Safety Data Sheet: DUALSOLV II, MM

Supercedes Date 01/25/2012 **Issuing Date** 12/02/2013

1. PRODUCT AND COMPANY IDENTIFICATION

Product Name DUALSOLV II, MM
Recommended use Solvent
Information on Manufacturer
CHEMSEARCH DIV. OF NCH CORP.
BOX 152170
IRVING, TX 75015

Product Code 0344
Chemical nature Solvent mixture
Emergency Telephone Number

Telephone inquiry
972-579-2477

2. HAZARD IDENTIFICATION

Color Colorless **Physical State** Liquid **Odor** Aromatic

GHS Classification

Physical Hazards

Flammable liquids	Category 2

Health Hazard

Aspiration Toxicity	Category 1
Acute Inhalation Toxicity - Vapors	Category 4
Acute Inhalation Toxicity - Dusts and Mists	Category 2
Skin Corrosion/Irritation	Category 2
Serious Eye Damage/Eye Irritation	Category 2
Reproductive Toxicity	Category 2
Specific target organ systemic toxicity (single exposure)	Category 3
Specific target organ systemic toxicity (repeated exposure)	Category 2

Other hazards
None

Labeling
Signal Word
DANGER

Hazard Statements
H225 - Highly flammable liquid and vapor
H330 - Fatal if inhaled
H336 - May cause drowsiness or dizziness
H315 - Causes skin irritation
H320 - Causes eye irritation
H304 - May be fatal if swallowed and enters airways
H373 - May cause damage to organs through prolonged or repeated exposure
H361 - Suspected of damaging fertility or the unborn child

Precautionary Statements
P202 - Do not handle until all safety precautions have been read and understood
P210 - Keep away from heat, sparks, open flames or hot surfaces.
P260 - Do not breathe vapors or mist
P271 - Use in a well-ventilated area.
P270 - Do not eat, drink or smoke when using this product
P280 - Wear protective gloves, protective clothing and eye protection.
P264 - Wash face, hands and any exposed skin thoroughly after handling.
P304 + P340 - IF INHALED: Remove person to fresh air and keep at rest in a position comfortable for breathing.
P310 - Immediately call a physician
P303 + P361 + P353 - IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower
P332 + P313 - If skin irritation occurs, get medical attention.
P362 - Take off contaminated clothing and wash before reuse
P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P337 + P313 - If eye irritation persists, get medical attention.
P301+ P330 + P331 - IF SWALLOWED: Rinse mouth. DO NOT induce vomiting. Call a physician if unwell.
P403 + P235 - Store in a well-ventilated place. Keep cool
P233 - Keep container tightly closed
P501 - Dispose of contents and container in accordance with applicable regulations.

3. COMPOSITION / INFORMATION ON INGREDIENTS

Component	CAS-No	Weight %
Methyl acetate	79-20-9	40-70
Toluene	108-88-3	10-30
Hexane	110-54-3	5-10
Naphtha, petroleum, hydrotreated light	64742-49-0	3-7
Solvent naphtha (petroleum), light aliphatic	64742-89-8	3-7
Heptane (n-)	142-82-5	1-5
Cyclohexane	110-82-7	1-5
Methylcyclopentane	96-37-7	1-5
Methyl alcohol	67-56-1	1-5

4. FIRST AID MEASURES

General advice Avoid breathing vapors or mists. Avoid contact with skin, eyes and clothing.

Eye Contact Rinse thoroughly with plenty of water, also under the eyelids. Get medical attention if irritation develops and persists.

Skin Contact Wash off immediately with plenty of water for at least 15 minutes. Remove contaminated clothing and shoes. Get medical attention if irritation develops and persists. Wash contaminated clothing before re-use.

Inhalation If inhaled, remove to fresh air. Get medical attention if symptoms occur.

Ingestion Drink 1 or 2 glasses of water. Do NOT induce vomiting. Get medical attention if symptoms occur. Rinse mouth.

Notes to physician Aspiration hazard if swallowed - can enter lungs and cause damage. May be fatal if swallowed and enters airways. Inhalation of vapors in high concentration can cause narcotic effects and metabolic acidosis.

5. FIRE-FIGHTING MEASURES

Flash Point 55 °F / 13 °C **Method** Seta closed cup

Flammability Limits in Air % Solvent mixture. **Upper** 16 **Lower** 1

Suitable Extinguishing Media

Water spray. Carbon dioxide (CO2). Dry chemical. Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Specific hazards arising from the chemical

Flammable. Solvent vapors are heavier than air and may spread along floors. Vapors may ignite and explode. Material can create slippery conditions.

Protective Equipment and Precautions for Firefighters

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

NFPA	**Health** 2	**Flammability** 3	**Instability** 0
HMIS	**Health** 2	**Flammability** 3	**Instability** 0

6. ACCIDENTAL RELEASE MEASURES

Personal Precautions Use personal protective equipment. Remove all sources of ignition. Ensure adequate ventilation. Prevent further leakage or spillage if safe to do so. Material can create slippery conditions.

Environmental Precautions Do not flush into surface water or sanitary sewer system.

Methods for Containment Contain spillage, soak up with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and transfer to a container for disposal according to local / national regulations (see section 13).

Methods for Cleaning Up Use clean non-sparking tools to collect absorbed material. Pick up and transfer to properly labeled containers.

Neutralizing Agent Not applicable.

7. HANDLING AND STORAGE

Handling Keep away from open flames, hot surfaces and sources of ignition. Avoid breathing vapors or mists. Avoid contact with skin, eyes and clothing.

Storage Keep away from heat and sources of ignition. Store in original container. Keep containers tightly closed in a dry, cool and well-ventilated place.

Storage Temperature **Minimum** 35 °F / 2 °C **Maximum** 120 °F / 49 °C

Storage Conditions **Indoor** X **Outdoor** **Heated** **Refrigerated**

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Exposure Guidelines

Component	ACGIH TLV	OSHA PEL	NIOSH
Methyl acetate	TWA: 200 ppm STEL: 250 ppm	TWA: 200 ppm TWA: 610 mg/m^3	IDLH: 3100 ppm STEL 250 ppm STEL 760 mg/m^3 TWA: 200 ppm TWA: 610 mg/m^3
Toluene	TWA: 20 ppm	TWA: 200 ppm Ceiling: 300 ppm	IDLH: 500 ppm STEL 150 ppm STEL 560 mg/m^3 TWA: 100 ppm TWA: 375 mg/m^3
Hexane	TWA: 50 ppm Skin	TWA: 500 ppm TWA: 1800 mg/m^3	IDLH: 1100 ppm TWA: 50 ppm TWA: 180 mg/m^3
Naphtha, petroleum, hydrotreated light	No data available	No data available	No data available
Solvent naphtha (petroleum), light aliphatic	No data available	No data available	No data available
Heptane (n-)	TWA: 400 ppm STEL: 500 ppm	TWA: 500 ppm TWA: 2000 mg/m^3	IDLH: 750 ppm Ceiling: 440 ppm Ceiling: 1800 mg/m^3 TWA: 85 ppm TWA: 350 mg/m^3
Cyclohexane	TWA: 100 ppm	TWA: 300 ppm TWA: 1050 mg/m^3	IDLH: 1300 ppm TWA: 300 ppm TWA: 1050 mg/m^3
Methylcyclopentane	No data available	No data available	No data available
Methyl alcohol	TWA: 200 ppm Skin STEL: 250 ppm	TWA: 200 ppm TWA: 260 mg/m^3	IDLH: 6000 ppm STEL 250 ppm STEL 325 mg/m^3 TWA: 200 ppm TWA: 260 mg/m^3

Engineering Measures Ensure adequate ventilation, especially in confined areas. Where reasonably practicable this should be achieved by the use of local exhaust ventilation and good general extraction.

Personal Protective Equipment

Eye/Face Protection Safety glasses with side-shields.

Skin Protection Wear suitable protective clothing, Impervious gloves.

Respiratory Protection In case of inadequate ventilation wear respiratory protection. When workers are facing concentrations above the exposure limit they must use appropriate certified respirators.

General Hygiene Considerations Ensure that eyewash stations and safety showers are close to the workstation location. Remove and wash contaminated clothing before re-use. Do not eat, drink or smoke when using this product.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State	Liquid	**Viscosity**	Non viscous
Color	Colorless	**Odor**	Aromatic
Odor Threshold	Not applicable	**Appearance**	Transparent
pH	Not applicable	**Specific Gravity**	0.841
Evaporation Rate	9.76 (BuAc = 1)	**Percent Volatile (Volume)**	100
VOC Content (%)	44	**VOC Content (g/L)**	370
Vapor Pressure	165.8 mmHg @ 70°F	**Vapor Density**	2.7 (air = 1)
Solubility	Insoluble	**n-Octanol/Water Partition**	No data available
Melting Point/Range	No data available	**Decomposition Temperature**	No data available
Boiling Point/Range	145 °F / 63 °C	**Flammability (solid, gas)**	No data available
Flash Point	55 °F / 13 °C	**Method**	Seta closed cup
Autoignition Temperature	No information available.		
Flammability Limits in Air %	Solvent mixture.	**Upper** 16 **Lower** 1	

10. STABILITY AND REACTIVITY

Chemical Stability	Stable. Hazardous polymerization does not occur.
Conditions to Avoid	Keep away from open flames, hot surfaces, and sources of ignition
Incompatible Products	Strong oxidizing agents, Reducing agents, Acids and bases, Amines.
Hazardous Decomposition Products	Carbon oxides, Organic materials.
Possibility of Hazardous Reactions	None under normal processing

11. TOXICOLOGICAL INFORMATION

Product Information

The following values are calculated based on chapter 3.1 of the GHS document (Rev. 3, 2009):

Oral LD50 2,276.32
Dermal LD50 2,567.13
Inhalation LC50
Gas 21,982.55
Mist 52.06
Vapor 52.06

Principle Route of Exposure Skin contact, Eye contact, Inhalation.
Primary Routes of Entry Inhalation, Skin Absorption.
Acute Effects
Eyes Causes eye irritation.
Skin Causes skin irritation. May be absorbed through the skin in harmful amounts. Substance may be absorbed through the skin which can contribute to damage to the optic nerve resulting in permanent vision changes, loss of vision, or total blindness.
Inhalation May cause irritation of respiratory tract. Inhalation may cause central nervous system effects. May cause central nervous system depression. Symptoms and signs include headache, dizziness, fatigue, muscular weakness, drowsiness and in extreme cases, loss of consciousness. Inhalation of vapors in high concentration can cause narcotic effects and metabolic acidosis.
Ingestion Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea. May cause damage to the kidneys/liver/eyes/brain/digestive system/central nervous system if swallowed. Blood disorder may occur after ingestion. Symptoms of overexposure may be headache, dizziness, tiredness, nausea and vomiting. Acidosis. Aspiration hazard if swallowed - can enter lungs and cause damage. May be fatal if swallowed and enters airways.
Chronic Toxicity Repeated and prolonged exposure to solvents may cause brain and nervous system damage. Liver and kidney injuries may occur. Contains a known or suspected reproductive toxin.
Target Organ Effects Central nervous system, Respiratory system, Kidney, Liver, Reproductive System, Peripheral Nervous System (PNS), Heart, Blood, Pancreas, Skin, Gastrointestinal tract, Eyes, Spleen.
Aggravated Medical Conditions Neurological disorders, Respiratory disorders, Kidney disorders, Liver disorders, Heart disease, Blood disorders, Skin disorders.

Component Information
Acute Toxicity

Component	LD50 Oral	LD50 Dermal	LC50 Inhalation	Draize Test	Other
Methyl acetate	> 5000 mg/kg (Rat)	> 5 g/kg (Rabbit)	= 16000 ppm (Rat) 4 h	no data available	no data available
Toluene	= 636 mg/kg (Rat)	= 8390 mg/kg (Rabbit) = 12124 mg/kg (Rat)	= 12.5 mg/L (Rat) 4 h > 26700 ppm (Rat) 1 h	no data available	no data available
Hexane	no data available	= 3000 mg/kg (Rabbit)	= 48000 ppm (Rat) 4 h	no data available	no data available
Naphtha, petroleum, hydrotreated light	> 5000 mg/kg (Rat)	> 3160 mg/kg (Rabbit)	= 73680 ppm (Rat) 4 h	no data available	no data available
Solvent naphtha (petroleum), light aliphatic	no data available	= 3000 mg/kg (Rabbit)	no data available	no data available	no data available
Heptane (n-)	no data available	= 3000 mg/kg (Rabbit)	= 103 g/m^3 (Rat) 4 h	no data available	no data available
Cyclohexane	> 5000 mg/kg (Rat)	> 2000 mg/kg (Rabbit)	= 13.9 mg/L (Rat) 4 h	no data available	no data available
Methylcyclopentane	no data available	no data available	no data available	no data available	no data available
Methyl alcohol	= 5628 mg/kg (Rat)	no data available	= 83.2 mg/L (Rat) 4 h	no data available	no data available

Chronic Toxicity

Component	Mutagenicity	Sensitization	Developmental Toxicity	Reproductive Toxicity	Target Organ Effects
Methyl acetate	no data available	no data available	no data available	no data available	eyes, CNS, respiratory system, skin
Toluene	no data available	no data available	yes	yes	CNS, eyes, kidneys, liver, respiratory system, skin, reproductive system
Hexane	no data available	no data available	no data available	yes	eyes, CNS, respiratory system, auditory system, skin, PNS, heart
Naphtha, petroleum, hydrotreated light	no data available	no data available	no data available	no data available	no data available
Solvent naphtha (petroleum), light aliphatic	no data available	no data available	no data available	no data available	no data available
Heptane (n-)	no data available	no data available	no data available	no data available	skin, CNS, respiratory system, heart
Cyclohexane	no data available	no data available	no data available	no data available	eyes, CNS, kidneys, respiratory system, skin
Methylcyclopentane	no data available	no data available	no data available	no data available	no data available
Methyl alcohol	no data available	no data available	x	no data available	eyes, CNS, skin, GI tract, respiratory system, kidney, spleen, liver, blood, pancreas, heart,

					reproductive system

Carcinogenicity

Component	ACGIH	IARC	NTP	OSHA	Other
Methyl acetate	not applicable	not applicable	not applicable	not applicable	not applicable
Toluene	not applicable	not applicable	not applicable	not applicable	not applicable
Hexane	not applicable	not applicable	not applicable	not applicable	not applicable
Naphtha, petroleum, hydrotreated light	not applicable	not applicable	not applicable	not applicable	not applicable
Solvent naphtha (petroleum), light aliphatic	not applicable	not applicable	not applicable	not applicable	not applicable
Heptane (n-)	not applicable	not applicable	not applicable	not applicable	not applicable
Cyclohexane	not applicable	not applicable	not applicable	not applicable	not applicable
Methylcyclopentane	not applicable	not applicable	not applicable	not applicable	not applicable
Methyl alcohol	not applicable	not applicable	not applicable	not applicable	not applicable

12. ECOLOGICAL INFORMATION

Product Information No information available.

Component Information

Component	Toxicity to Algae	Toxicity to Fish	Microtox	Water Flea	log Pow
Methyl acetate	EC50 > 120 mg/L Desmodesmus subspicatus 72 h	LC50 295 - 348 mg/L Pimephales promelas 96 h LC50 250 - 350 mg/L Brachydanio rerio 96 h	EC50 = 6000 mg/L 16 h EC50 = 6100 mg/L 30 min	EC50= 1026.7 mg/L 48 h	0.18
Toluene	EC50 > 433 mg/L Pseudokirchneriella subcapitata 96 h EC50 = 12.5 mg/L Pseudokirchneriella subcapitata 72 h	LC50 15.22 - 19.05 mg/L Pimephales promelas 96 h LC50 = 12.6 mg/L Pimephales promelas 96 h LC50 5.89 - 7.81 mg/L Oncorhynchus mykiss 96 h LC50 14.1 - 17.16 mg/L Oncorhynchus mykiss 96 h LC50 = 5.8 mg/L Oncorhynchus mykiss 96 h LC50 11.0 - 15.0 mg/L Lepomis macrochirus 96 h LC50 = 54 mg/L Oryzias latipes 96 h LC50 = 28.2 mg/L Poecilia reticulata 96 h LC50 50.87 - 70.34 mg/L Poecilia reticulata 96 h	EC50 = 19.7 mg/L 30 min	EC50 5.46 - 9.83 mg/L 48 h EC50= 11.5 mg/L 48 h	2.65
Hexane	no data available	LC50 2.1 - 2.98 mg/L Pimephales promelas 96 h	no data available	EC50> 1000 mg/L 24 h	N/A
Naphtha, petroleum, hydrotreated light	no data available	no data available	no data available	LC50= 2.6 mg/L 96 h	N/A
Solvent naphtha (petroleum), light aliphatic	EC50 = 4700 mg/L Pseudokirchneriella subcapitata 72 h	no data available	no data available	no data available	N/A
Heptane (n-)	no data available	LC50 = 375.0 mg/L Cichlid fish 96 h	no data available	EC50> 10 mg/L 24 h	4.66
Cyclohexane	EC50 > 500 mg/L Desmodesmus subspicatus 72 h	LC50 3.96 - 5.18 mg/L Pimephales promelas 96 h LC50 23.03 - 42.07 mg/L Pimephales promelas 96 h LC50 24.99 - 44.69 mg/L Lepomis macrochirus 96 h LC50 48.87 - 68.76 mg/L Poecilia reticulata 96 h	EC50 = 85.5 mg/L 5 min EC50 = 93 mg/L 10 min	EC50> 400 mg/L 24 h	3.44
Methylcyclopentane	no data available	no data available	no data available	no data available	N/A
Methyl alcohol	no data available	LC50 = 28200 mg/L Pimephales promelas 96 h LC50 > 100 mg/L Pimephales promelas 96 h LC50 19500 - 20700 mg/L Oncorhynchus mykiss 96 h LC50 18 - 20 mL/L Oncorhynchus mykiss 96 h LC50 13500 - 17600 mg/L Lepomis macrochirus 96 h	EC50 = 39000 mg/L 25 min EC50 = 40000 mg/L 15 min EC50 = 43000 mg/L 5 min	no data available	-0.77

Persistence and Degradability No information available.

Bioaccumulation No information available.

Mobility No information available.

13. DISPOSAL CONSIDERATIONS

Product Disposal Dispose of in accordance with local regulations.
Container Disposal Empty containers should be taken for local recycling, recovery, or waste disposal.

14. TRANSPORT INFORMATION

DOT

Proper Shipping Name	Flammable liquids, n.o.s.
Hazard Class	3
UN-No	UN1993
Packing Group	II
Description	Flammable liquids, n.o.s.(Methyl acetate, Toluene),3,UN1993,PG II

TDG

Proper shipping name	Flammable liquid, n.o.s
Hazard Class	3
UN-No	UN1993
Packing Group	II

ICAO

UN-No	UN1993
Proper Shipping Name	Flammable liquid, n.o.s.
Hazard Class	3
Packing Group	II
Shipping Description	Flammable liquid, n.o.s.(Methyl acetate,Toluene),3,UN1993,PG II

IATA

UN-No	UN1993
Proper Shipping Name	Flammable liquid, n.o.s.
Hazard Class	3
Packing Group	II
ERG Code	3H
Shipping Description	UN1993,Flammable liquid, n.o.s.(Methyl acetate,Toluene),3,PG II

IMDG/IMO

Proper Shipping Name	Flammable liquid, n.o.s.
Hazard Class	3
UN-No	UN1993
Packing Group	II
EmS No.	F-E, _S-E_
Shipping Description	UN1993, Flammable liquid, n.o.s.(Methyl acetate,Toluene),3,PG II

15. REGULATORY INFORMATION

Inventories
TSCA Complies
DSL Complies
U.S. Federal Regulations
SARA 313
Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product contains a chemical or chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372

Component	CAS-No	Weight %	SARA 313 - Threshold Values
Toluene	108-88-3	10-30	1.0
Hexane	110-54-3	5-10	1.0
Cyclohexane	110-82-7	1-5	1.0
Methyl alcohol	67-56-1	1-5	1.0

SARA 311/312 Hazardous Categorization

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

CERCLA

Component	Hazardous Substances RQs	CERCLA EHS RQs
Methyl acetate	Not applicable	Not applicable

Toluene	1000 lb	Not applicable
Hexane	5000 lb	Not applicable
Naphtha, petroleum, hydrotreated light	Not applicable	Not applicable
Solvent naphtha (petroleum), light aliphatic	Not applicable	Not applicable
Heptane (n-)	Not applicable	Not applicable
Cyclohexane	1000 lb	Not applicable
Methylcyclopentane	Not applicable	Not applicable
Methyl alcohol	5000 lb	Not applicable

16. OTHER INFORMATION

Prepared By Sarah Williamson
Supercedes Date 01/25/2012
Issuing Date 12/02/2013
Reason for Revision No information available.
Glossary No information available.
List of References. No information available.

CHEMSEARCH DIV. OF NCH CORP.assumes no responsibility for personal injury or property damage caused by the use, storage, or disposal of the product in a manner not recommended on the product label. Users assume all risks associated with such unrecommended use, storage or disposal of the product. The information provided on this document is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guide for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered as a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other material or in any process, unless specified in the text.