

## SAFETY DATA SHEET

### SECTION 1 – IDENTIFICATION

Manufacturer's name and address:



K-FLEX USA  
100 Nomaco Drive  
Youngsville, NC 27596  
USA

Supplier's name and address:

Refer to Manufacturer

Information Telephone No. : (800) 765-6475  
Website Address : <http://www.kflexusa.com>  
24 Hr Emergency Telephone # : CHEM-TREC: 1-800-424-9300  
Product Identifier : **KFLEX® 320 Adhesive**  
Chemical Name : N/Ap                      Chemical Family : Mixture  
Chemical Formula : N/Ap                      Trade Name/Synonyms : K-FLEX 320  
Molecular Weight : N/Ap                      Material Use : Neoprene contact adhesive.

### SECTION 2 – HAZARDS IDENTIFICATION

#### GHS Classification per 29CFR 1910 (OSHA Hazard Communication Standard)

Flammable liquids; Category 2  
Aspiration hazard; Category 1  
Skin corrosion/irritation; Category 2  
Serious eye damage/eye irritation; Category 2A  
Sensitization, Skin; Category 1  
Specific target organ toxicity, single exposure; Narcotic effects; Category 3  
Reproductive toxicity; Category 2  
Specific target organ toxicity, repeated exposure; Category 2  
Hazardous to the aquatic environment, long-term hazard, Category 2

#### WHMIS Classification

Class B2 — Flammable Liquid;  
Class D2A (Materials Causing Other Toxic Effects, Very Toxic Material);  
Class D2B (Materials Causing Other Toxic Effects, Toxic Material).

#### GHS Pictograms



#### Signal Word

Danger

#### Hazard Statements

Highly flammable liquid and vapor.  
May be fatal if swallowed and enters airways.  
Causes skin and serious eye irritation.  
May cause an allergic skin reaction.  
May cause drowsiness or dizziness.  
Suspected of damaging fertility or the unborn child.  
May cause damage to organs <Central nervous system, kidneys, liver>  
through prolonged or repeated exposure.

Toxic to aquatic life with long lasting effects.

**Precautionary Statements**

Obtain special instructions before use. (See Section 7.) Do not handle until all safety precautions have been read and understood. Keep away from heat/sparks/open flames/hot surfaces. — No smoking. Keep container tightly closed. Ground/bond container and receiving equipment. Use explosion-proof electrical/ventilating/lighting/.../equipment. Use only non-sparking tools. Take precautionary measures against static discharge. In case of fire: Use fire extinguishers suitable for Classes B, C, or E for extinction. Do not breathe vapors. Use only outdoors or in a well-ventilated area. Wear protective gloves/protective clothing/eye protection. Wash hands and exposed skin thoroughly after handling. Wash contaminated clothing before reuse. Avoid release to the environment. Collect spillage. Hazardous to the aquatic environment. Store in a well-ventilated place. Keep cool. Store locked up. Dispose of contents / container in accordance with federal, state, and local laws. Do not allow product to enter drains.

**Hazards Not Otherwise Classified**

Vapor may cause flash fire! May be an aspiration hazard.

**% With Unknown Acute Toxicity** : 6% by weight of this product is comprised of ingredients with unknown acute toxicity.

**HMIS Rating** : \* - Chronic Hazard 0 - Minimal 1 – Slight 2 – Moderate 3 – Serious 4 – Severe  
*Health: \*2 Flammability 3 Reactivity 0*

**SECTION 3 – COMPOSITION/INFORMATION ON INGREDIENTS**

Ingredients	CAS #	% (by weight)
Acetone	67-64-1	30.00 – 60.00
Hexanes	110-54-3	10.00 – 30.00
Toluene	108-88-3	10.00 – 30.00
Phenolic resin	25085-50-1	5.00 – 10.00

The exact percentages of the ingredients have been withheld by the manufacturer as trade secrets.

**SECTION 4 – FIRST AID MEASURES**

- General** : IF exposed or concerned: Get medical advice/attention.
- Inhalation** : Remove victim to fresh air and keep at rest in a position comfortable for breathing. If experiencing respiratory symptoms: call a doctor/physician.
- Skin contact** : Remove/Take off immediately all contaminated clothing. Flush affected skin with gently flowing lukewarm water for at least 20 minutes. Seek immediate medical attention/advice.
- Eye contact** : Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical advice/attention.
- Ingestion** : Rinse mouth. Do NOT induce vomiting. Call a POISON CENTER or doctor/physician if you feel unwell.
- Notes for Physician** : Treat symptomatically.
- Signs and symptoms of short-term (acute) exposure**  
*Inhalation* : May cause irritation to the nose, throat, and respiratory tract. Inhalation of high concentrations may cause CNS effects such as nausea, headache, dizziness, fatigue, unconsciousness, and coma. May cause motor incoordination and speech abnormalities. Breathing high concentrations of this material, for example in an enclosed space or by intentional abuse, can cause irregular heartbeats which can cause death.

- Skin* : May cause moderate skin irritation. Product may be absorbed through the skin, producing effects similar to inhalation or ingestion. Allergic skin reaction: Symptoms may include redness, swelling, blistering, and itching.
- Eyes* : Direct contact will cause moderate to severe irritation to the eyes. Symptoms may include redness, swelling, pain, tearing, and blurred or hazy vision.
- Ingestion* : May cause irritation to the mouth, throat, and stomach. Symptoms may include abdominal pain, nausea, vomiting, and diarrhea. This material can get into the lungs (aspiration) during swallowing or vomiting. Small amounts in the lungs can cause chemical pneumonitis, possibly leading to chronic lung dysfunction or death.

**Effects of long-term (chronic) exposure**

- : Chronic exposure may cause drying, cracking, and defatting of the skin. Chronic effects of ingestion and subsequent aspiration into the lungs may cause pneumatocele (lung cavity) formation and chronic lung dysfunction. Prolonged occupational overexposure to solvents may cause irreversible brain and nervous system damage (sometimes referred to as "Solvent or Painter's Syndrome"). Intentional misuse by intentionally concentrating and inhaling the vapors from this product may be harmful or fatal. Toluene, a component of this product, may cause harm to the human fetus, based on tests with laboratory animals. Long term overexposure to Toluene has been associated with peripheral neuropathy (damage to the nerves of the hands and feet), liver effects, kidney effects, impaired color vision and hearing damage.

**Indication of need for immediate medical attention or special treatment**

- : Difficulty breathing persists after removing the person to fresh air.  
Any exposure to the eye which causes irritation.  
Ingestion.

## SECTION 5 – FIRE FIGHTING MEASURES

- Suitable extinguishing media** : Carbon dioxide, dry chemical powder, appropriate foam or water fog.
- Unsuitable extinguishing media** : water jet
- Hazardous combustion products** : Carbon oxides; Hydrocarbons; Aldehydes; Hydrogen chloride gas; other unidentified organic compounds.

**Special fire-fighting procedures/equipment**

- : Firefighters should wear proper protective equipment and self-contained breathing apparatus with full face piece operated in positive pressure mode. Move containers from fire area if safe to do so. Water spray may be useful in cooling equipment exposed to heat and flame. After fires have been extinguished, carefully clean all equipment and surfaces exposed to fumes.

- Environmental precautions** : Avoid release to the environment. Collect spillage. Hazardous to the aquatic environment. Do not allow material to enter drains or contaminate ground water system.

**Fire hazards/conditions of flammability**

- : Highly flammable liquid. Closed containers may rupture if exposed to excess heat or flame due to a build-up of internal pressure. Vapors may be heavier than air and may collect in confined and low-lying areas. Vapor can travel considerable distance and flashback to a source of ignition. Material will float on water and can be re-ignited at the water's surface. Static discharge may ignite this product's vapors.

**Flammability classification (OSHA 29 CFR 1910.1200)**

- : Flammable Liquid, Category 2.

**Flammability classification (WHMIS)**

- : Flammable Liquid Class B2.

**Flammability classification (NFPA)**

- : Flammable Liquid Class 1B.

## SECTION 6 – ACCIDENTAL RELEASE MEASURES

- Personal precautions** : Restrict access to area until completion of clean-up. All persons dealing with clean-up should wear the appropriate chemically protective equipment. Refer to Section 8 on this Safety Data Sheet, EXPOSURE CONTROLS / PERSONAL PROTECTION, for additional information on acceptable personal protective equipment.
- Environmental precautions** : Avoid release to the environment. Collect spillage. Hazardous to the aquatic environment. Do not allow product to enter waterways. Do not allow material to contaminate ground water system.
- Spill response / clean-up** : Ventilate area of release. Eliminate all ignition sources. Stop spill or leak at source if safely possible. Use non-sparking tools to contain and absorb spilled liquid with non-combustible, inert absorbent material (e.g., sand), then place absorbent material into a container for later disposal (see Section 13). Do not flush into surface water or sanitary sewer system. Notify the appropriate authorities as required.
- Incompatible materials** : See Section 10.
- Special spill response procedures** : If a spill/release in excess of the EPA reportable quantity is made into the environment, immediately notify the national response center in the United States (phone: 1-800-424-8002).  
US CERCLA Reportable quantity (RQ):Hexane (5000 lbs / 2270 kg); Acetone (5000 lbs / 2270 kg); Toluene (1000 lbs / 454 kg).

## SECTION 7 – HANDLING AND STORAGE

- Special Instructions** : HIGHLY FLAMMABLE LIQUID AND VAPOR. May cause flash fire. Keep away from fire, sources of heat, or sources of electrical discharges. Aspiration Hazard – may enter lungs and cause damage. If ingested, do not induce vomiting. Inhaling fumes may cause dizziness, drowsiness, nausea, headaches, and/or other Central Nervous System (CNS) symptoms. Contains a material that may cause peripheral nervous system damage. Breathing high concentrations can cause irregular heartbeats which may be fatal. Developmental hazard - Contains Toluene, which may cause birth defects or other reproductive harm. Avoid breathing vapors.
- Safe handling procedures** : Wear chemically resistant protective equipment during handling. Use in a well-ventilated area. Training the workers on the potential health hazards associated with product vapor is important. Do not breathe vapors. Avoid contact with skin, eyes and clothing. Keep away from heat and sources of ignition. Keep away from oxidizing materials. Keep containers tightly closed when not in use. Wash hands and exposed skin thoroughly after handling. Containers of this material may be hazardous when empty, since they retain product residues (vapors, liquid).
- Storage requirements** : Store in a cool, dry, well-ventilated area. No smoking in the area. Do not store near any incompatible materials (see Section 10). Storage area should be clearly identified, clear of obstruction and accessible only to trained and authorized personnel. Protect against physical damage.
- Incompatible materials** : See Section 10.
- Special packaging materials** : Always keep in containers made of the same materials as the supply container.

## SECTION 8 – EXPOSURE CONTROLS AND PERSONAL PROTECTION

- Permissible exposure levels** : No exposure limits have been established for the product itself. Below are exposure limits for the components in the product.

Ingredients	CAS #	ACGIH TLV		OSHA PEL	
		TWA	STEL	PEL	STEL
Acetone	67-64-1	500 ppm	750 ppm	1000 ppm TWA 2400 mg/m <sup>3</sup> TWA	N/Av
Hexanes	110-54-3	50 ppm	N/Av	500 ppm 1800 mg/m <sup>3</sup>	N/Av
Toluene	108-88-3	20 ppm	N/Av	200 ppm	300 ppm (10 min)
p-tert-Butylphenol formaldehyde resin	25085-50-1	N/Av	N/Av	N/Av	N/Av

#### Ventilation and engineering measures

: Use with adequate ventilation. Provide adequate cross air circulation. Use explosion-proof general or local exhaust ventilation to maintain air concentrations below recommended exposure limits.

#### Respiratory protection

: Respiratory protection is required if the concentrations exceed the TLV. If the TLV is exceeded, wear a NIOSH/MSHA-approved respirator with organic vapor cartridges.

#### Skin protection

: Impervious gloves must be worn when using this product. Glove materials such as nitrile rubber or Viton (fluorocarbon rubber) are recommended. Advice should be sought from glove suppliers regarding the glove's breakthrough time for the ingredients listed in Section 3.

#### Eye / face protection

: Chemical goggles are recommended. A full face shield may also be necessary.

#### Other protective equipment

: Full chemical-resistant protective clothing should be used whenever splashing is anticipated. An eyewash station and safety shower should be made available in the immediate working area.

#### General hygiene considerations

: Avoid contact with eyes, skin and clothing. Do not breathe vapors. Do not eat, drink or smoke when using this product. Clean all equipment and clothing, and shower with mild soap and water at end of each work shift.

## SECTION 9 – PHYSICAL AND CHEMICAL PROPERTIES

<b>Physical state</b>	: liquid	<b>Appearance</b>	: amber liquid.
<b>Odor</b>	: Characteristic solvent odor		
<b>Odor threshold</b>	: N/Av	<b>pH</b>	: N/Av
<b>Specific gravity</b>	: 0.83	<b>Boiling point</b>	: > 133°F (>56.5°C)
<b>Coefficient of water/oil distribution</b>	: N/Av	<b>Melting/Freezing point</b>	: N/Av
<b>Solubility in water</b>	: negligible	<b>Vapor pressure (mm Hg @ 20°C / 68°F)</b>	: 180
<b>Evaporation rate (n-Butyl acetate = 1)</b>	: N/Av	<b>Vapor density (Air = 1)</b>	: N/Av
<b>Volatiles (% by weight)</b>	: 80 – 82	<b>General information</b>	: N/Av
<b>Volatile organic compounds (VOCs)</b>	: 615 g/L (Calculated, SCAQMD Rule 1168)		
<b>Particle size</b>	: N/Av	<b>Flammability classification (GHS)</b>	: Flammable Liquid Cat. 2
<b>Flash point</b>	: -15°F (-26°C)	<b>Lower flammable limit (% by vol)</b>	: Not available
<b>Flash point method</b>	: Setflash closed	<b>Upper flammable limit (% by vol)</b>	: Not available
<b>Auto-ignition temperature</b>	: N/Av	<b>Decomposition temperature</b>	: Not available
<b>Viscosity</b>	: Not available	<b>Oxidizing properties</b>	: Not available
<b>Explosion data: Sensitivity to mechanical impact / static discharge</b>			
			: Static discharge could ignite the vapors of this product. Not expected to be sensitive to mechanical impact.

## SECTION 10 – REACTIVITY AND STABILITY INFORMATION

<b>Stability and reactivity</b>	: Stable under the recommended storage and handling conditions prescribed.
<b>Hazardous polymerization</b>	: Hazardous polymerization does not occur.

**Conditions to avoid** : Keep this product away from heat, sparks, flame, and other sources of ignition (e.g., pilot lights, electric motors, static electricity).

**Materials to avoid and incompatibility**

: Strong oxidizing agents; Reducing agents; Acids, Bases.

**Hazardous decomposition products**

: None known, refer to hazardous combustion products in Section 5.

**SECTION 11 – TOXICOLOGICAL INFORMATION**

**Target organs** : Central Nervous System (CNS); Eyes; Skin; Kidneys; Lungs; Liver; Heart.

**Routes of Exposure** : *Inhalation*: YES *Skin Absorption*: YES *Skin and Eyes*: YES *Ingestion*: YES

**Toxicological data** : See below for individual ingredient acute toxicity data.

Ingredients		LC50 (4 hr) Inhalation, rat, mg/L	LD50	
			Oral, rat, mg/kg	Dermal, rabbit, mg/kg
Acetone	67-64-1	50.1	5800	20000
Hexane	110-54-3	31.86	16000	> 2000
Toluene	108-88-3	28.1	5580	> 5000
p-tert-Butylphenol formaldehyde resin	25085-50-1	N/Av	N/Av	N/Av

**Calculated Acute Toxicity Estimates for the Product**

*Inhalation* : > 35 mg/L  
*Oral* : > 8000 mg/kg  
*Dermal* : > 5000 mg/kg

**Carcinogenic status** : No components are listed as carcinogens by ACGIH, IARC, OSHA or NTP.

**Reproductive effects** : Contains Toluene. Toluene may cause fetotoxic effects at doses which are not maternally toxic, based on animal data.

**Germ Cell Mutagenicity** :

Mutagenicity Test	Acetone	Hexane	Toluene
Ames Test	N/Av	Negative	N/Av
Dominant Lethal Assay, mouse, male Exposure: Inhalation 6h/d, 5 d/wk for 8 wks	N/Av	Negative	Negative
Mammalian cell gene mutation assay, mouse lymphoma cells	N/Av	N/Av	Negative
Chromosome aberration assay in vivo, rat bone marrow, Intraperitoneal	N/Av	N/Av	Negative
Germ Cell Mutagenicity Assessment	N/Av	Not Mutagenic	Not Mutagenic

**Epidemiology** : Not available.

**Sensitization to material** : This product contains a component known to cause allergic skin sensitization reactions.

**Synergistic materials** : N/Av

**Irritancy** : Severe eye irritant. Moderate irritant for respiratory system and skin.

**Other important hazards** : See Section 2 for additional information.

**SECTION 12 – ECOLOGICAL INFORMATION**

**Environmental effects** : The product should not be allowed to enter drains or water courses, or be deposited where it can affect ground or surface waters. Avoid release to the environment. Collect spillage. Hazardous to the aquatic environment.



**Important environmental characteristics**

	: No data is available on the product itself.
<b>Ecotoxicological</b>	: No data is available on the product itself.
<b>Ecotoxicity</b>	: Both Toluene and Hexane have been assessed to be toxic to aquatic life. Hexane has been assessed to be toxic to aquatic life with long lasting effects. Acetone is not expected to be toxic to aquatic life. Acetone's LC50/96-hour test results are > 100 mg/L.
<b>Component</b>	: <b>Toluene</b>
Toxicity to fish	: 96 h LC50 (Oncorhynchus kisutch (coho salmon)): 5.5 mg/L
Toxicity to invertebrates	: 48 h EC50 (Ceriodaphnia dubia): 3.78 mg/L
Toxicity to algae	: 3 h EC50 (Chlorella vulgaris (Fresh water algae)): 134 mg/L
Toxicity to bacteria	: 24 h IC50 (Bacteria): 84 mg/L
<b>Component</b>	: <b>Hexane</b>
Toxicity to fish	: 96 h LC50 (Pimephales promelas (fathead minnow)): 2.5 mg/L
Toxicity to invertebrates	: 48 h EC50 (Daphnia magna (water flea)): 2.1 mg/L
Toxicity to algae	: 72 h EbL50 (Pseudokirchneriella subcapitata (green algae)): 26 mg/L
<b>Biodegradability</b>	: Acetone : N/Av Readily biodegradable
	: Hexane : 83 % Readily biodegradable
	: Toluene : 100% Readily biodegradable
<b>Bioaccumulative potential</b>	: Acetone : Not expected to bioaccumulate.
	: Hexane : log Pow: 3.90 – 4.11
	: Toluene : log Pow: 2.73
<b>Mobility in soil</b>	: No data available.
<b>PBT and vPvB assessment</b>	: No data available.
<b>Other adverse effects</b>	: No data available.

**SECTION 13 – DISPOSAL CONSIDERATION**

<b>Handling for disposal</b>	: Handle waste according to recommendations in Section 7. Empty containers retain residue (liquid and/or vapor) and can be dangerous. Do not cut, weld, drill or grind on or near this container.
<b>Methods of disposal</b>	: Dispose in accordance with all applicable federal, state, provincial and local regulations. Contact your local, state, provincial or federal environmental agency for specific rules.
<b>RCRA</b>	: If this product, as supplied, becomes a waste in the United States, it may meet the criteria of a hazardous waste as defined under RCRA, Title 40 CFR 261. It is the responsibility of the waste generator to determine the proper waste identification and disposal method. For disposal of unused or waste material, check with local, state and federal environmental agencies.

**SECTION 14 – TRANSPORTATION INFORMATION**

Regulatory Information	UN Number	Shipping Name	Class	Packing Group	Label
TDG	UN 1133	ADHESIVES containing flammable liquid (Acetone, Hexane)	3	II	
TDG Additional Information	May be shipped as Limited Quantity when transported in containers no larger than 5.0 Litres; in packages not exceeding 30 kg gross mass. Refer to TDG Part 1: 1.11, 1.17, 1.33; and Schedule 1.				
49 CFR/DOT	UN 1133	ADHESIVES containing flammable liquid (Acetone, Hexane)	3	II	
49 CFR/DOT Additional Information	May be shipped as Limited Quantity when transported in containers no larger than 5.0 Litres; in packages not exceeding 30 kg gross mass. Refer to 49 CFR 173.150(b) and Special Provision 149.				

**SECTION 15 – REGULATORY INFORMATION**

**Canadian Information:**

Canadian WHMIS Classification: This product is a WHMIS Controlled Product. It meets one or more of the criteria for a controlled product provided in Part IV of the Controlled Products Regulations (CPR). Refer to Section 2 for a WHMIS Classification for this product.

This product has been classified according to the hazard criteria of the CPR and the MSDS contains all of the information required by the CPR.

Canadian Environmental Protection Act (CEPA) information: All ingredients listed appear on the Domestic Substances List (DSL). The following components are listed on the Canadian Ingredient Disclosure List (IDL): Acetone, Hexane, Toluene.

**US Federal Information:**

TSCA: All listed ingredients appear on the Toxic Substances Control Act (TSCA) inventory.

CERCLA Reportable Quantity (RQ) (40 CFR 117.302): Hexane (5000 lbs / 2270 kg); Acetone (5000 lbs / 2270 kg); Toluene (1000 lbs / 454 kg).

SARA TITLE III: Sec. 302, Extremely Hazardous Substances, 40 CFR 355: No Extremely Hazardous Substances are present in this material.

SARA TITLE III: Sec. 311 and 312, MSDS Requirements, 40 CFR 370 Hazard Classes:

- Acute hazard
- Chronic hazard.

SARA TITLE III: Sec. 313, Toxic Chemicals Notification, 40 CFR 372: This product may be subject to SARA notification requirements, since it contains Toxic Chemical constituents above de minimus concentrations. This product contains: Hexane; Toluene.

**U.S. State Right To Know Laws**

California Proposition 65: Warning! This product contains a chemical known to the State of California to cause developmental harm. This product contains: Toluene.

**Other State Right to Know Laws:**

On State RTK List?	CAS No.	CA	MA	MN	NJ	NY	PA	RI
Acetone	67-64-1	YES	YES	YES	YES	YES	YES	YES
Hexane	110-54-3	YES	YES	YES	YES	YES	YES	YES
Toluene	108-88-3	YES	YES	YES	YES	YES	YES	YES

**SECTION 16 – OTHER INFORMATION**

**Legend**

- : ACGIH: American Conference of Governmental Industrial Hygienists
- CAS: Chemical Abstract Services
- CERCLA: Comprehensive Environmental Response, Compensation, and Liability Act of 1980
- CFR: Code of Federal Regulations
- CNS: Central Nervous System
- DOT: Department of Transportation
- DSL: Domestic Substances List
- EPA: Environmental Protection Agency
- GHS: Globally Harmonized System
- IARC: International Agency for Research on Cancer
- IDL: Ingredient Disclosure List
- Inh: Inhalation
- N/Av: Not Available
- N/Ap: Not Applicable
- NIOSH: National Institute of Occupational Safety and Health
- NTP: National Toxicology Program
- OSHA: Occupational Safety and Health Administration
- PEL: Permissible exposure limit
- RCRA: Resource Conservation and Recovery Act
- SARA: Superfund Amendments and Reauthorization Act



STEL: Short Term Exposure Limit  
TDG: Canadian Transportation of Dangerous Goods Act & Regulations  
TLV: Threshold Limit Values  
TSCA: Toxic Substance Control Act  
TWA: Time Weighted Average  
WHMIS: Workplace Hazardous Materials Identification System

#### **Disclaimer of Liability**

The Information presented herein is supplied as a guide to those who handle or use this product and has been prepared in good faith by technically knowledgeable personnel. It is not intended to be all-inclusive. The manner and conditions of use and handling may involve other and additional considerations. Safe work practices must be employed when working with any materials. It is important that the end user makes a determination regarding the adequacy of the safety procedures employed during the use of this product.

No warranty of any kind is given or implied. K-FLEX USA will not be liable for any damages, losses, injuries or consequential damages which may result from the use or reliance on any information contained herein. This Safety Data Sheet is valid for three (3) years.

#### **Prepared By:**

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Visit our Website at

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**End of Document**