

# NNK UNLABELED 2 MG/ML IN ACETONITRILE

Safety Data Sheet

according to Regulation (EC) No. 453/2010 and according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations :

Date of issue: 26/03/2015

Revision date:

Version: 1.0

# ULM-8987-20X-S

SECTION 1: Identification of the s	ubstance/mixture and of the company/undertaking
1.1. Product identifier	
Product form	: Mixtures
Product name.	: NNK UNLABELED 2 MG/ML IN ACETONITRILE
Product code	: ULM-8987-20X-S
1.2. Relevant identified uses of the su	ubstance or mixture and uses advised against
1.2.1. Relevant identified uses	
Industrial/Professional use spec	: For professional use only.
1.2.2. Uses advised against	
No additional information available	
1.3. Details of the supplier of the safe	ety data sheet
Cambridge Isotope Laboratories, Inc. 50 Frontage Road Andover, MA 01810 USA	
USA: 1-800-322-1174 Int: 1-978-749-8000 cilsales@isotope.com www.isotope.com	
Emergency telephone number	
Emergency numbers:	
Chemtrec: 1-800-424-9300 (24 hours) International: 1-202-483-7616 (24 hours)	
<b>SECTION 2: Hazards identification</b>	h .
2.1. Classification of the substance o	r mixture
Classification according to Regulation (EC	ン) No. 1272/2008 [CLP]
Flam. Liq. 2 H225	
Acute Tox. 4 (Oral) H302	
Acute Tox. 4 (Dermal) H312	
Acute Tox. 4 (Inhalation:vapour) H332	
Eye Irrit. 2 H319	
Full text of H-phrases: see section 16	
Classification according to Directive 67/54 F; R11 Full text of R-phrases: see section 16	8/EEC or 1999/45/EC

# **Classification (GHS-US)**

Flam. Liq. 2 H225 Acute Tox. 4 (Oral) H302 Acute Tox. 4 (Dermal) Acute Tox. 4 (Inhalation:vapour) H312 H332 Eye Irrit. 2A H319 Skin Sens. 1 H317 Carc. Not classified

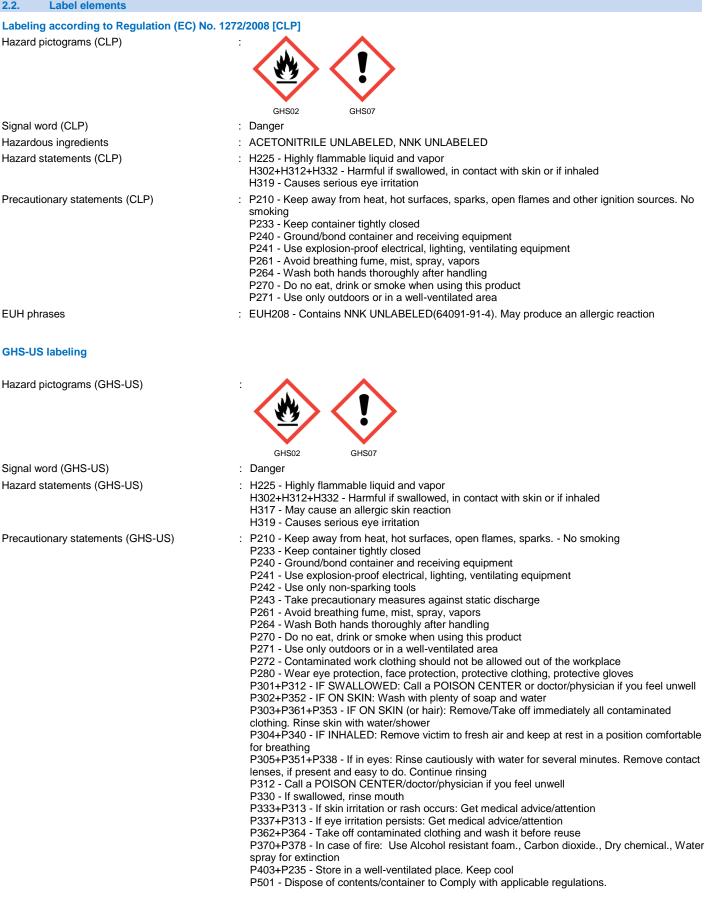
Adverse physicochemical, human health and environmental effects

Lungs, Blood, Kidney, Liver, Central nervous system.

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2.2.	Label e	lements
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# **SECTION 3: Composition/information on ingredients**

# 3.1. Substances

Not applicable

3.2. Mixtures			
Name	Product identifier	%	Classification according to Directive 67/548/EEC
ACETONITRILE UNLABELED	(CAS No) 75-05-8 (EC no) 200-835-2 (EC index no) 608-001-00-3	99.7455	F; R11
NNK UNLABELED	(CAS No) 64091-91-4	0.2545	Carc.Cat.3; R40 T; R25
Name	Product identifier	%	Classification according to Regulation (EC) No. 1272/2008 [CLP]
ACETONITRILE UNLABELED	(CAS No) 75-05-8 (EC no) 200-835-2 (EC index no) 608-001-00-3	99.7455	Flam. Liq. 2, H225 Acute Tox. 4 (Oral), H302 Acute Tox. 4 (Dermal), H312 Acute Tox. 4 (Inhalation), H332 Eye Irrit. 2, H319
NNK UNLABELED	(CAS No) 64091-91-4	0.2545	Acute Tox. 3 (Oral), H301 Skin Sens. 1, H317 Carc. 2, H351
Name	Product identifier	%	Classification (GHS-US)
ACETONITRILE UNLABELED	(CAS No) 75-05-8	99.7455	Flam. Liq. 2, H225 Acute Tox. 4 (Oral), H302 Acute Tox. 4 (Dermal), H312 Acute Tox. 4 (Inhalation), H332 Eye Irrit. 2A, H319
NNK UNLABELED	(CAS No) 64091-91-4	0.2545	Acute Tox. 3 (Oral), H301 Skin Sens. 1, H317 Carc. 2, H351

# Full text of R-, H- and EUH-phrases: see section 16

SECTION 4: First aid measures	
4.1. Description of first aid measures	
First-aid measures general	: Consult a physician. Show this safety data sheet to the doctor in attendance. Move out of dangerous area.
First-aid measures after inhalation	: Remove to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER/doctor/physician if you feel unwell.
First-aid measures after skin contact	: Rinse skin with water/shower. Remove/Take off immediately all contaminated clothing. Wash with plenty of soap and water. Wash contaminated clothing before reuse.
First-aid measures after eye contact	: Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.
First-aid measures after ingestion	: Rinse mouth. Call a POISON CENTER/doctor/physician if you feel unwell.
4.2. Most important symptoms and effect	s, both acute and delayed
Symptoms/injuries after inhalation	: Danger of serious damage to health by prolonged exposure through inhalation. Harmful if inhaled.
Symptoms/injuries after skin contact	: Repeated exposure to this material can result in absorption through skin causing significant health hazard. Harmful in contact with skin.
Symptoms/injuries after eye contact	: Causes eye irritation.
Symptoms/injuries after ingestion	: Swallowing a small quantity of this material will result in serious health hazard.
4.3. Indication of any immediate medical	attention and special treatment needed
No additional information available	
SECTION 5: Firefighting measures	
5.1. Extinguishing media	
suitable extinguishing media	: Use water spray, alcohol-resistant foam, dry chemical, or carbon dioxide.
5.2. Special hazards arising from the sub	stance or mixture

5.2. Special nazards arising fro	om the substance or mixture
Fire hazard	: Highly flammable liquid and vapor.
Explosion hazard	: May form flammable/explosive vapor-air mixture.
Reactivity	: Vapors may form explosive mixture with air.
5.3. Advice for firefighters	
Firefighting instructions	: Use water spray to cool unopened containers.

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Protection during firefighting : Do not enter fire area without proper protective equipment, including respiratory protection.

SECT	ON 6: Accidental release meas	ures
6.1.	Personal precautions, protective equ	ipment and emergency procedures
General	measures	: Remove ignition sources. Use special care to avoid static electric charges. No naked lights. No smoking.
6.1.1.	For non-emergency personnel	
Emerge	ncy procedures	: Use personal protective equipment. Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Remove all sources of ignition. Evacuate personnel to safe areas. Beware of vapours accumulating to form explosive concentrations. Vapours can accumulate in low areas.
6.1.2.	For emergency responders	
No addit	ional information available	
6.2.	Environmental precautions	
Prevent	further leakage or spillage if safe to do so	. Do not let product enter drains.
6.3.	Methods and material for containment	nt and cleaning up
For cont	ainment	: Contain spillage, and then collect with an electrically protected vacuum cleaner or by wet- brushing and place in container for disposal according to local regulations.
6.4.	Reference to other sections	
No addi	ional information available	
SECT	ON 7: Handling and storage	
7.1.	Precautions for safe handling	
Addition	al hazards when processed	: Handle empty containers with care because residual vapors are flammable.
Precauti	ons for safe handling	: No naked lights. No smoking. Use only non-sparking tools. Use only outdoors or in a well- ventilated area.
Hygiene	measures	: Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.
7.2.	Conditions for safe storage, includin	g any incompatibilities
Technic	al measures	: Proper grounding procedures to avoid static electricity should be followed. Ground/bond container and receiving equipment.
Storage	conditions	: Store refrigerated (-5 C to 5 C). Protect from light.
Incompa	atible materials	: Heat sources.
7.3.	Specific end use(s)	
No addit	ional information available	
SECT	ON 8: Exposure controls/perso	nal protection

8.1. Control parameters			
NNK UNLABELED 2 MG/ML	N ACETONITRILE		
Italy - Portugal - USA ACGIH	ACGIH TWA (ppm)	20.000000000 ppm Lower Respiratory Tract irritation. Not classifiable as a human carcinogen.	
ACETONITRILE UNLABELED (75-05-8)			
Italy - Portugal - USA ACGIH	ACGIH TWA (ppm)	20.000000000 ppm Lower Respiratory Tract irritation. Not classifiable as a human carcinogen.	
USA OSHA	OSHA PEL (TWA) (ppm)	40.000000000 ppm	
USA OSHA	OSHA PEL (STEL) (ppm)	60.000000000 ppm	

### 8.2. **Exposure controls**

Personal protective equipment

: Gas mask with filter type NO at conc. in air >. Protective clothing. Protective goggles. Selfcontained breathing apparatus. Gloves.



Hand protection	: Wear suitable protective clothing and gloves.
Eye protection	: Wear safety glasses with side shields (or goggles) and a face shield.
Skin and body protection	: Choose body protection according to the amount and concentration of the dangerous substance at the work place.
Respiratory protection	: Wear approved mask.

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<b>SECTION 9: Physical and chemical</b>	properties	
9.1. Information on basic physical and chemical properties		
The properties listed below are for the solvent, the main component of this mixture.		
Physical state	: Liquid	
Appearance	: Liquid, clear.	
Molecular mass	: 41.05	
Color	: Colourless.	
Odor	: ether-like.	
Odor threshold	: No data available	
рН	: No data available	
Relative evaporation rate (butyl acetate=1)	: No data available	
Melting point	: -48 °C (-54°F)	
Freezing point	: No data available	
Boiling point	: 81 - 82 °C (178 - 180 °F)	
Flash point	: 2.0 °C (35.6 °F) - closed cup	
Self ignition temperature	: 523 °C (973 °F)	
Decomposition temperature	: No data available	
Flammability (solid, gas)	: Highly flammable liquid and vapor	
Vapor pressure	:73.18 hPa (54.89 mmHg) at 15°C (59 °F), 119.81 hPa (89.86 mmHg) at 25°C(77 °F)	
Relative vapor density at 20 °C	: 1.42 - (Air = 1.0)	
Relative density	: No data available	
Solubility	: Water: 100 %	
Log Pow	: -0.34	
Log Kow	: No data available	
Viscosity, kinematic	: No data available	
Viscosity, dynamic	: No data available	
Explosive properties	: No data available	
Oxidizing properties	: No data available	
Explosive limits	: 4.4 - 16 vol %	
9.2. Other information		

9.2. Other information
No additional information available

<b>SECTION 10: Sta</b>	ability and reactivity				
10.1. Reactivity	. Reactivity				
Vapors may form expl	losive mixture with air.				
10.2. Chemical s	tability				
See storage and expire	ration date on CoA.				
10.3. Possibility	of hazardous reactions				
No additional informat					
10.4. Conditions	to avoid				
Open flame. Direct su					
•	5				
	le materials				
Acids, Bases, Oxidizir	ng agents, Reducing agents,	Alkali metals.			
10.6. Hazardous	10.6. Hazardous decomposition products				
May release flammab	le gases.				
SECTION 11: To	xicological informatio	n			
	n on toxicological effects				
Acute toxicity	-	: Harmful if swallowed. Harmful in contact with skin. Harmful if inhaled.			
NNK UNLABELED	2 MG/ML IN ACETONITRIL				
LD50 oral rat		2460 mg/kg			
LD50 dermal rabbit		2000 mg/kg			
LC50 inhalation rat (	mg/l)	≥ 26.8 mg/l			
LC50 inhalation rat (	ppm)	7551 ppm - 8h			

ATE (oral)

ATE (dermal)

500.000 mg/kg body weight

1100.000 mg/kg body weight

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Eyes - Rabbit - Irritating to eyesRespiratory or skin sensitization: Did not cause sensitization on laboratory animals. Buehler Test - guinea pig - Did not cause sensitisation on laboratory animals.Germ cell mutagenicity: Not classifiedCarcinogenicity: Not classifiedReproductive toxicity: Animal testing did not show any effects on fertility.Specific target organ toxicity (single exposure): Not classified The substance or mixture is not classified as specific target organ toxicant.Specific target organ toxicity (repeated exposure): Not classified The substance or mixture is not classified as specific target organ toxicant.Aspiration hazard: Not classified The substance or mixture is not classified as specific target organ toxicant.Potential Adverse human health effects and symptoms: Not classified Tharmful if swallowed. Harmful in contact with skin. Harmful if inhaled.Symptoms/injuries after inhalation: Danger of serious damage to health by prolonged exposure through inhalation. Harmful if inhaled.	NNK UNLABELED 2 MG/ML IN ACETONITRILE		
ATE (dust, mist)       1.500 mg/l/4h         ACETONITRLE UNLABELED (75-05-8)         LD50 oral rat       2460 mg/kg         LD50 dimal rabbit       2000 mg/kg         LC50 inhalation rat (mg/l)       2.26.8 mg/l         LC50 inhalation rat (mg/l)       2.26.8 mg/l         LC50 inhalation rat (ppm)       7551 ppm - 8h         ATE (rad)       500.000 mg/kg body weight         ATE (ademai)       2000.000 mg/kg body weight         ATE (ademai)       10.000 mg/l/4h         ATE (radi)       100.000 mg/kg body weight         Stin corrosion/irritation       Not classified         Skin - rabbit - No skin irritation       Skin - rabbit - No skin irritation         Serious eye damage/irritation       Causes serious eye inflation.         Eyes - Rabbit - Irritating to eyes       Respiratory or skin sensitization         Serious eye damage/irritation       Did not cause sensitization on laboratory animals.         Buehler Test - guinea pig - Did not cause sensitisation on laboratory animals.         Germ cell mutagenicity       No evidence of carcinogenicity in animal studies (when indicated).         Carcinogenicity <td< th=""><th>ATE (gases)</th><th>4500.000 ppmV/4h</th></td<>	ATE (gases)	4500.000 ppmV/4h	
ACETONITRILE UNLABELED (75-05-8)           LD50 oral rat         2460 mg/kg           LD50 dermal rabbit         2000 mg/kg           LC50 inhalation rat (mg/l)         2 26.8 mg/l           LC50 inhalation rat (ppm)         7551 ppm - 8h           ATE (dermal)         2000.000 mg/kg body weight           ATE (dermal)         2000.000 mg/kg body weight           ATE (darmal)         2000.000 mg/kg body weight           ATE (darses)         4500.000 pm/kh           ATE (darses)         4500.000 pm/kh           ATE (darses)         4500.000 pm/kh           ATE (darses)         1.500 mg/kg body weight           ATE (darses)         1.500 mg/kg           ATE (darses)         1.0000 mg/kg body weight           Skin corrosion/irritation         Sin - rabbit - No skin irritation           Serious eye damage/irritation         Causes serious eye irritation.           Eyes - Rabbit - Irritating to eyes         Buehler Test - guinea pig - Did not cause sensitization on laboratory animals.           Guern cell mutagenicity         Not classified           Carcainogenicity         Not classified	ATE (vapors)	11.000 mg/l/4h	
LD50 oral rat       2460 mg/kg         LD50 dermal rabbit       2000 mg/kg         LC50 inhalation rat (mg/l)       2 28 mg/l         LC50 inhalation rat (ppm)       7551 ppm - 8h         ATE (oral)       500.000 mg/kg body weight         ATE (gases)       4500.000 mg/kg body weight         ATE (gases)       4500.000 mg/kg body weight         ATE (demal)       2000.000 mg/kg body weight         ATE (demal)       1.000 mg/l/4h         ATE (demal)       1.500 mg/l/4h         ATE (oral)       100.000 mg/kg body weight         ATE (oral)       100.000 mg/kg body weight         Skin corrosion/irritation       Not classified         Skin corrosion/irritation       Not classified         Skin - rabbit - No skin irritation       Scause serious eye irritation.         Eyes - Rabbit - Irritating to eyes       Egelie Test - guinea pig - Did not cause sensitization on laboratory animals.         Germ cell mutagenicity       Not classified         Carcinogenicity       No evidence of carcinogenicity in animal studies (when indicated).         Reproductive toxicity (single exposure)       Not classified         Specific target organ toxicity (repeated       Not classified         Aspiration hazard       E Not classified         Symptoms/injuries after inhalation	ATE (dust, mist)	1.500 mg/l/4h	
LD50 dermal rabbit       2000 mg/kg         LC50 inhalation rat (mg/l)       ≥ 26.8 mg/l         LC50 inhalation rat (mg/l)       26.8 mg/l         LC50 inhalation rat (mg/l)       500.000 mg/kg body weight         ATE (ral)       500.000 mg/kg body weight         ATE (dermal)       2000.000 mg/kg body weight         ATE (gases)       4500.000 pm/V4h         ATE (dust, mist)       1.500 mg/V4h         ATE (ral)       100.000 mg/kg body weight         Skin corosion/irritation       : Not classified         Skin - rabbit - No skin irritation       : Causes serious eye irritation.         Eyes - Rabbit - Irritating to eyes       : Did not cause sensitization on laboratory animals.         Buehler Test - guinea pig - Did not cause sensitisation on laboratory animals.       : Did not cause sensitization on laboratory animals.         Germ cell mutagenicity       : Not classified       : Not classified         Carcinogenicity       : Not classified       : Not classified         Specific target organ toxicity (repeated exposure)       : Not classified       : Not classified         Specific target organ toxicity (repeated exposure)       : Not classifi	ACETONITRILE UNLABELED (75-05-8)		
LC50 inhalation rat (mg/l)       ≥ 26.8 mg/l         LC50 inhalation rat (ppm)       7551 ppm - 8h         ATE (ora)       500.000 mg/kg body weight         ATE (dermal)       2000.000 mg/kg body weight         ATE (dermal)       2000.000 mg/kg body weight         ATE (gases)       4500.000 pg/kg hody weight         ATE (qases)       4500.000 pg/kg hody weight         ATE (darmal)       1.500 mg/k4h         ATE (oral)       1.500 mg/k4h         NKK UNLABELED (64091-91-4)          ATE (oral)       100.000 mg/kg body weight         Skin corrosion/irritation       Not classified         Skin corrosion/irritation       Skin - rabbit - No skin irritation         Serious eye damage/irritation       Causes serious eye irritation.         Eyes - Rabbit - Irritating to eyes       Buehler Test - guinea pig - Did not cause sensitisation on laboratory animals.         Buehler Test - guinea pig - Did not cause sensitisation on laboratory animals.       Buehler Test - guinea pig - Did not cause sensitisation on laboratory animals.         Germ cell mutagenicity       Not classified       Not classified         Carcinogenicity       Not classified       The substance or mixture is not classified as specific target organ toxicity (single exposure)         Specific target organ toxicity (repeated exposure       Not classified       The s	LD50 oral rat	2460 mg/kg	
LC50 inhalation rat (ppm)       7551 ppm - 8h         ATE (orai)       500.000 mg/kg body weight         ATE (dermal)       2000.000 mg/kg body weight         ATE (gases)       4500.000 ppm/vlAh         ATE (vapors)       11.000 mg/k4h         ATE (rai)       1.500 mg/k4h         ATE (rai)       1.000 mg/kg body weight         ATE (vapors)       11.000 mg/k4h         ATE (rai)       100.000 mg/kg body weight         Skin corrosion/irritation       Not classified         Skin corrosion/irritation       Skin - rabbit - No skin irritation         Serious eye damage/irritation       Causes serious eye irritation.         Eyes - Rabbit - Irritating to eyes       Buehler Test - guinea pig - Did not cause sensitization on laboratory animals.         Buehler Test - guinea pig - Did not cause sensitization on laboratory animals.       Buehler Test - guinea pig - Did not cause sensitization on laboratory animals.         Specific target organ toxicity (single exposure)       Not classified       The substance or mixture is not classified as specific target organ toxicant.         Specific target organ toxicity (repeated exposure)       Not classified       The substance or mixture is not classified as specific target organ toxicant.         Aspiration hazard       Not classified       Sapiration hazard       Not classified         Potential Adverse human health effects an	LD50 dermal rabbit	2000 mg/kg	
ATE (oral)       500.000 mg/kg body weight         ATE (dermal)       2000.000 mg/kg body weight         ATE (dermal)       2000.000 mg/kg body weight         ATE (gases)       4500.000 pmV/4h         ATE (dust, mist)       1.500 mg//4h         NKK UNLABELED (64091-91-4)       1.500 mg//4h         ATE (oral)       100.000 mg/kg body weight         Skin corrosion/irritation       : Not classified         Skin corrosion/irritation       : Causes serious eye irritation.         Eyes - Rabbit - Irritating to eyes       Eyes - Rabbit - Irritating to eyes         Respiratory or skin sensitization       : Did not cause sensitization on laboratory animals.         Buehler Test - guinea pig - Did not cause sensitisation on laboratory animals.         Germ cell mutagenicity       : Not classified         Carcinogenicity       : Not classified         Carcinogenicity       : Not classified         Reproductive toxicity       : Animal testing did not show any effects on fertility.         Specific target organ toxicity (repeated exposure)       : Not classified         The substance or mixture is not classified as specific target organ toxicant.       : Not classified         Potential Adverse human health effects and symptoms/injuries after inhalation       : Danger of serious damage to health by prolonged exposure through inhalation. Harmful if inhaled.	LC50 inhalation rat (mg/l)	≥ 26.8 mg/l	
ATE (dermal)       2000.000 mg/kg body weight         ATE (gases)       4500.000 ppmV/4h         ATE (vapors)       11.000 mg/k4h         ATE (dust, mist)       1.500 mg/k4h         NKK UNLABELED (64091-91-4)       100.000 mg/kg body weight         Skin corrosion/irritation       : Not classified         Serious eye damage/irritation       : Causes serious eye inritation.         Eyes - Rabbit - Irritating to eyes       Respiratory or skin sensitization         Germ cell mutagenicity       : Not classified         Carcinogenicity       : Not classified         Garm cell mutagenicity       : Not classified         Carcinogenicity       : Not classified         Specific target organ toxicity (single exposure)       : Not classified         Specific target organ toxicity (repeated exposure)       : Not classified         Specific target organ toxicity (repeated exposure)       : Not classified         Specific target organ toxicity (repeated exposure)       : Not classified         Catential Adverse human health effects and symptoms/injuries after inhalation       : Danger of serious damage to health by prolonged exposure through inhalation. Harmful if inhaled.         Symptoms/injuries after exp contact       : Repeated exposure to this material can result in absorption through skin causing significant health health health Adverse human health effects and symptoms/injuries after exp contact	LC50 inhalation rat (ppm)	7551 ppm - 8h	
ATE (gases)       4500.000 ppmV/4h         ATE (vapors)       11.000 mg//4h         ATE (dust, mist)       1.500 mg//4h         NNK UNLABELED (64091-91-4)       ATE (oral)         ATE (ral)       100.000 mg/kg body weight         Skin corrosion/irritation       : Not classified         Serious eye damage/irritation       : Causes serious eye irritation.         Eyes - Rabbit - Irritating to eyes       Eyes - Rabbit - Irritating to eyes         Respiratory or skin sensitization       : Did not cause sensitization on laboratory animals.         Buehler Test - guinea pig - Did not cause sensitisation on laboratory animals.       Buehler Test - guinea pig - Did not cause sensitisation on laboratory animals.         Germ cell mutagenicity       : Not classified       Storicause sensitization on laboratory animals.         Specific target organ toxicity (single exposure)       : Not classified       The substance or mixture is not classified as specific target organ toxicant.         Specific target organ toxicity (repeated exposure)       : Not classified       The substance or mixture is not classified as specific target organ toxicant.         Aspiration hazard       : Not classified       : Harmful if swallowed. Harmful in contact with skin. Harmful if inhaled.         Symptoms/injuries after inhalation       : Danger of serious damage to health by prolonged exposure through inhalation. Harmful if inhaled.         Symptoms/injuries	ATE (oral)	500.000 mg/kg body weight	
ATE (vapors)       11.000 mg/l/4h         ATE (dust, mist)       1.500 mg/l/4h         INK UNLABELED (64091-91-4)       I00.000 mg/kg body weight         ATE (oral)       100.000 mg/kg body weight         Skin corrosion/irritation       : Not classified Skin - rabbit - No skin irritation. Eyes - Rabbit - Irritating to eyes         Respiratory or skin sensitization       : Did not cause sensitization on laboratory animals. Buehler Test - guinea pig - Did not cause sensitisation on laboratory animals.         Gern cell mutagenicity       : Not classified         Carcinogenicity       : Not classified         Carcinogenicity       : Not classified         Specific target organ toxicity (single exposure)       : Not classified         The substance or mixture is not classified as specific target organ toxicity (repeated exposure)       : Not classified         Specific target organ toxicity (repeated exposure)       : Not classified         Symptoms/injuries after inhalation       : Danger of serious damage to health by prolonged exposure through inhalation. Harmful if inhaled.         Symptoms/injuries after skin contact       : Repeated exposure to this material can result in absorption through skin causing significant health health after skin contact         Symptoms/injuries after eye contact       : Causes eye irritation.	ATE (dermal)	2000.000 mg/kg body weight	
ATE (dust, mist)       1.500 mg//4h         NNK UNLABELED (64091-91-4)       100.000 mg/kg body weight         ATE (oral)       100.000 mg/kg body weight         Skin corrosion/irritation       : Not classified Skin - rabbit - No skin irritation         Serious eye damage/irritation       : Causes serious eye irritation. Eyes - Rabbit - Irritating to eyes         Respiratory or skin sensitization       : Did not cause sensitization on laboratory animals. Buehler Test - guinea pig - Did not cause sensitisation on laboratory animals.         Germ cell mutagenicity       : Not classified         Carcinogenicity       : Not classified         Reproductive toxicity       : Animal testing did not show any effects on fertility.         Specific target organ toxicity (single exposure)       : Not classified         The substance or mixture is not classified as specific target organ toxicant.         Specific target organ toxicity (repeated exposure)       : Not classified         Reproductive buman health effects and symptoms       : Not classified         Symptoms/injuries after inhalation       : Danger of serious damage to health by prolonged exposure through inhalation. Harmful if inhaled.         Symptoms/injuries after explicated       : Repeated exposure to this material can result in absorption through skin causing significant health hazard. Harmful in contact with skin.         Symptoms/injuries after eye contact       : Causes eye irritation. <td>ATE (gases)</td> <td>4500.000 ppmV/4h</td>	ATE (gases)	4500.000 ppmV/4h	
INK UNLABELED (64091-91-4)           ATE (oral)         100.000 mg/kg body weight           Skin corrosion/irritation         : Not classified Skin - rabbit - No skin irritation           Serious eye damage/irritation         : Causes serious eye irritation. Eyes - Rabbit - Irritating to eyes           Respiratory or skin sensitization         : Did not cause sensitization on laboratory animals. Buehler Test - guinea pig - Did not cause sensitisation on laboratory animals.           Germ cell mutagenicity         : Not classified           Carcinogenicity         : No evidence of carcinogenicity in animal studies (when indicated).           Reproductive toxicity         : Animal testing did not show any effects on fertility.           Specific target organ toxicity (repeated exposure)         : Not classified The substance or mixture is not classified as specific target organ toxicant.           Aspiration hazard         : Not classified           Potential Adverse human health effects and symptoms         : Danger of serious damage to health by prolonged exposure through inhalation. Harmful if inhaled.           Symptoms/injuries after skin contact         : Repeated exposure to this material can result in absorption through skin causing significant health hazard. Harmful in contact with skin.	ATE (vapors)	11.000 mg/l/4h	
ATE (oral)       100.000 mg/kg body weight         Skin corrosion/irritation       : Not classified Skin - rabbit - No skin irritation         Serious eye damage/irritation       : Causes serious eye irritation. Eyes - Rabbit - Irritating to eyes         Respiratory or skin sensitization       : Did not cause sensitization on laboratory animals. Buehler Test - guinea pig - Did not cause sensitisation on laboratory animals.         Germ cell mutagenicity       : Not classified         Carcinogenicity       : Not classified         Reproductive toxicity       : Animal testing did not show any effects on fertility.         Specific target organ toxicity (single exposure)       : Not classified         The substance or mixture is not classified as specific target organ toxicant.       : Not classified         Reproductive toxicity (repeated exposure)       : Not classified         The substance or mixture is not classified as specific target organ toxicant.       : Not classified         Specific target organ toxicity (repeated exposure)       : Not classified         * Not classified       : Harmful if swallowed. Harmful in contact with skin. Harmful if inhaled.         Symptoms/injuries after inhalation       : Danger of serious damage to health by prolonged exposure through inhalation. Harmful if inhaled.         Symptoms/injuries after eye contact       : Repeated exposure to this material can result in absorption through skin causing significant health hazard. Harmful in contact with skin.<	ATE (dust, mist)	1.500 mg/l/4h	
Skin corrosion/irritation       : Not classified         Skin corrosion/irritation       : Not classified         Serious eye damage/irritation       : Causes serious eye irritation.         Eyes - Rabbit - Irritating to eyes       :         Respiratory or skin sensitization       : Did not cause sensitization on laboratory animals.         Buehler Test - guinea pig - Did not cause sensitisation on laboratory animals.         Germ cell mutagenicity       : Not classified         Carcinogenicity       : Not classified         Reproductive toxicity       : Animal testing did not show any effects on fertility.         Specific target organ toxicity (single exposure)       : Not classified         The substance or mixture is not classified as specific target organ toxicant.       : Not classified         Specific target organ toxicity (repeated exposure)       : Not classified         The substance or mixture is not classified as specific target organ toxicant.       : Not classified         Aspiration hazard       : Not classified       : Not classified         Potential Adverse human health effects and symptoms       : Danger of serious damage to health by prolonged exposure through inhalation. Harmful if inhaled.         Symptoms/injuries after skin contact       : Repeated exposure to this material can result in absorption through skin causing significant health hazard. Harmful in contact with skin.         Symptoms/injuries after	NNK UNLABELED (64091-91-4)		
Skin - rabbit - No skin irritationSerious eye damage/irritation2 causes serious eye irritation. Eyes - Rabbit - Irritating to eyesRespiratory or skin sensitization2 Did not cause sensitization on laboratory animals. Buehler Test - guinea pig - Did not cause sensitisation on laboratory animals.Germ cell mutagenicity2 Not classifiedCarcinogenicity3 Not evidence of carcinogenicity in animal studies (when indicated).Reproductive toxicity2 Animal testing did not show any effects on fertility.Specific target organ toxicity (single exposure)3 Not classified The substance or mixture is not classified as specific target organ toxicant.Specific target organ toxicity (repeated exposure)4 Not classified The substance or mixture is not classified as specific target organ toxicant.Symptoms/injuries after inhalation5 Danger of serious damage to health by prolonged exposure through inhalation. Harmful if inhaled.Symptoms/injuries after eye contact5 Repeated exposure to this material can result in absorption through skin causing significant health hazard. Harmful in contact with skin.	ATE (oral)	100.000 mg/kg body weight	
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Potential Adverse human health effects and symptoms: Harmful if swallowed. Harmful in contact with skin. Harmful if inhaled.Symptoms/injuries after inhalation: Danger of serious damage to health by prolonged exposure through inhalation. Harmful if inhaled.Symptoms/injuries after skin contact: Repeated exposure to this material can result in absorption through skin causing significant health hazard. Harmful in contact with skin.Symptoms/injuries after eye contact: Causes eye irritation.	exposure)	The substance or mixture is not classified as specific target organ toxicant.	
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Symptoms/injuries after eye contacthealth hazard. Harmful in contact with skin.: Causes eye irritation.	Symptoms/injuries after inhalation		
	Symptoms/injuries after skin contact		
Symptoms/injuries after ingestion : Swallowing a small quantity of this material will result in serious health hazard.	Symptoms/injuries after eye contact	: Causes eye irritation.	
	Symptoms/injuries after ingestion	: Swallowing a small quantity of this material will result in serious health hazard.	

SECTION 12: Ecological inf	ormation	
12.1. Toxicity		
NNK UNLABELED 2 MG/ML IN A	CETONITRILE	
LC50 fish 1	1640.00 mg/l Pimephales promelas (fathead minnow) - 96h	
EC50 Daphnia 1	3600 mg/l Daphnia magna (Water flea) - 48h	
NOEC (chronic)	640 mg/l Daphnia magna (Water flea) - 14d	
ACETONITRILE UNLABELED (75	i-05-8)	
LC50 fish 1	1640.00 mg/l Pimephales promelas (fathead minnow) - 96h	
EC50 Daphnia 1	3600 mg/l Daphnia magna (Water flea) - 48h	
NOEC (chronic)	640 mg/l Daphnia magna (Water flea) - 14d	

NNK UNLABELED 2 MG/ML IN ACETONITRILE		
Biodegradability	Result: - Readily biodegradable.	
ACETONITRILE UNLABELED (75-05-8)		
Biodegradability	Result: - Readily biodegradable.	
	Biodegradability	

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NNK UNLABELED (64091-91-4)	
Persistence and degradability	Not available.
	NUT available.
12.3. Bioaccumulative potential	
NNK UNLABELED 2 MG/ML IN ACETONITRI	LE
Log Pow	-0.34
Bioaccumulative potential	No bioaccumulation is to be expected (log Pow <= 4).
ACETONITRILE UNLABELED (75-05-8)	
Log Pow	-0.34
Bioaccumulative potential	No bioaccumulation is to be expected (log Pow <= 4).
NNK UNLABELED (64091-91-4)	
Log Pow	0.53
Bioaccumulative potential	Not available.
12.4. Mobility in soil	
NNK UNLABELED 2 MG/ML IN ACETONITRI	
Ecology - soil	Not expected to absorb on soil.
ACETONITRILE UNLABELED (75-05-8)	
Ecology - soil	Not expected to absorb on soil.
**	
NNK UNLABELED (64091-91-4) Ecology - soil	Not available.
	Not available.
12.5. Results of PBT and vPvB assessme	nt
No additional information available	
12.6. Other adverse effects	
Other adverse effects	: Avoid release to the environment.
SECTION 13: Disposal consideration	IS
13.1. Waste treatment methods	
Regional legislation (waste)	: Waste materials should be disposed of under conditions which meet Federal, State, and Local environmental control regulations.
Waste disposal recommendations	: Dispose in a safe manner in accordance with local/national regulations.
Additional information	: Handle empty containers with care because residual vapors are flammable.
SECTION 14: Transport information	
In accordance with ADR / RID / ADNR / IMDG / I	
14.1. UN number	
UN-No.(DOT)	: 1648
DOT NA no.	UN1648
14.2. UN proper shipping name	
DOT Proper Shipping Name	: Acetonitrile
Department of Transportation (DOT) Hazard	: 3 - Class 3 - Flammable and combustible liquid 49 CFR 173.120
Classes	
Hazard labels (DOT)	: 3 - Flammable liquid
	3
Packing group (DOT)	: II - Medium Danger
DOT Special Provisions (49 CFR 172.102)	<ul> <li>IB2 - Authorized IBCs: Metal (31A, 31B and 31N); Rigid plastics (31H1 and 31H2); Composite (31HZ1). Additional Requirement: Only liquids with a vapor pressure less than or equal to 110 kPa at 50 C (1.1 bar at 122 F), or 130 kPa at 55 C (1.3 bar at 131 F) are authorized.</li> <li>T7 - 4 178.274(d)(2) Normal</li></ul>
	$\mathbf{r}_{j}$ and $\mathbf{O} \cup \{\mathbf{r}_{\mathcal{L}} \in J, \mathbf{r}_{j}, \mathbf{r}_{i} \in \mathcal{O}\}$

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DOT Packaging Exceptions (49 CFR 173.xxx)	: 150
DOT Packaging Non Bulk (49 CFR 173.xxx)	: 202
DOT Packaging Bulk (49 CFR 173.xxx)	: 242
14.3. Additional information	
Other information	: No supplementary information available.
Overland transport	
Packing group (ADR)	: 11
Class (ADR)	: 3 - Flammable liquid
Hazard identification number (Kemler No.)	: 33
Classification code (ADR)	: F1
Danger labels (ADR)	: 3 - Flammable liquids
Orange plates	33 1648
Tunnel restriction code	: D/E
Limited quantities (ADR)	1L
EAC	: •2YE
Excepted quantities (ADR)	: E2
Transport by sea	
DOT Vessel Stowage Location	: B - (i) The material may be stowed "on deck" or "under deck" on a cargo vessel and on a
	passenger vessels in which the number of passengers limited to not more than the larger of 25 passengers, or one passenger per each 3 m of overall vessel length; and (ii) "On deck only" of passenger vessels in which the number of passengers specified in paragraph (k)(2)(i) of this section is exceeded.
DOT Vessel Stowage Other	: 40 - Stow "clear of living quarters"
MFAG-No	: 127
Air transport	
DOT Quantity Limitations Passenger aircraft/rail (49 CFR 173.27)	: 5L
DOT Quantity Limitations Cargo aircraft only (49 CFR 175.75)	: 60 L
Civil Aeronautics Law	: Flammable liquids
14.4. Environmental hazards	
Other information	: No supplementary information available.
14.5. Special precautions for user	
14.6. Transport in bulk according to Anne	ex II of MARPOL 73/78 and the IBC Code
Not applicable	

SECTION 15: Regulatory information		
15.1. US Federal regulations		
NNK UNLABELED 2 MG/ML IN ACETONITRILE		
Listed on SARA Section 313 (Specific toxic chemical listings)		
SARA Section 311/312 Hazard Classes	Fire hazard Immediate (acute) health hazard Delayed (chronic) health hazard	
ACETONITRILE UNLABELED (75-05-8)		
Listed on SARA Section 313 (Specific toxic chemical listings)		

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ACETONITRILE UNLABELED (75-05-8)	
SARA Section 311/312 Hazard Classes Immediate (acute) health hazard Delayed (chronic) health hazard	
NNK UNLABELED (64091-91-4)	
SARA Section 311/312 Hazard Classes	Immediate (acute) health hazard Delayed (chronic) health hazard

## 15.2. International regulations

### CANADA

NNK UNLABELED 2 MG/ML IN ACETONITRILE		
Listed	on the Canadian DSL (Domestic Substances List) inventory.	
ACETONITRILE UNLABELED (75-05-8)		
Listed	Listed on the Canadian DSL (Domestic Substances List) inventory.	

## 15.2.1. National regulations

No additional information available

# 15.3. US State regulations NNK UNLABELED 2 MG/ML IN ACETONITRILE() State or local regulations U.S. - Massachusetts - Right To Know List U.S. - Pennsylvania - RTK (Right to Know) List U.S. - New Jersey - Right to Know Hazardous Substance List This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

# ACETONITRILE UNLABELED (75-05-8)

U.S. - Massachusetts - Right To Know List

U.S. - Pennsylvania - RTK (Right to Know) List

U.S. - New Jersey - Right to Know Hazardous Substance List

This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

# NNK UNLABELED (64091-91-4)

- U.S. Massachusetts Right To Know List
- U.S. Pennsylvania RTK (Right to Know) List
- U.S. New Jersey Right to Know Hazardous Substance List
- WARNING! This product contains a chemical known by the state of California to cause cancer.

# **SECTION 16: Other information**

Other information

: This product is not radioactive. The data given for this product are those of the corresponding unlabeled compound, unless specifically indicated otherwise. Health and safety data for labeled compounds are generally not available, but are assumed to be similar or identical to the corresponding unlabeled compound.

## Full text of R-, H- and EUH-phrases::

Acute toxicity (oral) Category 3
Acute toxicity (dermal) Category 4
Acute toxicity (inhalation) Category 4
Acute toxicity (inhalation:vapour) Category 4
Acute toxicity (oral) Category 4
Carcinogenicity Category 2
Serious eye damage/eye irritation Category 2
Flammable liquids Category 2
Skin sensitization Category 1
Highly flammable liquid and vapor
Toxic if swallowed
Harmful if swallowed

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H312	Harmful in contact with skin
H317	May cause an allergic skin reaction
H319	Causes serious eye irritation
H332	Harmful if inhaled
H351	Suspected of causing cancer
R11	Highly flammable
R25	Toxic if swallowed
R40	Limited evidence of a carcinogenic effect
F	Highly flammable
Т	Toxic

NFPA health hazard	: 2 - Intense or continued exposure could cause temporary incapacitation or possible residual injury unless prompt medical attention is given.
NFPA fire hazard	: 3 - Liquids and solids that can be ignited under almost all ambient conditions.
NFPA reactivity	: 0 - Normally stable, even under fire exposure conditions, and are not reactive with water.
HMIS III Rating	
Health	: 2 Moderate Hazard - Temporary or minor injury may occur
Flammability	: 3 Serious Hazard
Physical	: 0 Minimal Hazard

## CIL Mixture SDS

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product