SAFETY DATA SHEET

According to the Committee's Regulation (EU) 2015/830

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

1.1 Product identifier:

Trade name **Adhesive Ansercoll PUR 10**

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

Relevant identified uses for gluing fresh and seasoned wood, also for gluing rubber, metal, textile materials, concrete, tar board etc.

Uses advised against **-**

1.3. Details of the supplier of the safety data sheet

Zakłady Chemiczne „ANSER" Sp. z o.o.
ul. J. Conrada 7, 01-922 Warszawa
ph.: +48 22 663 70 73, fax: +48 22 669 01 22

E-mail address of the person responsible for the safety data sheet: reach@anser.pl

1.4. Emergency telephone number:

112 (24h)

SECTION 2: Hazards identification

2.1. Classification of the mixture

Classification according to the Regulation of the European Council 1272/2008.

Acute Tox. 4; H332, Eye Irrit 2; STOT SE 3; H335, Skin Irrit. 2; H315, Resp. Sens. 1; H334, Skin Sens. 1; H317 – May cause allergic skin reaction.

Harmful effects for human health

It is harmful through the respiratory tract. It is irritating for the eyes, respiratory tract and skin.

Limited evidence of carcinogenic effect. May cause allergic reaction after contact via respiratory tract or skin. It is harmful through the respiratory tract; It poses a serious health hazard in result of prolonged exposure. Contains isocyanates: in patients hypersensitive, especially with asthma even low vapour concentration may lead to bronchospasm or asthma attacks.

Symptoms and effects of the product- p.11.

Harmful effects for the environment

Product is not classified as dangerous for the environment.

Harmful effects related to physical-and-chemical properties

In contact of the product with water, CO_2 is formed. The reaction does not proceed in a dangerous manner, however, it results in the product losing its use properties (harmless amines in a solid form are the result of the reaction). If water gets into a closed container, the pressure may build up as the result of gas forming in consequence of the reaction, causing the container to tear apart or posing a risk at opening.

2.2. Elements of labelling

Pictograms:

Signal word: Danger

Expressions indicating the type of hazard:

H332- Harmful if inhaled

H319- Causes serious eye irritation

H315- Causes skin irritation

H335- May cause respiratory irritation

H334- May cause allergy or asthma symptoms or breathing difficulties if inhaled

H317- May cause an allergic skin reaction

Expressions indicating safety measures:

P102- Keep out of reach of children

P260- Avoid breathing dust/fume/gas/mist/vapours/

P280- Wear protective gloves/protective clothing/eye protection/face protection

P342+311- If experiencing respiratory symptoms: Call a POISON CENTER/doctor.

P405- Store locked up.

P501- Dispose of contents/cointainer in safety way.

2.3. Other hazards

The substances contained in the mixture do not meet the criteria PBT and vPvB pursuant to schedule XIII of the REACH Directive.

SECTION 3: Composition/information on ingredients

Name	Content % mass	Identifying numbers of substances	Classification acc. to Regulation (EC) 1272/2008
Diisocyanate 4, 4' methylenediphenyl	30 - 65%	CAS: 101-68-8 WE: 202-966-0	Carc. 2; H351 Acute Tox. 4; H332 STOT RE 2; H373

		Index no.: 615-005-00-9	Eye Irrit 2; H319 STOT SE 3; H335 Skin Irrit. 2; H315 Resp. Sens. 1; H334 Skin Sens. 1; H317

The full wording of expressions describing hazard is given in sec. 16.

Numbers of appropriate registration: no data.

SECTION 4: First aid measures.

4.1. Description of first aid measures

In case of exposure via respiratory tract

- Leave exposure area (or take the injured out of the exposure area).
- Assure peace and quite to the injured as well as access to fresh air.
- In case of breath arrest, give artificial respiration.
- In case of stifling, give oxygen.
- Assure medical assistance.

In case of exposure through contact with the skin

- Take off soiled clothing.
- Wash off with plenty of water (and soap if no irritation is visible).
- Consult the doctor in case of skin irritation.

In case of exposure through contact with the eyes

- Remove contact lenses.
- Do not use neutralizing preparations.
- Wash with plenty of cool water for about 15 minutes with the lids open (avoid strong water stream due to the risk of damaging the cornea mechanically)
- Consultation with an oculist is necessary.

In case of exposure via alimentary tract

- Do not provoke vomiting.
- Rinse the mouth with water.
- Assure medical assistance immediately. .

4.2. The most important acute and delayed symptoms and effects of exposure

It is harmful through the respiratory tract; it poses a serious health hazard in result of prolonged exposure. It is irritating for the eyes, respiratory tract and skin. In sensitive, allergic persons and especially persons suffering from asthma, even low concentrations of isocyanates may cause allergic reactions and lead to bronchi contractions and asthma seizures.

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

Decision as to the rescue procedure shall be taken by the doctor after careful examination of the condition of the injured.

SECTION 5: Fire-fighting measures.

Proceed in line with the Fire Safety Instruction, if the recipient does not have one, the persons on the site shall be notified about the failure. All persons not participating in repairing the failure shall be removed from the area at risk. Evacuation shall be ordered if needed. Minor fires shall be put out with extinguishers on hand, in case of major fires, State Fire Service and the Police shall be notified.

5.1. Extinguishing media

Appropriate extinguishing media: extinguishing powders and foams, carbon dioxide, water – dispersed jets.

Inappropriate extinguishing media: condensed stream of water.

5.2. Special risks related to the mixture

The product is flammable, however, it does not create a fire hazard.
Prevent leakage and extinguishing media and extinguishing water from getting to ground waters, potable water intakes and sewage system. In fire environment, there may form carbon oxides, nitric oxides and traces of hydrogen cyanide. Avoid inhaling combustion products.

5.3. Information for the fire services

The use of protective clothing with an independent breathing apparatus is recommended.

SECTION 6: Proceeding in the event of accidental release to the environment

6.1. Personal precautions, protective equipment and emergency procedures

For persons not belonging to the personnel giving assistance
Limit access of outsiders to the emergency area until appropriate cleaning procedures have been completed. Do not inhale vapours. Avoid creating product mist. If necessary, use personal protection means – see section 8.
For persons giving assistance
Avoid creating product mist. Avoid contact with skin and eyes. Do not inhale vapours. If necessary, use personal protection means – see section 8.

6.2. Precautions related to environment protection

Do not let the product get to the sewage system, ground or surface waters.

6.3. Methods and materials preventing the spread of contamination and aimed at removing contamination

- Protect drains.

- If possible, remove leakage (cut off liquid, place damaged packaging in a sealed protective container). In the event of a major leakage, the spot where liquid gathers shall be protected with an embankment, collected liquid shall be pumped out. Small volumes of spilled liquid shall be covered with a layer of non-flammable absorbing material (sand, soil), collected to a closed container and delivered for recycling or neutralization to competent units. Contaminated area shall be washed with water.

6.4. References to other sections

Personal protection means – section 8.
Waste shall be removed in line with the binding law provisions – section 13.

SECTION 7: Mixture handling and storage

7.1. Precautions for safe handling

During usage observe basic principles of hygiene of work with chemical products: do not eat or drink, avoid contact with the product, inhaling dust, contaminating eyes and skin. During breaks at work wash hands. Do not use clothing contaminated with the product. Observe the principles of personal hygiene. Avoid creating aerosols. The product shall not be used by persons suffering from asthma. Assure effective ventilation. Use personal protection means (see section 8).

The products hardens affected by air dampness. Once hardened, it creates a stiff foam, which is not harmful.

7.2. Conditions of safe storage including information on any mutual nonconformities

Store in original appropriately marked and tightly closed packaging in dry, shadowed locations. Optimum storage temperature +5 to +30^{O}C.
Guarantee period: 12 months.
Additional information n section 10.

7.3. Specific end uses

None.

SECTION 8: Exposure controls/personal protection means

8.1. Control parameters

Allowed concentration in working environment: no data for the product. Below data are stated for its ingredients.
(Regulation of the Labour and Social Policy Minister of November 29th 2002 on the highest allowed concentrations and intensities of agents hazardous for the health in work environment, Journal of Laws 2002 No 217 item 1833 as amended).

Name of the substance	***NDS [mg/m^3]***	***NDSCh [mg/m^3]***	***NDSP [mg/m^3]***
Diisocyanate 4, 4' methylenediphenyl [CAS: 101-68-8]	0.03	0.9	-

Diisocyanate 4, 4' methylenediphenyl [CAS: 101-68-8]

Countries	Border value [8 hs]		Border value (short-term)	
	ppm	mg/m^3	ppm	mg/m^3
Austria	0.005	0.05	0.01	0.1
Belgium	0.005	0.052		
Denmark	0.005	0.05	0.01	0.1
France	0.01	0.1	0.02	0.2
Germany		0.05		0.05(1)
Hungary		0.05		0.05
Spain	0.005	0.052		
Sweden	0.002	0.03	(0.005)	(0.05)

(1) 15-minute average value

Source: http://bgia-online.hvbg.de/LIMITVALUE/WebForm_gw.aspx

Recommended monitoring procedures

Regulation of the Health Minister of February 2011 on examining and measuring health hazardous agents in work environment (Journal of Laws 2011 No 33 item 166).

PN-Z-04131-02:1981 Air cleanness protection – Examining isocyanate values - Marking Diisocyanate 4, 4' methylenediphenyl on work posts with the colometric method

Diisocyanate 4, 4' methylenediphenyl

DNEL/PNEC Values Employees:

Acute/short-term exposure – systematic effects (skin): DNEL 50 mg/kg body mass/day Acute/short-term exposure – systematic effects (inhaling): DNEL 0,1 mg/m^3

Acute/short-term exposure – local effects (skin): DNEL 28,7 mg/cm^2

Acute/short-term exposure – local effects (inhaling): DNEL 0,1 mg/m^3 Long-term exposure – systematic effects (inhaling): DNEL 0,05 mg/m^3 Long-term exposure – systematic effects (skin): Does not apply. Long-term exposure – local effects (inhaling): DNEL 0,05 mg/m^3 Long-term exposure – local effects (skin): Does not apply.

Population:

Acute/short-term exposure – systematic effects (skin): DNEL 25 mg/kg body mass/day Acute/short-term exposure – systematic effects (inhaling): DNEL 0,05 mg/m^3

Acute/short-term exposure – systematic effects (orally): DNEL 20 mg/kg body mass/day

Acute/short-term exposure – local effects (skin): DNEL 17,2 mg/cm^2

Acute/short-term exposure – local effects (inhaling): DNEL 0,05 mg/m^3 Long-term exposure – systematic effects (inhaling): DNEL 0,025 mg/m^3 Long-term exposure – systematic effects (skin): Does not apply. Long-term exposure – systematic effects (orally): Does not apply. Long-term exposure – local effects (inhaling): DNEL 0,025 mg/m^3 Long-term exposure – local effects (skin): Does not apply. Long-term exposure – local effects (orally): Does not apply. Water PNEC (fresh water): 1 mg/l Water PNEC (seawater): 0,1 mg/l Water PNEC (changeable emission): 10 mg/l PNEC STP: 1 mg/l

Sediment PNEC: Because diisocyanate methylenediphenyl (PMDI) reacts with water, the contact between water and PMDI shall be strictly controlled. PMDI polymerization occurs in the presence of water, that is why in all likelihood PMDI susceptibility to sediments is of little significance. There is no connection in respect of PMDI and PNEC sediment.
Ground PNEC: In the ground 1 mg/kg (dry mass).

PNEC orally: No data on birds in respect of PMDI – oral effect. Birds exposure is not foreseen and data from experiments on animals indicate to low oral toxicity of PMDI.

8.2. Exposure control

Applied technical protection measures
Information provided in section 7.
Personal protection measures:
Eyes or face protection: in risk of exposure use protective glasses.
- hand protection: protective gloves resistant to product e.g. caoutchouc or rubber gloves.
- other: protective clothing from coated materials in anti-electrostatic version.

Respiratory protection: masks with organic vapours absorbers.
Thermal risks: does not apply.
Environment exposure protection
Mixture shall not access ground waters, sewage or soil.

SECTION 9. Physical and chemical properties.

9.1. Information about general physical and chemical properties

- Form: brown liquid
- Odour: characteristic
- Odour threshold: no data
- pH: no data
- Melting/solidification point
  MDI < 0°C
- Boiling temperature
  MDI > 300°C
- Flash point
  MDI > 200°C

• Evaporation rate	no data
• Flammability (of solid substance. gas)	does not apply
• Lower explosive/combustion limit	does not apply
• Upper explosive/combustion limit	does not apply
• Vapour pressure	does not apply
• Vapour density	does not apply
• Density	1,2 ± 0,02 g/cm^3
• Solubility in water	product not soluble in water, product soluble in organic solvents
• Partition coefficient: n-octanol/water	does not apply
• Self-ignition temperature	does not apply
• Decomposition temperature	no data
• Viscosity	MDI 170 – 230 mPa*s at 25°C
• Explosive properties	does not apply
• Oxidizing properties	does not apply

9.2. Other information

No data.

SECTION 10: Stability and reactivity

10.1. Reactivity

The product is not reactive under normal conditions.

10.2. Chemical stability

The product is stable under normal conditions.

10.3. Possibility of hazardous reactions

Unknown.

10.4. Conditions to avoid

Dampness, high temperature.

10.5. Incompatible materials

Strong oxidizers.

10.6. Hazardous decomposition products

Do not occur under normal conditions.

SECTION 11: Toxicological information.

11.1. Information on toxicological effects

Acute toxicity: no data for the product. Below data are stated for its ingredients:

Diisocyanate 4, 4'methylenediphenyl

LD50 (rabbit, skin) >9400 mg/kg body mass (24h)

LD50 (rat, oral feed) >10000 mg/kg body mass
LC50 (rat, inhaling) 0.49 mg/l (4h)

Irritating effect: product is irritating. It is irritating for the eyes, respiratory tract and the skin.
Caustic effect: based on the data available classification criteria are not met.
Allergenic effect: may cause allergy in result of exposure via respiratory tract and contact with the skin.
Repeated dose toxicity: no data for the product.
Carcinogenicity: limited evidence of carcinogenetic effect.
Diisocyanate 4, 4'methylenediphenyl
Carcinogenicity of the 2 category. Its is suspected it may cause cancer.
NOAEC (rat, inhaling) = 0.2 mg/m^3 (toxicity)
NOAEC (rat, inhaling) = 1,0 mg/m^3 (carcinogenicity)
Mutagenicity: based on the data available classification criteria are not met.
Toxicity to reproduction: based on the data available, classification criteria are not met.

Information on likely routes of affecting

Swallowing: symptoms as i the case of poisoning after inhalation poisoning.
Inhaling: irritating to the respiratory tract; potential allergenic effect after vapour inhalation. May cause irritation to the eyes, nose, throat and lungs, possibly related to throat desiccation, chest constriction and breathing difficulty. Symptoms of the respiratory system irritation may appear 5-6 hours after exposure. In sensitive and allergic people, and especially in people suffering from asthma, even low isocyjante concentrations may cause allergic reactions, bronchi contractions or asthma fits.
Skin exposure: irritating effect, may cause skin allergy.
Eyes exposure: irritating for the eyes. Liquid spurting into the eye may cause congestion of conjunctiva, imitation, stinging and pain of the eye.
Symptoms related to physical, chemical and toxicological properties: no data.
Delayed, immediate and prolonged effects of short- and long-term exposure: harmful via respiratory tract; poses a serious heath risk after long-term exposure. Long-tem contact may lead to red mark, rash and itching.
Consequences of mutual effect: no data.
Other information: no data.

SECTION 12: Ecological information.

Toxicity: no data for the product. Below data are stated for its ingredients:
Diisocyanate 4, 4'methylenediphenyl
Short-tem toxicity for fish:
Fresh waters fish: LC50 > 1000 mg/l (96h)

Short-term toxicity for aquatic invertebrates:

Fresh waters invertebrates EC50/LC50 > 1000 mg/l (24h)

Long-term toxicity for aquatic invertebrates:

Fresh waters invertebrates EC10/LC10 or NOEC = 10 mg/l (21 dni)

Toxicity for algae and cyanobacteria

Fresh waters algae EC50/LC50 > 1640 mg/l (72 h)

Toxicity for microorganisms

Microorganisms EC50/LC50 > 100 mg/l (3h)

Toxicity overland

Toxicity for macro organisms – excluding arthropods:

Eisenia fetida EC50 > 1000 mg/kg dry mass of soil (14 days)

Toxicity for overland arthropods: toxicity is not expected.

Toxicological data in respect of overland plants:

Avena sativa EC50 > 1000 mg/kg dry mass of soil (14 days)

Lactuca sativa EC50 > 1000 mg/kg dry mass of soil (14 days)

Toxicity for water environment –acute:

product is not classified EC/LC50 > 1000 mg/l for fish, invertebrates and algae Toxicity for water environment –chronic:

product is not classified NOEC > 1640 mg/l for algae, NOEC > 10 mg/l for invertebrates

12.1. Persistence and degradability

No data for the product. Below data are stated for its ingredients:

Diisocyanate 4, 4'methylenediphenyl

The period of half way decay (DT50) – 0.92 day.

Hydrolysis: MDI reacts with water by releasing a big quantity of generally neutral polyurea,

the period of half way decay (DT50) – 20h (at 25°C)

constant rate of the hydrolysis reaction – 0.5 – 1h

12.2. Bio-accumulative potential

The mixture's ingredients do not fulfil the criteria of bio-accumulative potential (B) and very high bio-accumulative potential (vB).

12.3. Mobility in soil

No data for the product. Below data are stated for its ingredients

Diisocyanate 4, 4'methylenediphenyl

There is no need for examinations as the substance degrades quickly by hydrolysis in water solutions. MDI, though, is hydrophobic and does not dissolve well in water, that is why the heterogenic reaction with water or soil is less violent. The main product of this reaction is the insoluble polyurea.

12.4. Results of PBT and vPvB assessment

The mixture's ingredients do not fulfil PBT and vPvB criteria.

12.5. Other adverse effects

No data.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

If possible, waste shall be recovered.

Do not allow the contamination of surface and ground waters. In line with the law regulation in force in Poland, waste may be collected, neutralized, recovered or recycled only by authorised companies, and it may be given only to such companies. In case of doubt, waste disposal procedures shall be discussed and agreed with the local Environment Protection Inspection unit.

Removal of mixture: Consider the possibility of putting to use.

Waste code: 08 05 01* - Waste from isocyanates.

Disposal of packaging: recycling or neutralization of packaging waste shall be done in line with the binding law regulations. Multi-use packaging shall be re-used after cleaning. Waste shall be neutralized in professional authorised incinerating plants or waste neutralization plants. Clean packaging may be disposed of as ordinary packaging waste.

Waste code: 15 01 10* – Packaging containing residues of hazardous substances or contaminated with them.

The Act of 27 April 2001 on waste (Journal of Laws of 2001 no 62 item 628 as amended).

The Environment Minister Regulation of 27 September 2001 on waste catalogue (Journal of Laws of of 2001 no 112, item 1206).

The Act of 11 May 2001 on packaging and Packaging waste (Journal of Laws of 2001 no 63, item 638 as amended).

SECTION 14: Transport information.

This product is not subject to regulations on the transport of dangerous goods by road.

Transport by road

14.1. UN Number	does not apply
14.2. Proper UN transport name	does not apply
14.3. Hazard class in transport	does not apply
14.4. Packaging group	does not apply
14.5. Environmental risk	unknown
14.6. Special precautions	while manipulating the cargo, use protection means in line with section 8
14.7. Bulk transport pursuant to schedule II to the convention MARPOL 73/78 and IBC code	no data

SECTION 15: Regulatory information.

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

The Regulation of the Minister of Health of 21 December 2005 on essential requirements for individual protection measures (Journal of Laws of 2005 No. 259, item 2173).

The Act of 25 February 2011 on chemical substances and their mixtures (Journal of Laws of 2011 no. 63 item 322).

The Regulation of the Minister of Health of 20 April 20012 on labelling containers with hazardous substances, preparations and some chemical preparations (Journal of Laws of 2012 No. 0 item 445).

Directive 1999/45/EC of the European Parliament and Council of 31 May 1999 on harmonising the regulatory, executive and administrative provisions of Member States relating to the classification, labelling and packaging of hazardous substances and mixtures.

Regulation (EC) No 1907/2006 of the European Parliament and Council of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH).

Regulation of the European Parliament and Council (EC) no. 1272/2008 of 16 December 2008 on the classification, labelling and packaging of hazardous substances and mixtures amending and repealing directives 67/548/EEC and 1999/45/EC and amending the directive (EC) no. 1907/2006 (Official Journal EU series L 353 of 31 December 2008 as amended).

Directive of the Committee (EC) no. 790/2009 of 10 August 2009 adjusting the Directive of the European Parliament and Council (EC) no. 1272/2008 of 16 December 2008 on the classification, labelling and packaging of substances and mixtures, to the technical-and-scientific progress.

Regulation of the Committee (EC) no. 453/2010 of 20 May 2010 amending the regulation No. 1906/2006 of the European Parliament and Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH).

European agreement on international transport of dangerous goods by road ADR (in force since January 1, 2005) (Journal of Laws of 2005, No. 178, item 1481).

The Act of 19 August 2011 on transport of dangerous goods by road (Journal of Laws of 2011 no. 227, item 1367 as amended).

The Act of April 16, 2004 on building products (Journal of Laws of 2004 No 92 item 881).

The Regulation of the Infrastructure Minister of August 11, 2004 on the systems of conformity assessment and requirements which notified units participating in conformity assessment should meet and the method of marking building products with the CE mark products (Journal of Laws of 2004 No 195 item 2011).

The Regulation of the Minister of Health of June 11, 2012 on the categories of hazardous substances and mixtures, whose packaging shall be equipped with locks preventing children from opening it and warning information sensed by touch (Journal of Laws of 2005 No. 0, item 688).

Court judgement of 10 September 2015 regarding SVHC substances. The Regulation (EC) No. 1907/2006 (REACH)- article 7, paragraph 2 and art. 33.

15.2. Chemical safety assessment

The producer of the mixture did not provide the evaluation of chemical safety.

SECTION 16: Other information.

Updates

Sections: 1, 8, 15.

The explanation of abbreviations and acronyms used in the safety data sheet

PBT – Persistent, Bio-accumulative, Toxic.

vPvB – very Persistent and very Bio-accumulative.

Carc. 2 – Carcinogenicity of category 2.

H351 – It is suspected to cause cancer.

Acute Tox. 4 – Acute toxicity of category 4

H332 – Harmful if inhaled.

STOT RE 2 – Toxic effect o target organs – repeated exposure STOT multiple exposure of category 2.

H373 – May damage organs in result of prolonged or repeated exposure.

Eye Irrit 2 – Irritating effect to the eyes of category 2.

H319 – Irritating effect to the eyes.

STOT SE 3 – Toxic effect on target organs – single exposure STOT single exposure of category 3.

H335 – May cause irritation of the respiratory tact.

Skin Irrit. 2 – Irritating effect to the skin of category 2.

H315 – Irritating effect to the skin.

Resp. Sens. 1 – Allergenic effect to the respiratory tract of category 1.

H334 – May cause allergy symptoms or asthma or breathing difficulty in consequence of inhaling.

Skin Sens. 1 – Allergenic effect to the skin of category 1.

H317 – May cause allergenic effect of the skin.

NDS – Highest allowed concentration.

NDSCh – Highest allowed momentary concentration.

NDSP – Highest allowed cap concentration.

PNEC – Predicted concentration not causing effects.

DN(M)EL – Level not causing changes.

LD50 - Lethal Dose 50% when you observe the death of 50% of the animals tested.

LC50 - Lethal Concentration 50% when you observe the death of 50% of the animals tested.

NOAEC – Concentration of the substance at which you do not observe any adverse effects.

EC50 - Half maximal effective concentration when you observe 50% slow down of growth or growth tempo.

EC10 - Concentration at which you observe 10% slow down of growth or growth tempo.

LC10 - Concentration at which you observe the death of 10% of the animals tested.

NOEC – The highest concentration of the substance at which you do not observe any adverse effects.

References to key literature and sources

Safety data sheet of the mixture's ingredients. Data base of the European Commission Joint Research Centre.

Legal regulations.

Recommendations with regard to employee trainings

Prior to commencement of work, the employee shall be trained from within the scope of Work Safety and Hygiene regarding the handling of chemicals and appropriate on the job training. Persons dealing with the transport of hazardous substances shall receive Work Safety and Hygiene training as well as the general on the job training.