



SAFETY DATA SHEET

ZX-54

According to Regulation (EC) No 1907/2006, Annex II, as amended.

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Product name ZX-54
Internal identification C410

1.2. Relevant identified uses of the substance or mixture and uses advised against

Identified uses Releasing agent. Lubricant.
Uses advised against Use only for intended applications.

1.3. Details of the supplier of the safety data sheet

Supplier ARROW SOLUTIONS
RAWDON ROAD
MOIRA
SWADLINCOTE
DERBYSHIRE
DE12 6DA
TEL: +44 (0)1283 221044
FAX: +44 (0)1283 225731
sales@arrowchem.com

1.4. Emergency telephone number

Emergency telephone +44 (0) 777 8505 330 (24 hrs).

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification (EC 1272/2008)

Physical hazards Not Classified
Health hazards Asp. Tox. 1 - H304
Environmental hazards Not Classified

2.2. Label elements

Hazard pictograms



Signal word Danger
Hazard statements H304 May be fatal if swallowed and enters airways.

ZX-54

Precautionary statements P280 Wear protective gloves.
P301+P330+P331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
P310 Immediately call a POISON CENTER/ doctor.
P501 Dispose of contents/ container in accordance with national regulations.

Supplemental label information EUH066 Repeated exposure may cause skin dryness or cracking.

UFI UFI: 9N40-60Y7-700Y-4NDN

Contains ISOPARAFFINIC HYDROCARBON

2.3. Other hazards

This product does not contain any substances classified as PBT or vPvB.

SECTION 3: Composition/information on ingredients**3.2. Mixtures**

ISOPARAFFINIC HYDROCARBON	60-100%
CAS number: 90622-58-5	EC number: 920-901-0
	REACH registration number: 01-2119456810-40-XXXX

Classification

Asp. Tox. 1 - H304

(2-methoxymethylethoxy) propanol	1-5%
CAS number: 34590-94-8	EC number: 252-104-2
	REACH registration number: 01-2119450011-60-XXXX

Classification

Not Classified

ISOPROPYL MYRISTATE	1-5%
CAS number: 110-27-0	EC number: 203-751-4
	REACH registration number: 01-2119541806-35-XXXX

Classification

Not Classified

The Full Text for all R-Phrases and Hazard Statements are Displayed in Section 16.

SECTION 4: First aid measures**4.1. Description of first aid measures**

General information Get medical attention immediately. If medical advice is needed, have product container or label at hand. Show this Safety Data Sheet to the medical personnel.

Inhalation Move affected person to fresh air and keep warm and at rest in a position comfortable for breathing.

Ingestion Rinse mouth thoroughly with water. Do not induce vomiting. Get medical attention immediately.

Skin contact Wash skin thoroughly with soap and water. Use suitable lotion to moisturise skin.

ZX-54

Eye contact Rinse immediately with plenty of water. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention if any discomfort continues.

4.2. Most important symptoms and effects, both acute and delayed

Inhalation Vapours may cause headache, fatigue, dizziness and nausea.

Ingestion Aspiration hazard if swallowed. May be fatal if swallowed and enters airways.

Skin contact Repeated exposure may cause skin dryness or cracking.

Eye contact May cause discomfort.

4.3. Indication of any immediate medical attention and special treatment needed

Notes for the doctor Treat symptomatically.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media Extinguish with alcohol-resistant foam, carbon dioxide or dry powder.

5.2. Special hazards arising from the substance or mixture

Hazardous combustion products Thermal decomposition or combustion products may include the following substances: Carbon monoxide (CO). Carbon dioxide (CO₂).

5.3. Advice for firefighters

Protective actions during firefighting Cool containers exposed to flames with water until well after the fire is out.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Personal precautions No smoking, sparks, flames or other sources of ignition near spillage. Use suitable respiratory protection if ventilation is inadequate. Wear protective clothing, gloves, eye and face protection. Do not touch or walk into spilled material. Avoid contact with skin, eyes and clothing. Provide adequate ventilation. Take care as floors and other surfaces may become slippery. Avoid contact with contaminated tools and objects. Do not handle broken packages without protective equipment. Ensure suitable respiratory protection is worn during removal of spillages in confined areas. Take precautionary measures against static discharges. Wash thoroughly after dealing with a spillage.

6.2. Environmental precautions

Environmental precautions Do not discharge into drains or watercourses or onto the ground.

6.3. Methods and material for containment and cleaning up

Methods for cleaning up Eliminate all sources of ignition. No smoking, sparks, flames or other sources of ignition near spillage. Wear suitable protective equipment, including gloves, goggles/face shield, respirator, boots, clothing or apron, as appropriate. Provide adequate ventilation. Absorb spillage with sand or other inert absorbent. Collect and place in suitable waste disposal containers and seal securely. Containers with collected spillage must be properly labelled with correct contents and hazard symbol. Wash thoroughly after dealing with a spillage.

6.4. Reference to other sections

Reference to other sections Wear protective clothing as described in Section 8 of this safety data sheet.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

ZX-54

Usage precautions Wear protective gloves. Provide adequate ventilation. Do not eat, drink or smoke when using this product. Avoid contact with skin, eyes and clothing. Wash hands thoroughly after handling. Do not use in confined spaces without adequate ventilation and/or respirator. If ventilation is inadequate, suitable respiratory protection must be worn. Do not reuse empty containers. Do not empty into drains. Avoid contact with contaminated tools and objects. Do not handle broken packages without protective equipment. Wash hands thoroughly after handling.

7.2. Conditions for safe storage, including any incompatibilities

Storage precautions Store at temperatures between 4°C and 40°C. Keep container tightly closed and in a well-ventilated place.

Storage class Miscellaneous hazardous material storage.

7.3. Specific end use(s)

Specific end use(s) The identified uses for this product are detailed in Section 1.2.

SECTION 8: Exposure controls/Personal protection

8.1. Control parameters

Occupational exposure limits

ISOPARAFFINIC HYDROCARBON

Long-term exposure limit (8-hour TWA): WEL 171 ppm 1200 mg/m³

(2-methoxymethylethoxy) propanol

Long-term exposure limit (8-hour TWA): WEL 50 ppm 308 mg/m³

Sk

WEL = Workplace Exposure Limit

Sk = Can be absorbed through the skin.

ISOPARAFFINIC HYDROCARBON (CAS: 90622-58-5)

DNEL Industry - Dermal; : N/A
 Industry - Inhalation; : N/A
 Consumer - Dermal; : N/A
 Consumer - Inhalation; : N/A
 Consumer - Oral; : N/A

PNEC - Fresh water; N/A
 - marine water; N/A
 - Soil; N/A
 - Sediment; N/A
 - water; N/A
 - STP; N/A
 - Sediment (Freshwater); N/A
 - Sediment (Marinewater); N/A
 - Intermittent release; N/A

(2-methoxymethylethoxy) propanol (CAS: 34590-94-8)

DNEL Industry - Dermal; Long term : 65 mg/kg/day
 Industry - Inhalation; Long term : 310 mg/m³
 Consumer - Inhalation; Long term : 37.2 mg/m³
 Consumer - Dermal; Long term : 15 mg/kg/day
 Consumer - Oral; Long term : 1.67 mg/kg/day

ZX-54

PNEC	<ul style="list-style-type: none"> - Fresh water; 19 mg/l - marine water; 1.9 mg/l - Intermittent release; 19 mg/l - STP; 4168 mg/l - Sediment (Freshwater); 70.2 mg/kg - Sediment (Marinewater); 7.02 mg/kg - Soil; 2.74 mg/kg
-------------	------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

ISOPROPYL MYRISTATE (CAS: 110-27-0)

DNEL	Workers - Dermal; : 33 mg/kg/day Workers - Inhalation; : 23.5 mg/m ³
-------------	------------------------------------------------------------------------------------

PNEC	<ul style="list-style-type: none"> - Soil; 20 mg/kg - Fresh water, Sediment; 1.44 mg/kg - marine water, Sediment; 1.44 mg/kg
-------------	---------------------------------------------------------------------------------------------------------------------------------------------------------------

8.2. Exposure controls**Protective equipment****Appropriate engineering controls**

Observe any occupational exposure limits for the product or ingredients.

Eye/face protection

Eyewear complying with an approved standard should be worn if a risk assessment indicates eye contact is possible. Personal protective equipment for eye and face protection should comply with European Standard EN166. The following protection should be worn: Tight-fitting safety glasses.

Hand protection

Chemical-resistant, impervious gloves complying with an approved standard should be worn if a risk assessment indicates skin contact is possible. The most suitable glove should be chosen in consultation with the glove supplier/manufacturer, who can provide information about the breakthrough time of the glove material. To protect hands from chemicals, gloves should comply with European Standard EN374. The selected gloves should have a breakthrough time of at least 4 hours. Considering the data specified by the glove manufacturer, check during use that the gloves are retaining their protective properties and change them as soon as any deterioration is detected. The breakthrough time for any glove material may be different for different glove manufacturers. It should be noted that liquid may penetrate the gloves. Frequent changes are recommended. Protective gloves should have a minimum thickness of 0.15 mm. Glove thickness is not necessarily a good measure of glove resistance as the permeation rate will depend on the exact glove composition. For work of short duration or where a high degree of manual dexterity is needed, use protective gloves made of: Nitrile rubber. Thickness: > 0.2 mm Chloroprene rubber. Thickness: > 0.7 mm Polyvinyl chloride (PVC). Thickness: > 1.5 mm The choice of protective gloves depends upon the chemicals being handled, and the conditions of work and use. Repeated exposure to chemicals will degrade the ability of the glove to provide resistance to chemicals. Specific work environments and material handling practices may vary, therefore safety procedures should be developed for each intended application.

Hygiene measures

Wash skin thoroughly after handling. Wash contaminated clothing before reuse.

ZX-54

Respiratory protection

Respiratory protection complying with an approved standard should be worn if a risk assessment indicates inhalation of contaminants is possible. Respirator selection must be based on exposure levels, the hazards of the product and the safe working limits of the selected respirator. Ensure all respiratory protective equipment is suitable for its intended use and is 'CE'-marked. Respiratory protection must be used if the airborne contamination exceeds the recommended occupational exposure limit. If ventilation is inadequate, suitable respiratory protection must be worn. Check that the respirator fits tightly and the filter is changed regularly. Half mask and quarter mask respirators with replaceable filter cartridges should comply with European Standard EN140. Gas and combination filter cartridges should comply with European Standard EN14387. Particulate filters should comply with European Standard EN143. Disposable filtering half mask respirators should comply with European Standard EN149 or EN405. Check that the respirator fits tightly and the filter is changed regularly. Wear a respirator fitted with the following cartridge: Combination filter, type A2/P2. Organic vapour + dust and mist filter.

Environmental exposure controls

Store in a demarcated bunded area to prevent release to drains and/or watercourses. Residues and empty containers should be taken care of as hazardous waste according to local and national provisions.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Appearance	Clear liquid.
Colour	Brown.
Odour	Slight. Hydrocarbons.
pH	Not applicable.
Melting point	Not determined.
Initial boiling point and range	Not determined.
Flash point	> 62°C Pensky-Martens closed cup.
Evaporation rate	Not determined.
Flammability (solid, gas)	Not applicable.
Upper/lower flammability or explosive limits	Not determined.
Other flammability	Not determined.
Vapour pressure	Not determined.
Relative density	~ 0.80 @ 20°C
Solubility(ies)	Immiscible with water.
Partition coefficient	Not determined.
Auto-ignition temperature	Not determined.
Decomposition Temperature	Not applicable.
Viscosity	Kinematic viscosity ≤ 20.5 mm ² /s.
Explosive properties	There are no chemical groups present in the product that are associated with explosive properties.
Oxidising properties	There are no chemical groups present in the product that are associated with oxidising properties.

ZX-54

Comments Information declared as "Not available" or "Not applicable" is not considered to be relevant to the implementation of the proper control measures.

9.2. Other information

Other information Not determined.

SECTION 10: Stability and reactivity**10.1. Reactivity**

Reactivity There are no known reactivity hazards associated with this product.

10.2. Chemical stability

Stability Stable at normal ambient temperatures and when used as recommended.

10.3. Possibility of hazardous reactions

Possibility of hazardous reactions Not determined.

10.4. Conditions to avoid

Conditions to avoid Avoid heat, flames and other sources of ignition.

10.5. Incompatible materials

Materials to avoid Flammable/combustible materials.

10.6. Hazardous decomposition products

Hazardous decomposition products Thermal decomposition or combustion products may include the following substances: Carbon monoxide (CO). Carbon dioxide (CO₂).

SECTION 11: Toxicological information**11.1. Information on toxicological effects****Acute toxicity - oral**

Notes (oral LD₅₀) Based on available data the classification criteria are not met.

Acute toxicity - dermal

Notes (dermal LD₅₀) Based on available data the classification criteria are not met.

Acute toxicity - inhalation

Notes (inhalation LC₅₀) Based on available data the classification criteria are not met.

Skin corrosion/irritation

Skin corrosion/irritation Based on available data the classification criteria are not met.

Serious eye damage/irritation

Serious eye damage/irritation Based on available data the classification criteria are not met.

Respiratory sensitisation

Respiratory sensitisation Based on available data the classification criteria are not met.

Skin sensitisation

Skin sensitisation Based on available data the classification criteria are not met.

Germ cell mutagenicity

Genotoxicity - in vitro Does not contain any substances known to be mutagenic.

Carcinogenicity

Carcinogenicity Does not contain any substances known to be carcinogenic.

ZX-54**Reproductive toxicity****Reproductive toxicity - fertility** Does not contain any substances known to be toxic to reproduction.**Specific target organ toxicity - single exposure****STOT - single exposure** Based on available data the classification criteria are not met.**Specific target organ toxicity - repeated exposure****STOT - repeated exposure** Based on available data the classification criteria are not met.**Aspiration hazard****Aspiration hazard** May be fatal if swallowed and enters airways. Aspiration hazard if swallowed. Kinematic viscosity $\leq 20.5 \text{ mm}^2/\text{s}$.**Inhalation** Vapours may cause headache, fatigue, dizziness and nausea.**Ingestion** Aspiration hazard if swallowed. May be fatal if swallowed and enters airways.**Skin contact** Repeated exposure may cause skin dryness or cracking.**Eye contact** May cause discomfort.**Acute and chronic health hazards** Prolonged contact may cause dryness of the skin. Defatting, drying and cracking of skin. Nausea, vomiting.**Route of exposure** Ingestion Inhalation Oral Skin and/or eye contact**Target organs** Respiratory system, lungs Skin Gastro-intestinal tract**Medical symptoms** Dry skin. Dryness and/or cracking. Nausea, vomiting. Coughing. Headache.**Toxicological information on ingredients.****ISOPARAFFINIC HYDROCARBON****Acute toxicity - oral****Acute toxicity oral (LD₅₀ mg/kg)** 5,000.0**Species** Rat**Acute toxicity - dermal****Acute toxicity dermal (LD₅₀ mg/kg)** 5,000.0**Species** Rabbit**(2-methoxymethylethoxy) propanol****Acute toxicity - oral****Acute toxicity oral (LD₅₀ mg/kg)** 5,382.66**Species** Rat**ATE oral (mg/kg)** 5,382.66**Acute toxicity - dermal****Acute toxicity dermal (LD₅₀ mg/kg)** 5,001.0

ZX-54

Species Rabbit

ATE dermal (mg/kg) 5,001.0

Acute toxicity - inhalation

Acute toxicity inhalation (LC₅₀ vapours mg/l) 3,080.0

Species Rat

ATE inhalation (vapours mg/l) 3,080.0

ISOPROPYL MYRISTATE**Acute toxicity - oral**

Acute toxicity oral (LD₅₀ mg/kg) 2,001.0

Species Rat

ATE oral (mg/kg) 2,001.0

Acute toxicity - dermal

Acute toxicity dermal (LD₅₀ mg/kg) 5.3

Species Rat

Acute toxicity - inhalation

Acute toxicity inhalation (LC₅₀ vapours mg/l) 5.3

Species Rat

SECTION 12: Ecological information

Ecotoxicity Not regarded as dangerous for the environment.

12.1. Toxicity**Acute aquatic toxicity**

Acute toxicity - fish Not determined.

Chronic aquatic toxicity

Chronic toxicity - fish early life stage Not determined.

Ecological information on ingredients.**(2-methoxymethylethoxy) propanol****Acute aquatic toxicity**

Acute toxicity - fish LC50, 96 hours: > 1000 mg/l, Poecilia reticulata (Guppy)

Acute toxicity - aquatic invertebrates NOEC, >: > 0.5 mg/l, Daphnia magna
EC₅₀, 48 hours: 1919 mg/l, Daphnia magna

Acute toxicity - aquatic plants EC₅₀, 96 hours: > 969 mg/l, Selenastrum capricornutum

ZX-54**ISOPROPYL MYRISTATE****Acute aquatic toxicity**

Acute toxicity - fish	LC ₅₀ , 96 hours: >1000 mg/l, Fish LC ₅₀ , 48 hours: >1000 mg/l, Cyprinus carpio (Common carp) LC ₅₀ , 96 hours: >1000 mg/l, Lepomis macrochirus (Bluegill)
Acute toxicity - aquatic invertebrates	EC ₅₀ , 48 hours: >100 mg/l, Daphnia magna
Acute toxicity - aquatic plants	EC ₅₀ , 72 hours: 100 mg/l, Freshwater algae

12.2. Persistence and degradability

Persistence and degradability The product is expected to be biodegradable.

12.3. Bioaccumulative potential

Bioaccumulative potential The product does not contain any substances expected to be bioaccumulating.

Partition coefficient Not determined.

12.4. Mobility in soil

Mobility The product contains volatile organic compounds (VOCs) which will evaporate easily from all surfaces. The product is insoluble in water and will spread on the water surface.

12.5. Results of PBT and vPvB assessment

Results of PBT and vPvB assessment This product does not contain any substances classified as PBT or vPvB.

12.6. Other adverse effects

Other adverse effects Not determined.

SECTION 13: Disposal considerations**13.1. Waste treatment methods**

Disposal methods Disposal of this product, process solutions, residues and by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any local authority requirements.

SECTION 14: Transport information

General The product is not covered by international regulations on the transport of dangerous goods (IMDG, IATA, ADR/RID).

Special Provisions note**14.1. UN number**

Not applicable.

14.2. UN proper shipping name

Not applicable.

14.3. Transport hazard class(es)

No transport warning sign required.

14.4. Packing group

Not applicable.

ZX-54**14.5. Environmental hazards****Environmentally hazardous substance/marine pollutant**

No.

14.6. Special precautions for user

Not applicable.

14.7. Transport in bulk according to Annex II of MARPOL and the IBC Code

Transport in bulk according to Not applicable.

Annex II of MARPOL 73/78
and the IBC Code**SECTION 15: Regulatory information****15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture**

UFI	UFI: 9N40-60Y7-700Y-4NDN
National regulations	Control of Substances Hazardous to Health Regulations 2002 (as amended).
EU legislation	Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH) (as amended). Regulation (EC) No 1272/2008 of the European Parliament and of the Council of 16 December 2008 on classification, labelling and packaging of substances and mixtures (as amended). Commission Regulation (EU) No 2015/830 of 28 May 2015.
Guidance	Workplace Exposure Limits EH40.

15.2. Chemical safety assessment

No chemical safety assessment has been carried out.

SECTION 16: Other information

Abbreviations and acronyms used in the safety data sheet	ATE: Acute Toxicity Estimate. ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road. CAS: Chemical Abstracts Service. DNEL: Derived No Effect Level. EC ₅₀ : 50% of maximal Effective Concentration. IATA: International Air Transport Association. IMDG: International Maritime Dangerous Goods. LC ₅₀ : Lethal Concentration to 50 % of a test population. LD ₅₀ : Lethal Dose to 50% of a test population (Median Lethal Dose). NOEC: No Observed Effect Concentration. PBT: Persistent, Bioaccumulative and Toxic substance. PNEC: Predicted No Effect Concentration. REACH: Registration, Evaluation, Authorisation and Restriction of Chemicals Regulation (EC) No 1907/2006. UN: United Nations. vPvB: Very Persistent and Very Bioaccumulative.
Classification abbreviations and acronyms	Asp. Tox. = Aspiration hazard
Revision comments	NOTE: Lines within the margin indicate significant changes from the previous revision.
Revision date	14/01/2020

ZX-54

Revision	3.0
Supersedes date	01/11/2018
SDS number	10369
Hazard statements in full	H304 May be fatal if swallowed and enters airways.

This information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process. Such information is, to the best of the company's knowledge and belief, accurate and reliable as of the date indicated. However, no warranty, guarantee or representation is made to its accuracy, reliability or completeness. It is the user's responsibility to satisfy himself as to the suitability of such information for his own particular use.