeated and/or prolonged skin exposure to the substance is likely, then wear suitable gloves tested to relevant Standard, and provide employee skin care programmes.

Thermal hazards
Not applicable

Hygiene measures
Wash hands before eating, drinking, smoking and using the toilet.
Launder contaminated clothing before re-use

Environmental Exposure controls
General advice
Local guidelines on emission limits for volatile substances must be observed for the discharge of exhaust air containing vapour. Minimise release to the environment. An environmental assessment must be made to ensure compliance with local environmental legislation.

SECTION 9 : PHYSICAL AND CHEMCIAL PROPERTIES

Appearance : Liquid

Colour : Clear
Odour : Characteristic
pH : Not applicable
Melting/Freezing point : -88°C
Boiling point/range : 82-83 °C
Flash point : 12 °C (Abel)
Evaporation rate : 1.5 (ASTM D3539)
Flammability : Not applicable
Upper/Lower explosion limit : 12% (Upper) / 2% (Lower)
Vapour pressure : 4.1 kPa (20 °C)
Density : approximately 0.9
Solubility : completely miscible in water and readily soluble in various organic solvents
Auto-ignition temperature : 425 °C
Decomposition temperature : Not applicable
Explosive/Oxidizing properties : Not classified / not applicable
Conductivity : Electrical conductivity: > 10,000 pS/m, not expected to be a static accumulator

---

SECTION 10 : STABILITY AND REACTIVITY

The product does not pose any further reactivity hazards in addition to those listed in the following sub-paragraph

No hazardous reaction is expected when handled and stored according to provisions

Reacts with strong oxidising agents

Materials to Avoid: Avoid heat, sparks, open flames and other ignition sources.
Prevent vapour accumulation.
In certain circumstances product can ignite due to static electricity.

Hazardous Decomposition Products: Thermal decomposition is highly dependent on conditions. A complex mixture of airborne solids, liquids and gases including carbon monoxide, carbon dioxide, sulphur oxides and unidentified organic compounds will be evolved when this material undergoes combustion or thermal or oxidative degradation.

SECTION 11 : TOXICOLOGICAL INFORMATION
Acute oral toxicity
LD50 Rat: > 5000 mg/kg
Remarks: Low toxicity:

Acute inhalation toxicity
Remarks: Low toxicity by inhalation

Acute dermal toxicity
LD50 Rabbit: > 5000 mg/kg
Remarks: Low toxicity

Not irritating to skin
Causes serious eye irritation
Not a sensitizer : Based on available data, the classification criteria are not met.
Not mutagenic.
Not a carcinogen

No carcinogenicity classification
IARC: Group 3: Not classifiable as to its carcinogenicity to humans

Does not impair fertility., Not a developmental toxicant., Based on available data, the classification criteria are not met.

May cause drowsiness and dizziness.
Kidney: caused kidney effects in male rats which are not considered relevant to humans
Aspiration into the lungs when swallowed or vomited may cause chemical pneumonitis which can be fatal.
Exposure may enhance the toxicity of other materials., Classifications by other authorities under varying regulatory frameworks may exist.

Polyacrylate crosspolymer-6 + 2-methylpropan-2-ol
Test Method : OCDE 471
Experiment : In vivo
Subject : Bacteria
Result : Negative

SECTION 12 : ECOLOGICAL INFORMATION

Toxicity to fish (Acute toxicity)
Toxicity to crustacean (Acute toxicity)
Toxicity to algae/aquatic plants (Acute toxicity)
Practically non toxic: LL/EL/IL50 > 100 mg/l

Toxicity to fish (Chronic toxicity)
Toxicity to crustacean (Chronic toxicity)
Data not available

Toxicity to microorganisms (Acute toxicity)
Practically non toxic: LL/EL/IL50 > 100 mg/l

Readily biodegradable., Oxidises rapidly by photo-chemical reactions in air.
Does not bioaccumulate significantly

Partition coefficient: n-octanol/water : log Pow: 0.05

Dissolves in water., If the product enters soil, one or more constituents will or may be mobile and may contaminate groundwater.

Does not have ozone depletion potential.

SECTION 13 : DISPOSAL CONSIDERATIONS

Recover or recycle if possible.
It is the responsibility of the waste generator to determine the toxicity and physical properties of the material generated to determine the proper waste classification and disposal methods in compliance with applicable regulations.

Do not dispose into the environment, in drains or in water courses
Waste product should not be allowed to contaminate soil or water.

Disposal should be in accordance with applicable regional, national, and local laws and regulations.
Local regulations may be more stringent than regional or national requirements and must be complied with.

Drain container thoroughly.
After draining, vent in a safe place away from sparks and fire. Residues may cause an explosion hazard.
Do not, puncture, cut, or weld uncleaned drums.
Send to drum recoverer or metal reclaimer.

SECTION 14 : TRANSPORT INFORMATION

UN No. 1219
Shipping Name. ISOPROPANOL
IMDG/IATA/ADR Class. 3
Packaging Group. II
Labels. 3
Hazchem Code. 3Y
Marine Pollutant/Environmentally Hazardous. NO

This product may be transported under nitrogen blanketing. Nitrogen is an odourless and invisible gas. Exposure to nitrogen enriched atmospheres displaces available oxygen which may cause asphyxiation or death. Personnel must observe strict safety precautions when involved with a confined space entry.

SECTION 15 : REGULATORY INFORMATION

Workplace Safety and Health Act & Workplace Safety and Health (General Provision) Regulations
This product is subject to the SDS, Labelling, PEL and other requirements in the Act/ Regulations.

Fire Safety Act and Fire Safety (Petroleum & Flammable Materials) Regulations
This product is subject to the requirements in the Act/ Regulations.

Maritime and Port Authority of Singapore (Dangerous Goods, Petroleum and Explosives) Regulations
This product is subject to the requirements in the Act/ Regulations

Environmental Protection and Management Act and Environmental Protection and Management (Hazardous Substances) Regulations
This product is not subject to the requirements in the Act/Regulations

SECTION 16 : OTHER INFORMATION

Sources of key data used to compile the Safety Data Sheet
The quoted data are from, but not limited to, one or more sources of information (e.g. toxicological data from Shell Health Services, material suppliers' data, CONCAWE, EU IUCLID date base, EC 1272 regulation, etc).

Dated : March 2020