SECTION 1 – IDENTIFICATION

Product Identifier: ANDE CHIP

Other Names: A-Chip, C19-Chip, F7-Chip, I-Chip

Manufacturer: ANDE Corporation
1860 Industrial Circle, Suite A
Longmont, CO 80501
U.S.A.
www.ANDE.com

Emergency Phone Number(s): (781) 916-8301

FAX: (781) 890-2560

Recommended Use / Restrictions: ANDE chips are to be used for identification purposes only by trained personnel.

SECTION 2: HAZARD(s) IDENTIFICATION

Hazard Classification:

Flammable Liquids, Category 2
Specific Target Organ Toxicity (Single Exposure), Category 2
Acute Toxicity-Oral, Category 4
Skin Irritation, Category 2
Serious Eye Damage/Irritation, Category 2A
Reproductive Toxicity, Category 1B
Specific Target Organ Toxicity (Single Exposure), Category 3, narcotic effect

Signal Word: DANGER

Hazard statement:

H225 – Highly flammable liquid and vapour.
H371 – May cause damage to organs.
H302 – Harmful if swallowed.
H315 – Causes skin irritation.
H319 – Causes serious eye irritation.
H335 – May cause respiratory irritation.
H336 – May cause drowsiness or dizziness.
H360D – May damage the unborn child.

Pictograms:

Precautionary Statements:

General

P101 – If medical advice is needed, have product container or label at hand.

P102 – Keep out of reach of children.

P103 – Read label before use.

Preventative

P201 – Obtain special instructions before use.

P202 – Do not handle until all safety precautions have been read and understood.

P210 – Keep away from heat/sparks/open flames/hot surfaces. — No smoking.

P233 – Keep container tightly closed.

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 gas/mist/vapours/spray.

P264 – Wash thoroughly after handling.

P270 – Do not eat, drink or smoke when using this product.

P271 – Use only outdoors or in a well-ventilated area.

P281 – Use personal protective equipment as required.

P280 – Wear protective gloves/protective clothing/eye protection/face protection.

Response

P301 + P312 – IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell.

P302 + P352 – IF ON SKIN: Wash with plenty of soap and water.

P303 + P361 + P353 – IF ON SKIN (or hair): Take off contaminated clothing and wash before reuse. Rinse skin with water/shower.

P304 + P340 – IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.

P305 + P351 + P338 – IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P307 + P311 – IF exposed: Call a POISON CENTER or doctor/physician.

P332 + P313 – If skin irritation occurs: Get medical advice/attention.

P337 + P313 – If eye irritation persists: Get medical advice/attention.

P370 + P378 – In case of fire: Use foam/water spray/fog for extinction.

Storage

P403 + P233 – Store in a well-ventilated place. Keep container tightly closed.

P403 + P235 – Store in a well-ventilated place. Keep cool.

P405 – Store locked up.

Disposal

P501 – Dispose of contents/container to in accordance with local, state and federal regulations.

Other Hazards:

Routes of Entry

Inhalation, ingestion, skin contact, skin absorption, contact with mucous membranes, eye contact

Target Organs

Gastrointestinal tract, liver, cardiovascular system, kidney, nerves, heart. Ethanol and 2-propanol can cause neurological impairment and toxicity. ANDE Chemical A (dust) may be toxic to respiratory system/ lungs. Ethanol targets nerves, liver, and heart. Formamide is toxic.

Medical Conditions Generally Aggravated by Exposure

Liver disease. Preexisting eye disorders. Kidney disorders. Skin disorders.

Note

Sieving Matrix, as provided, may contain trace amounts of non-polymerized acrylamide (CAS# 79-06-1), which is a neurotoxin. Please, refer to Sections 7 and 8, for safe handling and storage procedures and accidental exposure.

Unknown Toxicity Statement:

Not available.

SECTION 3: COMPOSITION / INFORMATION ON INGREDIENTS

Component	Chemical Name	Common Name	CAS	Percentage

WASH SOLUTION

2-Propanol	Isopropyl alcohol	67-63-0	20 – 25
Methanol	Methyl alcohol	67-56-1	1 – 3
Ethanol absolute	Ethyl alcohol	64-17-5	20 – 25
ETHANOL			
Ethanol	Ethyl alcohol	64-17-5	95 – 100 (v/v)
LYSIS SOLUTION			
Guanidine hydrochloride		50-01-1	20 – 60
1, 3 Propanediol, 2-amino-2-(hydroxyl Methyl)-, hydrochloride (1:1)	Tris-HCl	1185-53-1	0.1 – 5
Glycine, N,N'-1,2-ethanediylbis[N-(carboxymethyl)-, sodium salt (1:2)	EDTA	139-33-3	0.5 – 2
ELUTION SOLUTION			
1, 3 Propanediol, 2-amino-2-(hydroxyl Methyl)-, hydrochloride (1:1)	Tris-HCl	1185-53-1	0.1 – 0.2
Ethylenediamine tetraacetic acid tetrasodium salt dihydrate	EDTA tetrasodium salt	10378-23-1	< 0.05
FORMAMIDE			
Formamide		75-12-7	90 – 100
ELECTROPHORESIS BUFFER			
Tris (hydroxymethyl) aminomethane		77-86-1	5 – 20
TAPS, free acid		not listed	5 – 10
Glycine, N,N'-1,2-ethanediylbis[N-(carboxymethyl)-, sodium salt (1:2)	EDTA	6381-92-6	0.5 – 2
SIEVING MATRIX			
Polyacrylamide		9003-05-8	2 – 8
Urea		57-13-6	30 -60

	Tris (hydroxymethyl) aminomethane	77-86-1	1 – 10
	TAPS, free acid	not listed	0.5 – 5
	Glycine, N,N'-1,2-ethanediylbis[N-(carboxymethyl)-, sodium salt (1:2) EDTA	6381-92-6	0.5 – 2
**ANDE Chemical A*			
	ANDE Chemical A	NA	> 90 (v/v)
PCR REAGENT			
	Deoxyribose nucleotides mix	N/A	
	Potassium acetate	127-08-2	1 – 3
	Tris (hydroxymethyl) aminomethane	77-86-1	< 1
	DNA Polymerase	N/A	
	Magnesium acetate	142-72-3	< 1
ILS			
	DNA fragments, lyophilized	not listed	< 0.1
ALLELIC LADDER			
	DNA fragments	not listed	< 0.1

*Specific chemical identity of ANDE Chemical A withheld for trade secret purposes

SECTION 4: FIRST-AID MEASURES

General Information:

IF exposed or if you feel unwell: Call a POISON CENTER or doctor / physician. If unconscious place in recovery position and seek medical advice. Never give anything by mouth to an unconscious person or a person with cramps. Change contaminated, saturated clothing. Do not leave affected person unattended.

Inhalation: Call a POISON CENTER or doctor / physician**.** Remove casualty to fresh air and keep warm and at rest. If breathing is irregular or stopped, administer artificial respiration.

Skin Contact: Immediately wash skin with plenty of water and soap. Remove contaminated clothing and shoes. Get medical attention. Wash clothing before reuse. Clean shoes before reuse.

Eye Contact: Immediately flush eyes with plenty of flowing water for at least 15 minutes, holding eyelids apart. Consult an ophthalmologist. Protect uninjured eye. Remove contact lenses, if present and easy to do so. Continue rinsing.

Ingestion: If accidentally swallowed rinse mouth with plenty of water (only if the person is conscious) and obtain immediate medical attention. Do NOT induce vomiting. Give nothing to eat or drink. If vomiting occurs spontaneously, keep head below hips to prevent aspiration. Get immediate medical attention**.**

Acute Symptoms:

Inhalation: Respiratory tract irritation. Causes dizziness and drowsiness, central nervous system depression, coughing, shortness of breath, narcosis, and unconsciousness. Excessive inhalation of vapor parallel symptoms as described under ingestion.

Skin: Skin irritation, may include redness, itching, and pain. May be absorbed through skin and symptoms are similar to those observed after ingestion.

Eye: Eye irritation, may include a burning sensation, redness, itching, pain, swelling and/or blurred vision.

Ingestion: Toxic. May cause gastrointestinal irritation / disturbances. May include headache, drowsiness or dizziness, nausea, abdominal pain, vomiting, diarrhea, unconsciousness.

Delayed Effects:

May cause damage to nervous system, liver, kidney, heart. Repeated or prolonged skin contact may cause skin irritation and/or dermatitis and sensitization of susceptible persons.

Special Treatment:

First aider: Pay attention to self-protection!

SECTION 5: FIRE-FIGHTING MEASURES

Suitable Extinguishing Equipment:

Alcohol-resistant foam, dry chemical, or carbon dioxide may be used for small fires only. For large fires use large quantities of water and apply as mist or spray from as far as possible.

Unsuitable Extinguishing Equipment:

Not available.

Specific Hazards:

Pyrolysis products (toxic) may be liberated. A highly flammable liquid. May form flammable vapor mixture with air. KEEP AWAY FROM FLAMES, SPARKS, AND HOT SURFACES.

Special Fire Fighting Procedures:

Thermal decomposition can lead to release of irritating gases and vapors.
DO NOT fight fire when fire reaches explosives.

Combustion Products:

Burning can produce carbon monoxide and/or carbon dioxide, nitrogen oxides, hydrogen chloride, ammonia.

Protective Equipment:

Wear full protective gear / clothing and self-contained breathing apparatus.

Precautions:

Above the flash point, explosive vapor-air mixtures may be formed.
Do not allow run-off from fire-fighting to enter drains or water courses.
Do not inhale explosion and combustion gases.
Use caution when applying carbon dioxide in confined spaces. Carbon dioxide can displace oxygen.
Use water spray / stream to protect personnel and to cool endangered containers.
In case of fire: evacuate area.

NFPA Hazard Classification

Health: 2 Flammability: 3 Reactivity: 0

HMIS Hazard Classification

Health: 2* Flammability: 3 Reactivity: 0

SECTION 6: ACCIDENTAL RELEASE MEASURES

Personal Precautions, Protective Equipment, and Emergency Procedures:

Remove all sources of ignition. Use personal protection equipment. Special danger of slipping by leaking / spilling product. Avoid breathing dust, vapor or mist. Ensure adequate ventilation. In case of major fire and large quantities: Remove persons to safety. Wear a self-contained breathing apparatus and chemical protective clothing (see Section 8). Beware of accumulating, ignitable vapors in low lying areas. Avoid vapor accumulation above explosive concentrations (see Section 9 for lower and upper explosion limits in air). Take precautionary measure against static discharge. Ensure electrical continuity by bonding and grounding all equipment. Avoid dust formation.

Environmental Precautions:

Do not allow to enter into soil / subsoil. Do not allow to enter into surface water, drains or sewer system.

Containment and Cleanup Procedures:

Clean up spills immediately. Contain spill and collect with non-combustible absorbent material such as vermiculite or sand (DO NOT USE COMBUSTIBLE MATERIALS SUCH AS SAW DUST). Transfer to a suitable, labelled, sealable container for safe disposal according to Section 13, Disposal Considerations.

Dust: Clean up spills so that dried material does not disperse dust into the air. Prevent scattering of dust by moistening with water. Pick up spill with absorbing towels and dispose in closed hazardous waste container.

Spilled product must never be returned to the original container for recycling. Clean contaminated articles and floor according to the environmental legislation

Note: Use water spray to reduce any vapors or divert vapor cloud drift. Refer to protective measures listed in Sections 7 & 8.

SECTION 7: HANDLING AND STORAGE

Handling Precautions:

Highly flammable product. Avoid breathing dust, vapors and mist. Handle open containers with care in a well-ventilated area. Ensure that the workplace is adequately ventilated (local and/or general ventilation) such that the Occupational Exposure limits are not exceeded. Keep away from open flames, hot surfaces, sparks, ignition sources. Avoid build-up of electrostatic charge. Electrostatic charges may be generated during transfer. Electrostatic discharge may cause fire. Ensure electrical continuity by grounding all equipment. Flameproof equipment necessary in area where chemical is being used. Vapors may accumulate in low or confined areas. Handle in accordance with good industrial hygiene practice. Avoid contact with skin, eyes and clothing. Wash thoroughly after handling (before breaks and after work). DO NOT SMOKE. Do not eat or drink in the contaminated areas.

Storage Precautions:

Store in a cool (2-8 ºC), dry and well-ventilated area. Keep away from open flames, hot surfaces, sparks, ignition sources and other sources of heat. Keep container tightly closed. Keep / store only in original container. Protect containers from physical damage. Isolate from incompatible substances. Containers may be hazardous when empty as they retain material residues (liquid, dried liquid, dust). Observe all warnings and precautions for the product.

Refer to product label for adequate storage conditions.

Note: Ethanol is hygroscopic

SECTION 8: EXPOSURE CONTROLS / PERSONAL PROTECTION

Occupational Exposure Limits:

2-Propanol:	NIOSH, LTV = 980 mg/m^3 (400 ppm)
	NIOSH, STV = 1225 mg/m^3 (500 ppm)
	OSHA, LTV = 980 mg/m^3 (400 ppm)
Methanol:	NIOSH, LTV = 260 mg/m^3 (200 ppm)
	NIOSH, STV = 325 mg/m^3 (250 ppm)
	OSHA, LTV = 260 mg/m^3 (200 ppm)
Ethanol absolute:	NIOSH, LTV = 1900 mg/m^3 (1000 ppm)
	OSHA, LTV = 1900 mg/m^3 (1000 ppm)
	ACGIH, TLV = 1000 ppm
Formamide:	ACGIH, TLV = 10 ppm (skin)

Biological Monitoring:

Not available.

Engineering Controls:

Technical measures and the application of suitable work processes have priority overpersonal protective equipment.

Ensure that adequate ventilation is provided (local and/or general exhaust ventilation) or work in chemical fume hood. Maintain air concentrations below recommended exposure standards. Keep containers closed when not in use. Keep employee exposure to vapor as low as possible.

Provide shower and eyewash station (label its location conspicuously).

Personal Protective Equipment (PPE):

PPE – Eye / face:

Wear safety goggles or safety glasses with side shields.

PPE – Skin:

Wear long-sleeved clothing, laboratory coat, closed shoes, and suitable safety gloves. In case of wanting to use gloves again, clean them before taking off and air them well. Check leak tightness / impermeability prior to use.

PPE – Respiratory:

If work practices do not maintain airborne level below the exposure standard, use appropriate NIOSH approved respirator protection equipment. An organic vapor cartridge respirator with HEPA filter may be appropriate in certain circumstances.

Thermal Hazards:

Not applicable.

Work Hygiene Practices:

Handle in accordance with good industrial hygiene and safety practice. Ensure adequate ventilation.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

Physical State:	Liquid; Opaque cake (ANDE Chemical A; PCR Reagent; ILS; Allelic Ladder)
Color:	Clear, colorless
Odor:	Alcohol or Ammonia
Odor Threshold:	Not available
pH:	7-8 (Lysis Solution; Formamide); 6-8.5 (Electrophoresis Buffer); 6-9 (Sieving Matrix)
Melting / Freezing Point (°C):	-144 (Ethanol); 2-3 (Formamide)
Boiling Point / Range (°C):	82 (2-Propanol); 78-80 (Ethanol); 210 (Formamide)
Flash Point (°C):	12 (2-Propanol); 14 (Ethanol); 154, Open Cup (Formamide), 363 (ANDE Chemical A)
Evaporation Rate (Butyl acetate=1):	Not available
Flammability (solid, gas):	Highly flammable liquid and vapor; ANDE Chemical A (dust) may be combustible at high temperature
Upper Flammability Limit (% by Volume):	12 (2-Propanol); 19 (Ethanol)
Lower Flammability Limit (% by Volume):	2 (2-Propanol); 3.3 (Ethanol)
Vapor Pressure (hPa @ 20 °C):	59.5 (Ethanol); 1 mmHg @ 70.5 °C (Formamide)
Vapor Density (air = 1):	1.55 (Formamide)
Specific Gravity (H_2O=1 @ 20 °C):	0.79 (Ethanol); 1.13 (Formamide)
Solubility (g/L @ 20 °C):	Soluble
Partition Coefficient (n-octanol/water):	Not available
Auto-ignition Temperature (°C):	363 (Ethanol)
Decomposition Temperature:	Not available
Kinematic viscosity (mm^2/s @ 20 °C):	Not available

SECTION 10: STABILITY AND REACTIVITY

Reactivity:

Stable under recommended storage conditions. Formamide is moisture absorbent.

Chemical Stability:

Stable under normal conditions of use.

Hazardous Reactions:

Stable under normal conditions of use. Hazardous polymerization does not occur.

Conditions to Avoid:

Heat, sparks, flames and other ignition sources.

Incompatible Materials:

Oxidizing agents, alkali metals, halogenated compounds, acids, ammonia, peroxides, alkalines, iodine, pyridine, sulfur trioxide.

Formamide attacks copper, brass, lead, rubber.

Hazardous Decomposition Products:

Carbon monoxide (CO), Carbon dioxide (CO_2), Nitrogen oxides, Hydrogen chloride

Notes:

Ethanol vapors can form explosive mixture in air.

SECTION 11: TOXICOLOGY INFORMATION

Routes of Exposure:

Inhalation: Yes *Eye Contact:* Yes *Skin Contact:* Yes *Ingestion:* Yes

Symptoms:

Moderately irritating to eyes, skin and respiratory system.

Delayed and Immediate Effects:

Not available.

Chronic Effects:

Not available.

Toxicity (Measures):

Acute Oral Toxicity:

2-Propanol - LD_{50} Oral (rat) > 5045 mg/kg (RTECS)

2-Propanol - LD_{Lo} Oral (Human) > 3570 mg/kg (RTECS)

Methanol - LD_{50} Oral (rat) > 5628 mg/kg (IUCLID)

Metanol - LD_{Lo} Oral (Human) > 143 mg/kg (RTECS)

Ethanol - LD_{50} Oral (rat) > 6200 mg/kg (Merck KGaA)

Guanidine Hydrochloride - LD_{50} Oral (rat) = 475 mg/kg

Formamide - LD_{50} Oral (rat) = 5577 mg/kg

Urea - LD_{50} Oral (rat) = 8471 mg/kg

Acute Dermal Toxicity:

2-Propanol - LD_{50} Dermal (rabbit) > 12800 mg/kg (RTECS)

Methanol - LD_{50} Dermal (rabbit) > 15800 mg/kg

Ethanol - LD_{50} Dermal (rabbit) < 20000 mg/kg (CHP)

Urea - LD_{50} Oral (rat) = 8200 mg/kg

Acute Inhalation Toxicity:

2-Propanol - LC_{50} Inhalation (rat,) = 72600 mg/m^3 (Japan GHS Basis for Classification Data)

Methanol - TC_{Lo} Inhalation (Human, 4-hr) > 160 ppm

Ethanol - LC_{50} Inhalation (rat, 4-hr) < 8000 mg/l (CHP)

Ethanol - LC_{50} Inhalation (rat, 10-hr) =20000 ppm

Skin Corrosion/Irritation:

Ethanol - Irritating (24hr, Rabbit)

Guanidine Hydrochloride - Severe Irritating (500 mg/24-hr, Rabbit)

Serious Eye Damage/Irritation:

2-Propanol - Irritating (24hr, Rabbit)

Ethanol - Irritating (24hr, Rabbit)

Guanidine Hydrochloride - Moderate Irritating (81400 µg, Rabbit)

Respiratory Tract Irritation:

No data available.

Respiratory or Skin Sensitization:

No data available.

Germ Cell Mutagenicity:

Guanidine Hydrochloride - investigated as mutagen.

Formamide - investigated as a mutagen.

Carcinogenicity:

Ethanol is a confirmed animal carcinogen with unknown relevance to humans / primates. The chemical is carcinogenic at relatively high doses in animals that may not be relevant to a worker's exposure. Available data / evidence does not suggest that the chemical is likely to cause cancer in humans except under uncommon and unlikely routes or levels of exposure.

Ethanol carcinogenicity in mouse per oral exposure. Equivocal tumorigenic reagent by RTECS criteria. Liver: tumors; blood: lymphomas including Hodgkin's disease.

Formamide - investigated as a tumorigen.

Reproductive Toxicity:

Formamide - investigated as a reproductive effector. Known teratogenic effects in laboratory animals.

Specific Target Organ Toxicity (STOT), Single Exposure:

May cause drowsiness or dizziness.

Specific Target Organ Toxicity (STOT), Repeated Exposure:

No data available.

Aspiration Hazard:

No data available.

Listings:

National Toxicology Program: Not listed

International Agency for Research on Cancer: Not listed

OSHA: Not listed

SECTION 12: ECOLOGICAL INFORMATION

Ecotoxicity:

The environmental impact of this product has not been fully investigated.

Fish Toxicity:

2-Propanol - LC_{50} (96-hr) = 9640 mg/l (Brook, L.T., D.J. Call, D.L. Geiger, and C.E. Northcott 1984. Acute Toxicities of Organic Chemicals to Fathead Minnows (Pimephales promelas), Vol. 1. Center for Lake Superior Environmental Stud., Univ. of Wisconsin-Superior, Superior, WI:414)

Methanol - LC_{50} (96-hr) = 24000 mg/l (Poirier, S.H., M.L. Knuth, C.D. Anderson-Buchou, L.T. Brooke, A.R. Lima, and P.J. Shubat 1986. Comparative Toxicity of Methanol and N,N-

Dimethylformamide to Freshwater Fish and Invertebrates. Bull. Environ.Contam.Toxicol. 37(4):615-621)

Ethanol absolute - LC_{50} (96-hr) = 11000 mg/l (Bengtsson, B.E., L. Renberg, and M. Tarkpea 1984. Molecular Structure and Aquatic Toxicity – an Example with C1-C13 Aliphatic Alcohols. Chemosphere 13(5/6):613-622)

Ethanol - LC_{50} (96-hr, rainbow trout) = 10400 mg/l

Ethanol - LC_{50} (96-hr, fathead minnow) = 15,300 mg/l

Ethanol - LC_{50} (24-hr, other fish) = 10000 mg/l

Guanidine Hydrochloride - LC_{50} (48-hr, Leuciscus idus) = 1758 mg/l

EDTA - LC_{50} (96-hr, Bluegill) = 159 mg/l

Urea - LC_{50} (24-hr, fish) > 3810 mg/l

Daphnia Toxicity:

2-Propanol - (72-hr, water flea) = 6851 mg/l

2-Propanol - LC_{50} (48-hr) = 1400 mg/l (Blackman,R.A.A. 1974. Toxicity of Oil-Sinking Agents. Mar.Pollut.Bull. 5:11-118)

Methanol - LC_{50} (48-hr) = 3290 mg/l (Guilhermino, L.T. Diamantino, M.C. Silva, and A.M.V.M. Soares 2000. Acute Toxicity Test with Daphnia magna: An Alternative to Mammals in the Prescreening of Chemical Toxicity?. Ecotoxicol.Environ.Saf. 46(3):357-362)

Methanol - EC_{50} (48-hr) = 24500 mg/l (Randall, T.L., and P.V. Knopp 1980. Detoxification of Specific Organic Substances by Wet Oxidation. J. Water Pollut.Control Fed. 52(8):2117-2130)

Ethanol absolute - - LC_{50} (48-hr) = 9280 mg/l (Takahashi, I.T., U.M. Cowgill, and P.G. Murphy 1987. Comparison of Ethanol Toxicity to Daphnia magna and Ceriodaphnia dubia Tested at Two Different Temperatures: Static Acute Toxicity Test Results. Bull.Environ.Contam.Toxicol. 39(2):229-236)

Ethanol absolute - - EC_{50} (48-hr) = 9950 mg/l (Barera, Y., and W.J. Adams 1983. Resolving Some Practical Questions About Daphnia Acute Toxicity Tests. In: W.E. Bishop (Ed.), Aquatic Toxicology and Hazard Assessment, 66th Symposium, ASTM STP 802, Philadelphia,PA:509-518)

Ethanol - EC_{50} (48-hr, water flea) = 9.3 mg/l

Urea - EC_{50} (24-hr, Daphnia Magna) > 10,000 mg/l

Algae Toxicity:

2-Propanol - LC_{50} (72-hr, Green Algae) = 2000 mg/l

Bacteria Toxicity:

Urea - EC_{50} (5-min, Microtox) = 23914 mg/l

Persistence and Degradability:

No data available.

Bioaccumulative Potential:

Formamide: may leach into the groundwater upon release into soil. No significant bioaccumulation is expected. Upon release into air, rapid degradation is expected via hydroxyl radicals (photochemical reaction). Half-life in air is expected to be less than 1 day.

Mobility in Soil:

No data available.

Results of PBT/vPvB Assessment:

No data available.

Other Adverse Effects:

No data available.

SECTION 13: DISPOSAL CONSIDERATIONS

This material exhibits one or more characteristics of Hazardous Waste and needs to be disposed of in suitable, labeled containers, and managed in an appropriate way and an approved waste facility.

Dispose of contents/container in accordance with local, state and federal regulations (consult 40 CFR 261).

SECTION 14: TRANSPORTATION INFORMATION

U.S. Department of Transportation:

UN 1987, Alcohols, n.o.s. (Isopropanol / Ethanol Solution), 3, PG III, ERG 127

UN 1170, Ethanol, 3, PG II, ERG 127

LABEL STATEMENT: No marine pollutant, no poison inhalation hazard

Water Transportation:

UN 1987, ALCOHOLS, N.O.S. (Isopropanol / Ethanol Solution), 3, PG III, EmS: F-E, S-D

UN 1170, ETHANOL, 3, PG II, EmS: F-E, S-D

LABEL STATEMENT: No marine pollutant

Air Transportation:

UN 1987, Alcohols, n.o.s. (Isopropanol / Ethanol Solution), 3, PG III
UN 1170, Ethanol, 3, PG II

Note:

Based on quantity of material in Chip, package can be shipped as 'excepted quantity' (see 49 CFR 173.4a).

SECTION 15: REGULATORY INFORMATION

National Listings:

United States:

TSCA (Toxic Substance Control Act):

Chemical are listed on inventory or exempted as Research and Development Use Only per Section 5(h)(3), see 40 CFR 720.36.

CERCLA (Comprehensive Response Compensation, and Liability Act); see 40 CFR 122.221 and 40 CFR 122.42

CERCLA Reportable Quantity: Methanol - 5,000 lbs

SARA 311/312Hazards:

Acute Health Hazard:	Yes
Chronic Health Hazard:	Yes
Fire Hazard:	Yes
Sudden Release of Pressure Hazard:	No
Reactive Hazard:	No

SARA 313 (see 40 CFR Part 172):

Methanol, CAS # 67-56-1

State Listings:

California Prop. 65

This product contains chemicals listed in California Proposition 65:

Methanol, CAS # 67-56-1 (Developmental)

SECTION 16: OTHER INFORMATION

The SDS is a Hazard Communication tool and should be used to assist in the Risk Assessment. Many factors determine whether the reported Hazards are Risks in the workplace or other settings. Risks may be determined by reference to Exposure Scenarios. Scale of use, frequency of use and current or available engineering controls must be considered.

Classification of the preparation and its individual components has drawn on official sources as well as using available literature references.

Sources:

European Chemicals Agency, http://echa.europa.eu/
U.S. EPA – chemical database
Supplier SDS(s)

Definitions and Abbreviations:

ACGIH:	American Conference of Governmental Industrial Hygienists
BCF:	BioConcentration Factors
BEI:	Biological Exposure Index
DOT:	Department of Transportation
EPA:	Environmental Protection Agency
IARC:	International Agency for Research on Cancer
IATA:	International Air Transport Association
IDLH:	Immediately Dangerous to Life and Health Concentration
IMDG:	International Maritime Dangerous Goods
LOAEL:	Lowest Observed Adverse Effect Level
LTV:	Long Term Value
NIOSH:	National Institute for Occupational Safety and Health
NOAEL:	No Observed Adverse Effect Level
NTP:	National Toxicology Program
OSHA:	Occupational Safety & Health Administration
PBT:	Persistent, Bioaccumulative and Toxic
PEL:	Permissible Exposure Limit
STEL:	Short-term Exposure Limit
STV:	Short Term Value
TEEL:	Temporary Emergency Exposure Limit
TLV:	Threshold Limit Value
vPvB:	very Persistent, very Bioaccumulative

Version Control:

Version	Date	Author	Description
Initial:	060118	Calvin Patten	Incorporate Component SDSs into one SDS.

DISCLAIMER

This material, as supplied, may be toxic if not handled appropriately.
Refer to sections 3. Hazard Identification, 7. Handling and Storage, 8. Exposure Controls / Personal Protection.

The material, as supplied, should be treated as hazardous waste for disposal. Refer to section 13. Disposal Considerations.

Consult the appropriate state, regional, or local regulations for additional requirements.

The above information is believed to be correct but may not be all inclusive.

The information shall be used as guidance only.

All information is based on present state of ANDE's knowledge and is applicable under appropriate safety precautions.

The information is not a guarantee of the properties of the product.

In no case, shall ANDE be held liable for damage resulting from handling and/or from contact to this product.

-END OF DOCUMENT -