

NARK2005 Duquenois-Levine Reagent Safety Data Sheet according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Revision date: 05/01/2023 Supersedes: 09/16/2022

SECTION 1: Identification	
1.1. Identification	
Product form	: Mixture
Product name	: NARK2005 Duquenois-Levine Reagent
Product code	: NARK2005
1.2. Recommended use and restrict	ions on use
Use of the substance/mixture	: Crime Scene Investigation
1.3. Supplier	
SIRCHIE 100 Hunter Place Youngsville, NC 27596 - USA T 919-554-2244; 800-356-7311 - F 919-554 http://www.sirchie.com	-2266; 800-899-8181
1.4. Emergency telephone number	
Emergency number	: 1.800.424.9300 (USA) +1-703-527-3887 (INTL) CHEMTREC: 1.800.424.9300
SECTION 2: Hazard(s) identificati	
2.1. Classification of the substance	or mixture
GHS US classification	
Flammable liquids Category 1 Acute toxicity (oral) Category 4 Acute toxicity (inhalation:dust,mist) Category Skin corrosion/irritation Category 1 Carcinogenicity Category 2	H314 Causes severe skin burns and eye damage H351 Suspected of causing cancer (Inhalation, oral)
	sure) Category 2 H373 May cause damage to organs through prolonged or repeated exposure
Full text of H statements : see section 16	
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P301+P330+P331 - If swallowed: rinse mouth. Do NOT induce vomiting. P303+P361+P353 - If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower P304+P340 - If inhaled: Remove person to fresh air and keep 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.

P308+P313 - If exposed or concerned: Get medical advice/attention.

P310 - Immediately call a doctor.

P312 - Call a poison center or doctor if you feel unwell.

P314 - Get medical advice/attention if you feel unwell.

P321 - Specific treatment (see supplemental first aid instruction on this label).

P330 - Rinse mouth.

P363 - Wash contaminated clothing before reuse.

P370+P378 - In case of fire: Use media other than water to extinguish.

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

P405 - Store locked up.

P501 - Dispose of contents/container to hazardous or special waste collection point, in accordance with local, regional, national and/or international regulation.

Other hazards which do not result in classification 2.3.

No additional information available

2.4. Unknown acute toxicity (GHS US)

Not applicable

SECTION 3: Composition/Information on ingredients

Substances 3.1.

Not applicable

3.2. **Mixtures**

Name	Product identifier	%	GHS US classification
chloroform	(CAS-No.) 67-66-3	> 41.58	Acute Tox. 4 (Oral), H302 Acute Tox. 3 (Inhalation), H331 Skin Irrit. 2, H315 Eye Irrit. 2, H319 Carc. 2, H351 STOT RE 2, H373
ethanol	(CAS-No.) 64-17-5	27.55	Flam. Liq. 2, H225
AQUA	(CAS-No.) 7732-18-5	18.27	Not classified
hydrochloric acid	(CAS-No.) 7647-01-0	10.73	Skin Corr. 1, H314
acetaldehyde	(CAS-No.) 75-07-0	> 0.725	Flam. Liq. 1, H224 Eye Irrit. 2, H319 Carc. 2, H351 STOT SE 3, H335
4-hydroxy-3-methoxybenzaldehyde	(CAS-No.) 121-33-5	0.58	Eye Irrit. 2A, H319

Full text of hazard classes and H-statements : see section 16 **SECTION 4: First-aid measures** 4.1. **Description of first aid measures** First-aid measures general Never give anything by mouth to an unconscious person. If you feel unwell, seek medical advice (show the label where possible). First-aid measures after inhalation : Allow affected person to breathe fresh air. Allow the victim to rest. First-aid measures after skin contact Remove affected clothing and wash all exposed skin area with mild soap and water, followed by warm water rinse. First-aid measures after eye contact Rinse immediately with plenty of water. Obtain medical attention if pain, blinking or redness persists. First-aid measures after ingestion : Rinse mouth. Do NOT induce vomiting. Obtain emergency medical attention. 4.2. Most important symptoms and effects (acute and delayed) Potential Adverse human health effects and : Based on available data, the classification criteria are not met. symptoms Symptoms/effects : Not expected to present a significant hazard under anticipated conditions of normal use. Immediate medical attention and special treatment, if necessary 43 No additional information available

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SECTION 5: Fire-fighting measures	
5.1. Suitable (and unsuitable) extinguishir	ng media
	: Carbon dioxide. Dry chemical powder. Foam. Sand.
Unsuitable extinguishing media	Do not use a heavy water stream.
5.2. Specific hazards arising from the che	mical
, i i i i i i i i i i i i i i i i i i i	: Flammable.
Explosion hazard	: No data available on direct explosion hazard.
Reactivity in case of fire	No reactivity hazard other than the effects described in sub-sections below.
5.3. Special protective equipment and pre	cautions for fire-fighters
Firefighting instructions	: Exercise caution when fighting any chemical fire.
Protection during firefighting	: Do not attempt to take action without suitable protective equipment.
SECTION 6: Accidental release measu	ires
6.1. Personal precautions, protective equi	pment and emergency procedures
6.1.1. For non-emergency personnel	
Protective equipment	: Safety glasses (EN 166). Gloves.
Emergency procedures	: Evacuate unnecessary personnel.
6.1.2. For emergency responders	
Protective equipment	: Equip cleanup crew with proper protection.
Emergency procedures	: Ventilate area.
6.2. Environmental precautions	
Prevent entry to sewers and public waters. Notify a	authorities if liquid enters sewers or public waters.
6.3. Methods and material for containment	t and cleaning up
Methods for cleaning up	: Soak up spills with inert solids, such as clay or diatomaceous earth as soon as possible. Collect spillage. Store away from other materials.
6.4. Reference to other sections	
See Heading 8. Exposure controls and personal pr	rotection.
SECTION 7: Handling and storage	
7.1. Precautions for safe handling	
Precautions for safe handling	: Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work. Provide good ventilation in process area to prevent formation of vapor.
7.2. Conditions for safe storage, including	any incompatibilities
Storage conditions	: Keep only in the original container in a cool, well ventilated place away from : Keep container closed when not in use.
	: Strong bases. Strong acids.
Incompatible materials	: Sources of ignition. Direct sunlight.
SECTION 8: Exposure controls/perso	nal protection
8.1. Control parameters	
NARK2005 Duquenois-Levine Reagent	

No additional information available	
acetaldehyde (75-07-0)	
USA - ACGIH - Occupational Exposure Limits	
ACGIH Ceiling (ppm) 25 ppm	
ethanol (64-17-5)	
USA - ACGIH - Occupational Exposure Limits	
ACGIH STEL (ppm) 1000 ppm	
4-hydroxy-3-methoxybenzaldehyde (121-33-5)	
No additional information available	

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hydrochloric acid (7647-01-0)		
USA - ACGIH - Occupational Exposure Limits		
ACGIH TWA (mg/m³)	2.98 mg/m ³	
ACGIH TWA (ppm)	2 ppm	
USA - OSHA - Occupational Exposure Limits		
OSHA PEL (TWA) (mg/m³)	7 mg/m³	
OSHA PEL (TWA) (ppm)	5 ppm	
USA - IDLH - Occupational Exposure Limits		
US IDLH (ppm)	50 ppm	
USA - NIOSH - Occupational Exposure Limits		
NIOSH REL (TWA) (mg/m ³)	7 mg/m³	
NIOSH REL TWA [ppm]	5 ppm	
AQUA (7732-18-5)		
No additional information available		
chloroform (67-66-3)		
USA - ACGIH - Occupational Exposure Limits		
ACGIH TWA (ppm)	10 ppm (Chloroform; USA; Time-weighted average exposure limit 8 h; TLV - Adopted Value)	

8.2. Appropriate engineering controls

8.3. Individual protection measures/Personal protective equipment

Personal protective equipment:

Gloves. Safety glasses.

Hand protection:

Wear protective gloves.

Eye protection:

Chemical goggles or safety glasses

Respiratory protection:

Mist formation: aerosol mask with filter type P1

Personal protective equipment symbol(s):



Other information:

Do not eat, drink or smoke during use.

SECTION 9: Physical and chemical properties		
9.1. Information on basic physical and chemical properties		
Physical state	: Liquid	
Appearance	: Clear, colorless liquid.	
Color	: Colorless	
Odor	: Aromatic odour	
Odor threshold	: No data available	
рН	: No data available	
Melting point	: No data available	
Freezing point	: No data available	

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Boiling point	: No data available
Flash point	: No data available
Relative evaporation rate (butyl acetate=1)	: No data available
Flammability (solid, gas)	: Non flammable.
Vapor pressure	: No data available
Relative vapor density at 20 °C	: No data available
Relative density	: No data available
Solubility	: Soluble in water.
Partition coefficient n-octanol/water (Log Pow)	: No data available
Auto-ignition temperature	: No data available
Decomposition temperature	: No data available
Viscosity, kinematic	: No data available
Viscosity, dynamic	: No data available
Explosion limits	: No data available
Explosive properties	: No data available
Oxidizing properties	: No data available

9.2. Other information

No additional information available

SECTI	SECTION 10: Stability and reactivity		
10.1.	Reactivity		
No data	No data available.		
10.2.	Chemical stability		

Stable under recommended handling and storage conditions (see section 7).

10.3. Possibility of hazardous reactions

Not established.

10.4. Conditions to avoid

Direct sunlight. Extremely high or low temperatures. Open flame. Sparks.

10.5. Incompatible materials

Strong acids. Strong bases.

10.6. Hazardous decomposition products

fume. Carbon monoxide. Carbon dioxide.

SECTION 11: Toxicological informatic	on
11.1. Information on toxicological effects	
Acute toxicity (oral)	: Harmful if swallowed.
Acute toxicity (dermal)	: Not classified
Acute toxicity (inhalation)	: Harmful if inhaled.
ATE US (oral)	1671.477 mg/kg body weight
ATE US (dust, mist)	1.203 mg/l/4h
acetaldehyde (75-07-0)	
LD50 dermal rabbit	3540 mg/kg (Rabbit, Dermal)
LC50 Inhalation - Rat	24 mg/l (4 h, Rat, Inhalation)
LC50 Inhalation - Rat [ppm]	13300 ppm (4 h, Rat, Inhalation)
ethanol (64-17-5)	
LD50 oral rat	10470 mg/kg body weight (OECD 401: Acute Oral Toxicity, Rat, Male / female, Experimental value, Oral, 14 day(s))
LD50 dermal rabbit	> 15800 mg/kg body weight (Rabbit, Experimental value, Dermal)
LC50 Inhalation - Rat	124.7 mg/l air (Equivalent or similar to OECD 403, 4 h, Rat, Male / female, Experimental value, Inhalation (vapours), 14 day(s))

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4-hydroxy-3-methoxybenzaldehyde (121-33	-5)
LD50 oral rat	3300 mg/kg body weight (Equivalent or similar to OECD 401, Rat, Male / female, Experimental value, Oral, 14 day(s))
LD50 dermal rat	> 2000 mg/kg body weight (OECD 402: Acute Dermal Toxicity, 24 h, Rat, Male / female, Experimental value, Dermal, 14 day(s))
chloroform (67-66-3)	
LD50 oral rat	695 mg/kg (Rat; OECD 401: Acute Oral Toxicity; Experimental value; 908 mg/kg bodyweight; Rat; OECD 401: Acute Oral Toxicity; Experimental value; 1117 mg/kg bodyweight; Rat)
LD50 dermal rabbit	> 20000 mg/kg (Rabbit; No reliable data available; >3980 mg/kg bodyweight; Rabbit)
Skin corrosion/irritation	: Causes severe skin burns.
Serious eye damage/irritation	: Assumed to cause serious eye damage
Respiratory or skin sensitization	: Not classified
Germ cell mutagenicity	: Not classified
Carcinogenicity	: Suspected of causing cancer (Inhalation, oral). (Based on available data, the classification criteria are not met)
NARK2005 Duquenois-Levine Reagent	
Additional information	Chloroform is a suspect carcinogen based on animal studies only. Studies on long term exposure to humans is inconclusive. Based on the amount and packaging of this product, there is no known risk of cancer.
ethanol (64-17-5)	
Additional information	Ethyl alcohol (200 Proof) has been shown to cause cancer in Human and Animals when ingested in volume over time. There is no link to cancer in limited exposure scenarios.
chloroform (67-66-3)	
IARC group	2B - Possibly carcinogenic to humans
Reproductive toxicity	: Not classified
STOT-single exposure	: Not classified
acetaldehyde (75-07-0)	
STOT-single exposure	May cause respiratory irritation.
STOT-repeated exposure	: May cause damage to organs through prolonged or repeated exposure.
chloroform (67-66-3)	
STOT-repeated exposure	May cause damage to organs through prolonged or repeated exposure.
Aspiration hazard	: Not classified
Viscosity, kinematic	: No data available
Potential Adverse human health effects and	: Based on available data, the classification criteria are not met.
symptoms	: Not expected to present a significant hazard under anticipated conditions of normal use.
Symptoms/effects	. Not expected to present a significant nazard under anticipated conditions of normal use.
SECTION 12: Ecological information	1
12.1. Toxicity	
acetaldehyde (75-07-0)	
LC50 fish 1	30.8 mg/l (96 h, Pimephales promelas, Static system, Fresh water, Experimental value)
EC50 Daphnia 1	48.3 mg/l (48 h, Daphnia magna, Static system, Fresh water, Experimental value)
ErC50 (algae)	237 – 249 mg/l (5 day(s), Diatomeae, Static system, Fresh water, Experimental value)
ethanol (64-17-5)	
LC50 fish 1	15300 mg/l (US EPA, 96 h, Pimephales promelas, Flow-through system, Fresh water,

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4-hydroxy-3-methoxybenzaldehyde (121-33-5)	
LC50 fish 1	57 mg/l (Equivalent or similar to OECD 203, 96 h, Pimephales promelas, Flow-through
	system, Fresh water, Experimental value)
EC50 Daphnia 1	36.79 mg/l (OECD 202: Daphnia sp. Acute Immobilisation Test, 48 h, Daphnia magna, Static system, Fresh water, Experimental value, GLP)
ErC50 (algae)	120 mg/l (OECD 201: Alga, Growth Inhibition Test, 72 h, Pseudokirchneriella subcapitata, Static system, Fresh water, Experimental value, GLP)
chloroform (67-66-3)	
LC50 fish 1	18.2 ppm (LC50; ASTM; 96 h; Oncorhynchus mykiss; Flow-through system; Fresh water; Experimental value)
EC50 Daphnia 2	152.5 mg/l (EC50; US EPA; 48 h; Daphnia magna; Static system; Salt water; Experimental value)
2.2. Persistence and degradability	
NARK2005 Duquenois-Levine Reagent	
Persistence and degradability	Not established.
acetaldehyde (75-07-0)	
Persistence and degradability	Readily biodegradable in water.
Biochemical oxygen demand (BOD)	1.27 g O_2/g substance
ThOD	
-	1.82 g O₂/g substance
BOD (% of ThOD)	0.7
ethanol (64-17-5)	
Persistence and degradability	Biodegradable in the soil. Readily biodegradable in water.
Biochemical oxygen demand (BOD)	0.8 – 0.967 g O₂/g substance
Chemical oxygen demand (COD)	1.7 g O₂/g substance
ThOD	2.1 g O₂/g substance
4-hydroxy-3-methoxybenzaldehyde (121-33-5)	
Persistence and degradability	Readily biodegradable in water.
hydrochloric acid (7647-01-0)	
Persistence and degradability	Biodegradability: not applicable.
chloroform (67-66-3)	·
Persistence and degradability	Not readily biodegradable in water. Non degradable in the soil. Low potential for adsorption in soil.
ThOD	0.33 – 1.35 g O₂/g substance
BOD (% of ThOD)	0.015 - 0.06
2.3. Bioaccumulative potential	
NARK2005 Duquenois-Levine Reagent	
Bioaccumulative potential	Not established.
acetaldehyde (75-07-0)	0.62 (Experimental value)
Partition coefficient n-octanol/water (Log Pow)	0.63 (Experimental value)
Bioaccumulative potential	Low potential for bioaccumulation (Log Kow < 4).
ethanol (64-17-5)	
Partition coefficient n-octanol/water (Log Pow)	-0.35 (Experimental value, Equivalent or similar to OECD 107, 24 °C)
Bioaccumulative potential	Not bioaccumulative.
4-hydroxy-3-methoxybenzaldehyde (121-33-5)	
Partition coefficient n-octanol/water (Log Pow)	1.17 (Experimental value, OECD 107: Partition Coefficient (n-octanol/water): Shake Flask Method, 25 °C)
Bioaccumulative potential	Low potential for bioaccumulation (Log Kow < 4).
hydrochloric acid (7647-01-0)	
	Does not contain bioaccumulative component(s).

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chloroform (67-66-3)	
BCF fish 2	1.4 – 4.7 (BCF; OECD 305: Bioconcentration: Flow-Through Fish Test; 42 days; Cyprinus carpio; Flow-through system; Fresh water; Experimental value)
Partition coefficient n-octanol/water (Log Pow)	1.97 (Experimental value; 20 °C)
Bioaccumulative potential	Low potential for bioaccumulation (BCF < 500).

12.4. Mobility in soil

aaataldabuda (75.07.0)		
acetaldehyde (75-07-0)		
Surface tension	0.021 N/m (20 °C)	
Ecology - soil	No (test)data on mobility of the substance available.	
ethanol (64-17-5)		
Surface tension	22.31 mN/m (20 °C, 100 %)	
Partition coefficient n-octanol/water (Log Koc)	0.2 (log Koc, Experimental value)	
Ecology - soil	Highly mobile in soil.	
4-hydroxy-3-methoxybenzaldehyde (121-33-5)		
Partition coefficient n-octanol/water (Log Koc)	3.438 (log Koc, Experimental value)	
Ecology - soil	Low potential for mobility in soil.	
hydrochloric acid (7647-01-0)		
Ecology - soil	No (test)data on mobility of the component(s) available. May be harmful to plant growth, blooming and fruit formation.	
chloroform (67-66-3)		
Surface tension	0.0271 N/m (20 °C)	
Partition coefficient n-octanol/water (Log Koc)	Koc,Other; 86.7-367; Experimental value; log Koc; Other; 1.94-2.56; Experimental value	
Ecology - soil	May be harmful to plant growth, blooming and fruit formation.	

12.5. Other adverse effects

Other information

: Avoid release to the environment.

SECTION 13: Disposal consideration	15
13.1. Disposal methods	
Product/Packaging disposal recommendations	: Dispose in a safe manner in accordance with local/national regulations.
Ecology - waste materials	: Avoid release to the environment.

SECTION 14: Transport information

Department of Transportation (DOT)

In accordance with DOT

Transport document description	: UN3316 Chemical kits, 9, II
UN-No.(DOT)	: UN3316
Proper Shipping Name (DOT)	: Chemical kits
Class (DOT)	: 9 - Class 9 - Miscellaneous hazardous material 49 CFR 173.140
Packing group (DOT)	: II - Medium Danger
Hazard labels (DOT)	: 9 - Class 9 (Miscellaneous dangerous materials)

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: None

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DOT Special Provisions (49 CFR 172.102)	:	15 - This entry applies to Chemical kits and First aid kits containing one or more compatible items of hazardous materials in boxes, cases, etc. that are used for medical, analytical, diagnostic or testing purposes. For transportation by aircraft, materials forbidden for transportation by passenger aircraft or cargo aircraft may not be included in the kits. Chemical kits and first aid kits are excepted from the specification packaging requirements of this subchapter when packaged in combination packaging. Chemical kits and first aid kits are also excepted from the labeling and placarding requirements of this subchapter, except when offered for transportation or transported by air. Chemical and first aid kits may be transported in accordance with the consumer commodity and ORM exceptions in 173.156, provided they meet all required conditions. Kits that are carried on board transport vehicles for first aid or operating purposes are not subject to the requirements of this subchapter.
DOT Packaging Exceptions (49 CFR 173.xxx)	:	161
DOT Quantity Limitations Passenger aircraft/rail (49 CFR 173.27)	:	10 kg
DOT Quantity Limitations Cargo aircraft only (49 CFR 175.75)	:	10 kg
DOT Vessel Stowage Location	:	A - The material may be stowed "on deck" or "under deck" on a cargo vessel and on a passenger vessel.
Other information	:	No supplementary information available.
Transportation of Dangerous Goods		

Transport by sea

Not applicable

Air transport

Not applicable

SECTION 15: Regulatory information	
15.1. US Federal regulations	
No additional information available	
15.2. International regulations	
CANADA No additional information available EU-Regulations No additional information available National regulations No additional information available	
15.3. US State regulations	
No additional information available	
SECTION 16: Other information	

Revision date	: 05/01/2023
Data sources	: REGULATION (EC) No 1272/2008 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 16 December 2008 on classification, labeling and packaging of substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No 1907/2006.
Training advice	Normal use of this product shall imply use in accordance with the instructions on the packaging. Keep in tightly closed container. Keep cool and dry. Avoid all ignition sources - heat, open flame, sparks. Avoid incompatible materials. Avoid dust creation and accumulation. Avoid inhalation and ingestion. Avoid contact with eyes. Wash thoroughly after handling.
Other information	: None.

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Full text of H-phrases:	
H224	Extremely flammable liquid and vapor
H225	Highly flammable liquid and vapor
H302	Harmful if swallowed
H314	Causes severe skin burns and eye damage
H315	Causes skin irritation
H319	Causes serious eye irritation
H331	Toxic if inhaled
H332	Harmful if inhaled
H335	May cause respiratory irritation
H351	Suspected of causing cancer
H373	May cause damage to organs through prolonged or repeated exposure
NFPA health hazard	: 2 - Materials that, under emergency conditions, can cause temporary incapacitation or residual injury.
NFPA fire hazard	: 4 - Materials that rapidly or completely vaporize at atmospheric pressure and normal ambient temperature or that are readily dispersed in air and burn readily.
NFPA reactivity	: 1 - Materials that in themselves are normally stable but can become unstable at elevated temperatures and pressures.
Hazard Rating	
lealth	: 2 Moderate Hazard - Temporary or minor injury may occur
Flammability	 4 Severe Hazard - Flammable gases, or very volatile flammable liquids with flash points below 73 F, and boiling points below 100 F. Materials may ignite spontaneously with air. (Class IA)
Physical	: 1 Slight Hazard - Materials that are normally stable but can become unstable (self-react) at hig temperatures and pressures. Materials may react non-violently with water or underg hazardous polymerization in the absence of inhibitors.
Personal protection	: G
	G - Safety glasses, Gloves, Vapor respirator

SDS US (GHS HazCom 2012)

The information above is believed to be accurate and represents the best information currently available to us. However, we make no warranty of merchantability or any other warranty, expressed or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigation to determine the suitability of the information for their particular purposes.